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INTERNATIONAL TELECOMMUNICATION UNION

Radio Regulations

Edition of 1990

Revised in 1994

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Note by the Secretary-General

Following the decisions of the Additional Plenipotentiary Conference (Geneva, 1992) contained in Chapter II of the ITU Constitution and Chapter I of the ITU Convention relating to the restructuring of the Union, actions previously performed by the Secretary-General and the International Frequency Registration Board (IFRB) under the provisions of the Radio Regulations are now carried out by the Radiocommunication Bureau and by the Radio Regulations Board.

Relevant provisions in the present edition of the Radio Regulations still refer to the IFRB, the Board, the CCIR, CCITT, etc. Required changes in the Radio Regulations consequential to the restructuring of the Union will have to be adopted by a future competent world radiocommunication conference (WRC) and will then be reflected in the next edition of the Radio Regulations.

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Radio Regulations

PREAMBLE

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FOREWORD

FOREWORD

1. This edition of the Radio Regulations is published under the authority of the Secretary-General of the International Telecommunication Union. It is a consolidated document, which incorporates the provisions (Volume 1), the Appendices (Volume 2), and the Resolutions and Recommendations (Volume 3) of the Radio Regulations.

1.1 This edition includes the edition of 1982 of the Radio Regulations as adopted by the World Administrative Radio Conference, Geneva, 1979, as well as the partial revisions adopted respectively by the following Conferences:

- a) World Administrative Radio Conference for the Mobile Services, Geneva, 1983 (Mob-83).
- b) First Session of the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It, Geneva, 1985 (Orb-85).
- c) World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service, Geneva, 1987 (HFBC-87).
- d) World Administrative Radio Conference for the Mobile Services, Geneva, 1987 (Mob-87).
- e) World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It, Geneva, 1988 (Orb-88).
- f) World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum, Malaga-Torremolinos, 1992 (WARC-92).

1.2 The Final Protocols (reservations and counter-reservations of signatory delegations) to the Final Acts of the above-mentioned World Administrative Radio Conferences (see items I and 1.1) have not been reproduced in the Radio Regulations.

2. Pages are separately numbered for each Article, Appendix, Resolution, Recommendation, etc. The following symbols have been used for this numbering, which appears at the top of each page:

AT	= Analytical Table
AI	= Analytical Index of Resolutions and Recommendations
N	= Notes

RR	= Radio Regulations
AP	= Appendix
RES	= Resolution
REC	= Recommendation.

Examples:

AT-6	= Analytical Table, page 6
AI-3	= Analytical Index of Resolutions and Recommendations, page 3
N-2	= Notes, page 2
RR8-14	= Article 8 of the Radio Regulations, page 14
API6-5	= Appendix 16, page 5
RES500-2	= Resolution 500, page 2
REC604-1	= Recommendation 604, page 1.

2.1 The Foreword bears arabic page numbers and the Table of Contents bears roman page numbers.

2.2 In the Table of Contents the total number of pages for each category of information is indicated.

For example:

RR1-1/23	shows that Article 1 has 23 pages;
RR3-1	shows that Article 3 has only one page.

2.3 The addition, modification or deletion of a Provision, Appendix, Resolution or Recommendation is indicated by a symbol in **bold** type particular to each World Administrative Radio Conference, these are given below:

- a) The symbol **Mob-83** for the World Administrative Radio Conference for the Mobile Services, Geneva, 1983.
- b) The symbol **Orb-85** for the First Session of the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It, Geneva, 1985.
- c) The symbol **HFBC-87** for the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service, Geneva, 1987.
- d) The symbol **Mob-87** for the World Administrative Radio Conference for the Mobile Services, Geneva, 1987.

- e) The symbol **Orb-88** for the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It, Geneva, 1988.
- f) The symbol **WARC-92** for the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum, Malaga-Torremolinos, 1992 (WARC-92).

2.4 In the case of a deletion the symbol SUP is used and the conference having made the decision is indicated.

3. The Secretary-General and the General Secretariat have furnished, in addition to several short notes in the body of the text, the following notes:

- in the Part "Notes":
 - a note referring to the formation and use of call signs;
 - a note listing the provisions of the Radio Regulations that contain references to ITU-R Recommendations, together with the reference numbers and titles of the ITU-R Recommendations;
 - flowcharts on Radio Regulatory Procedures (see Resolution 6);
 - in Appendix 42:
 - a note listing former country designations as contained in the Table of Appendix 42 and the corresponding new country designations as notified to the Secretary-General of the ITU.
 - a note listing the international call sign series allocated by the Secretary-General on a provisional basis between the end of the World Administrative Radio Conference, Geneva, 1979, and 15 March 1994.
 - preceding the Resolutions, a note indicating the manner in which the Resolutions have been grouped and listing all the Resolutions abrogated by the World Administrative Radio Conferences held since 1979;
 - preceding the Recommendations, a note indicating the manner in which the Recommendations have been grouped and listing all the Recommendations abrogated by the World Administrative Radio Conferences held since 1979.
-

ANALYTICAL TABLE

ANALYTICAL TABLE *

RADIO REGULATIONS

APPENDICES TO THE RADIO REGULATIONS

Edition of 1990

Revised in 1994

ABBREVIATIONS AND SYMBOLS

Anx - Annex

AP - Appendix

Art - Article

Sec - Section

= - used in order to avoid repeating a heading or subheading

* For Resolutions and Recommendations of the Radio Regulations, please see the "Analytical Index of Recommendations and Resolutions".

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ANALYTICAL INDEX
OF RESOLUTIONS
AND RECOMMENDATIONS

ANALYTICAL INDEX OF RESOLUTIONS AND RECOMMENDATIONS

The Analytical Index of Resolutions and Recommendations is presented as a set of eight tables. Each table groups Resolutions and Recommendations bearing the same numbers.

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that on page IA-3, the numbers 30 - 69,
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The Resolution numbers are entered along the top of the table and the Recommendation numbers along the bottom. The absence of a number in the series indicates that the corresponding Resolution and/or Recommendation does not exist.

The key words or subjects relating specifically to the group of Resolutions and Recommendations in each separate table are listed in alphabetical order on the right-hand side of each page. These key words or subjects may be of primary or secondary importance for a particular Resolution or Recommendation.

For Resolutions, the symbol "O" denotes a primary key word or subject and the symbol "@" denotes a secondary one. For Recommendations, the symbol "=" denotes a primary key word or subject and the symbol "#" denotes a secondary one.

To determine the main subject of a Resolution or Recommendation, simply trace down the column bearing the relevant Resolution and/or Recommendation number until the symbol "O" or "=" is encountered. From that position trace towards the right of the table to find the subject concerned. The same procedure applies for determining a secondary subject where the relevant symbols are "@" for Resolutions and "#" for Recommendations.

Example: On page AI-3 grouping numbers 1 to 22, the symbols "O" and "@" are entered for Resolution 5 - by tracing to the right along a horizontal line from the primary symbol "O", the subject "Technical Cooperation and Assistance", for example, is found. Using the same method for the symbol "@", a secondary subject "UNDP" is found.

To determine the Resolutions or Recommendations to which a particular subject refers, begin on the right-hand side of the table at the appropriate subject and trace across towards the left until one (or more) of the relevant symbols is encountered. Then trace up or down the columns for Resolutions or Recommendations, as the case may be.

Example: "Technical Cooperation and Assistance" is listed on the right-hand side of the table on page AI-3. By tracing towards the left it becomes evident that "Technical Cooperation and Assistance" is a primary subject for Resolutions 5, 7, 14, 15, 16, 20 and Recommendation 6, and a secondary one for Recommendation 5.

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O		O	#		O	@									O	O	Frequency - Allocation
@		#	=														- Assignment
	O =																- Management
	O	O															- Use
					=		O	=				O					Geostationary-Satellite Orbit
			@			@											Identification of Stations
												@		@			Interference (Harmful)
									@	@	@						International Organisations - APTU/PATU/URTNA
												@					- ICAO
																	- IMO
															@		- UN
																	- UNCTAD
																	- UNDP
	=	@				=	#	=	@	#	#	O		@			ITU - Administrative Conferences
	#		@		@		#	@	#	@	#	@	@			@	- Administrative Council
									@	@	@	@	@			O	- BDT
#	@		@		@	#			@	#	@	@	@			@	- CCIR
	@								@	@	@	@	@				- CCITT
	@	@		#	@	@				#		@		@	O	@	- IFRB
	@		@		@		#	#	@	@	#	@	@	@		@	- Plenipotentiary Conference
	@		@						@	@	#	@	@	@			- Secretary-General
	@	#	@		@												Licences
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#		@		#	@	#	=	=	=	#	=		@	O		O	Radio Regulations
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															O		- Broadcasting
															@		- Fixed
												@					- Maritime Mobile
															@		- Mobile
=	O =	@															- Space
																	- Terrestrial
																	Ships & Aircraft of States not Parties to an Armed Conflict
																	Technical Cooperation and Assistance
1	2	4	5	6	7	8	9	10	11	13	14	15					RECOMMENDATIONS (=, #)

		32	33	34	35	37	38	39	42	44	45	46	60	61		63		65			69	RESOLUTIONS (O, @)
	#					O						O				=						Bandwidth
												O	O									Computers
														O								Coordination
																						Division of the World - Climatic Zones/Regions
																						Emissions
																						Equipment
																						Feeder Links
																						Frequency - Assignment
																						- Management
																						- Monitoring
																						- Sharing
																						- Tolerances
																						Frequency Spectrum
																						Geostationary-Satellite Orbit
																						Interference
																						International Organisations - CISPR/EC/ISRU
																						ITU - Administrative Conferences
																						- Administrative Council
																						- CCIR
																						- IFRB
																						- Plenipotentiary Conference
																						- Secretary-General
																						Master International Frequency Register (MIFR)
																						Procedures
																						Propagation
																						Radio Regulations
																						Services - Broadcasting
																						- Fixed
																						- Fixed-Satellite
																						- Mobile
																						- Mobile-Satellite
																						- Space
																						- Terrestrial
																						Technical Cooperation and Assistance
																						Technical Standards of the IFRB
30	31	32											60	61	62	63	64	65	66	68	69	RECOMMENDATIONS (=, #)

70					93	94		103	104	105	106	107	109	110	111	112	113	RESOLUTIONS (O, @)
	=										O							Equipment
										O						O	O	Feeder Links
									@				O					Frequency - Allocation
											@	@		O				- Assignment
																		- Management
O														@		O	O	- Sharing of Spectrum
																		- Use
								O #										Interference
		#			@	O												ITU - Administrative Conferences
					O		#							@				- Administrative Council
O																		- BDT
@		#	#	#			#							@	@	O	O	- CCIR
@		#		#														- CCITT
							#	@	@		@	@		@				- IFRB
		#												@		@		- Secretary-General
													O					Master International Frequency Register (MIFR)
														O				Multilateral Planning Meeting (MPM)
							#											Propagation
		#	=				#	@	O		O	@	O			O		Radio Regulations
					O	O												Review of Resolutions & Recommendations
@									O			O				O		Satellite networks
																	O	Services - Broadcasting-Satellite
							#	O								O	O	- Earth Exploration-Satellite
								=		O	O			O	O	O		- Fixed
																		- Fixed-Satellite
O																	O	- Land Mobile
																	O	- Mobile-Satellite
							#									O		- Radiolocation/Radionavigation
																O		- Space
																O		- Space Research
																O		- Standard Frequency and Time Signal
				=														SI Systems
@								@		@								Technical Cooperation & Assistance
O															@			Technical Standards
		=	=															Terminology
							=											Tropospheric Scatter
	71	72	73	74			100	103										RECOMMENDATIONS (=, #)

200	201	205	207	208	209	210	211	212	213	300					310	312	314	315	RESOLUTIONS (O, @)
								O	O		=	=	=			@			Call and Reply
	@																	O	Channels - Use
O		O	O			O	O												Charges
										O						#	@		Distress and Safety
										O									Frequency - Assignment
								O	O	O	#					#			- Paired
										O	@	=	=	=		@			- Sharing
O		O				O	@												- Use
			@			O													Global Maritime Distress and Safety System (GMDSS)
				@	@														Guardband
				@	@											@			International Organisations - ICAO
																@ #			- IHO
																			- IMO
@				@	@				@						#	@ #	@		- IOC/WMO
				@	@				@							@ #	@		ITU - Administrative Conferences
	@			@	@			O	O	O	#					@ #	#		- Administrative Council
		@						O								#	#	@	- CCIR
		@	@						@									@	- CCITT
				@	@		@		@				#		@ #	@			- IFRB
									@										- Secretary-General
		O																	Master International Frequency Register (MIFR)
																		O	Monitoring (unauthorized emissions)
O																		@	Oceanography
	@	@	@	@	O			O	@	@	@	#	#	#					Public Correspondence
																			Public Land Mobile Systems
												#	#	#					Radio Regulations
		O																	Radiotelephony
									@										Satellite EPIRBs (harmful interference to)
																			Services - Aeronautical Mobile (R)
@			O	O	@	@				O	=	#	#	#	#	=	@	@	- Land mobile/land mobile-satellite
	@																		- Maritime Mobile
	O																		- Maritime Mobile-Satellite
	@	O								O									- Mobile
																			- Mobile-Satellite
																			- Space
																	O		Telegraphy - A1A and A1B Morse
										O						O			- Narrow-Band Direct-Printing (NBDP)
																			Telemetry, Telecommand and Data Exchange
																	@		Watch
											302	303	304	305	306	310	312		RECOMMENDATIONS (=, #)

316			319	322	323	325	326	327	328	329	330	331	332	333	334	335	336	338	RESOLUTIONS (O, @)
	=																		Alerting
			=					O	O						O		O		Charging + Accounting
					O													O	Data Transmission
#					O							@			O			O	Digital Selective Calling (DSC)
						O													Distress and Safety
			O					O											Duplex Radiotelephony
																			Frequency - Paired
					O	O	O		O						O				- Sharing (Channel Spacing)
=				O							@	O						O	- Use
		#				O											O		Global Maritime Distress & Safety System (GMDSS)
																			HF Frequencies
												@							International Organisations - IALA
																			- ICAO
@	#	#		@	@					@	@	@	@	@					- IHO/WMO
@										@	@	@	@	@				@	- IMO
			#	@	#						@			@	O				- UNCTAD/UNDP
				@							@	@	@	@	@				ITU - Administrative Conferences
			#	@	#					@		@	@	@	@				- Administrative Council
						@	@	@	@	@		@	@	@			@		- CCIR
@	#	#		@	@					@	@	@	@	@			@		- IFRB
										@	@	@	@	@				@	- Secretary-General
								@						O					Maritime Safety Information MSI
										O				O			@		Master International Frequency Register (MIFR)
																			NAVTEX
		=	=			@	O	@	@	@		O			O		O		Non-Paired Ship Station Frequencies
											O								Radio Regulations
			@																Radiotelephony, Routine (Non-Distress) Calling
				@															Selective Calling
@		=	@		O	O	@		@				O		@		@	O	Service Documents
=															@			O	Services - Maritime Mobile
												@						O	- Maritime Mobile-Satellite
O																			SOLAS
			= @					O		O			@	@		O			Technical Cooperation and Assistance
									O										Telegraphy - NBDP
												O							- Wide-Band
				O															Watch
316	317	318	319																RECOMMENDATIONS (=, #)

		403	405	406		408	409	410	411	412	500				505	506	507	508	511	512	513	RESOLUTIONS (O, @)	
		=	@											#								Congestion	
		@									@											Distress and Safety	
										#			=	=								Equipment	
						O		O	O	O											O	Frequency - Allocation/Assignment	
						O				O	O				O			@				- Management	
		@								O	O											- Plan	
		O	O	O					O	@					O						O	- Use	
															O							Geostationary-Satellite Orbit	
																			=	O =	O =	HF Broadcasting	
																			O			HFBC - Procedures and Requirements	
																			O #			- Planning System	
			@			@				@ #											O	Interference	
	#	#	#							@				#								International Organisations - ICAO	
													#									- UN	
													#									- UNESCO	
													#									- UNIDO	
				#	#	@					=	=			@		@	O	O #	@	@ #	ITU - Administrative Conferences	
				#		@											@	@	@ #		#	- Administrative Council	
			#								#	#	#	#	@ #			@				- CCIR	
	#	#				@		O		@							@	@	@	#	@	- IFRB	
								O		@			#						@ #			- Plenipotentiary Conference	
	#							@			@											- Secretary-General	
				O			O	O	O	O												Master International Frequency Register	
											#				=					=		Meteorology	
								O														Propagation	
		@		#	=		@	O	O	O	@						@	@		@	@	Public Correspondence	
		O		=				O	O	O												Radio Regulations	
=	=	O =	O #	O #	=	O	O				O =	=	#	=		O =	O	O	O	O =	O =	O	Services - Aeronautical Mobile (OR)
																						- Aeronautical Mobile (R)	
																						- Broadcasting	
																						- Broadcasting-Satellite	
											@											- Radiodetermination	
																	@					- Space	
											#								@			Single Sideband (SSB) Technique	
																			= @	O		Spectrum Extension	
																				#		Technical Standards (IFRB)	
401	402	403	405	406	407						500	501	502	503	505					511	512	513	RECOMMENDATIONS (=, #)

[illegible]

NOTES

NOTES BY THE GENERAL SECRETARIAT

CALL SIGN FORMATION POSSIBILITIES

(see Section III of Article 25)

Type of station	RR number	Permitted formations	Number * of combinations	Observations
Fixed stations	2103	XXA-XXZ XXA2-XXZ9 XXA20-XXZ99 ¹ XXA200-XXZ999	26 208 2 080 20 800	¹ Recommended, as far as possible (see RR 2104)
Land stations	2103	XXA-XXZ XXA2-XXZ9 XXA20-XXZ99 XXA200-XXZ999	26 208 2 080 20 800	
Ship stations	2106	XXAA-XXZZ XXAA2-XXZZ9	676 5 408	
	2107	XL2000-XL9999 XXA2000-XXZ9999	8 000 208 000	L = Second character, provided it is a letter
Ship's survival craft stations	2111	P00-P99 **	100 per ship	P = Call sign of the parent ship (see RR 2106 and 2107)
		P20-P99 ***	80 per ship	
EPIRB stations	2113	B P BP	no limit	B = Morse letter B P = Call sign of the parent ship (see RR 2106 and 2107)
Aircraft stations	2109	XXXXA-XXZZZ	17 576	
Aircraft survival craft stations	2115	P2-P9	8 per aircraft	P = The complete call sign of the parent aircraft (see RR 2109)

XX = First two characters of allocated call sign series.

* = The actual number may be less, in order to comply with RR 2097-2100.

** = If last character of **P** is a digit.*** = If last character of **P** is a letter.

Type of station	RR number	Permitted formations	Number * of combinations	Observations
Land mobile stations	2117	XL2000-XL9999 XXA2000-XXZ9999 XXAA2000-XXZZ9999	8 000 208 000 5 408 000	L = Second character, provided it is a letter
Amateur stations	2119 2120 2100	Y0A-Y9Z Y0AA-Y9ZZ Y0AAA-Y9ZZZ	260 6 760 175 760	Y = First character, provided it is B, F, G, I, K, M, N, R or W (see RR 2101.1)
		XX0A-XX9Z XX0AA-XX9ZZ XX0AAA-XX9ZZZ	260 6 760 175 760	Call signs commencing with a digit when the second character is the letter O or I are not permitted (see RR 2100)
Experimental stations	2119	Y2A-Y9Z Y2AA-Y9ZZ Y2AAA-Y9ZZZ	208 5 408 140 608	Y = First character, provided it is B, F, G, I, K, M, N, R or W (see RR 2101.1)
		XX2A-XX9Z XX2AA-XX9ZZ XX2AAA-XX9ZZZ	208 5 408 140 608	
Stations in the space service	2122	XX00-XX99 XX000-XX999	100 1 000	If second character is a digit
		XX20-XX99 XX200-XX999	80 800	If second character is a letter

XX = First two characters of allocated call sign series.

* = The actual number may be less, in order to comply with RR 2097-2100.

**PROVISIONS OF THE RADIO REGULATIONS
CONTAINING REFERENCES TO
ITU-R RECOMMENDATIONS^{1, 2}**

(see Resolution 65)

RR Item	Subject	Relevant ITU-R Recommendation(s)
15 15.1	Coordinated Universal Time (UTC)	460-4
147	Occupied bandwidth	328-7
150	Power (relations between peak envelope power, mean power and carrier power)	326-6
161	Permissible interference	216-2, 240-6, 302-2, 356-4, 357-3, 412-5, 441-1, 466-6, 483-2, 496-3, 510-1, 514-1, 523-4, 558-2, 560-3, 565, 615, 641, 655-2, 669, 671-2, 735-1, 758, 760
300	Choice of transmitting, receiving and measuring equipment	139-3, 162-3, 239-2, 246-3, 266-1, 328-7, 329-6, 331-4, 332-4, 338-2, 343-1, 344-2, 346-1, 348-4, 349-4, 415-2, 436-2, 450-1, 454-1, 467, 599, 705, 852
302	Signal processing methods for most efficient use of the frequency spectrum	455-2, 601-3, 640-1, 646-1

¹ The data contained in this table have been extracted from Resolution ITU-R 18 (Book 5).

² In columns where the numbers of the Recommendations or Reports appear, the number following the hyphen indicates, in each case, the most recent version of each Recommendation or Report.

RR Item	Subject	Relevant ITU-R Recommendation(s)
305	Maximum permitted power levels for out-of-band emissions	328-7
312	Technique of measurements and the intervals of measurements to be employed when checking compliance with the Radio Regulations	182-4, 377-2, 378-5, 443-1
524	Use of band 6 765 - 6 795 kHz for ISM	433-5
661	Use of band 433.05 - 434.79 MHz for ISM	433-5
824A	Use of band 9 200 - 9 500 MHz for search and rescue transponders (SART)	628-2
911	Use of band 61 - 61.5 GHz for ISM	433-5
916	Use of band 122 - 123 GHz for ISM	433-5
922	Use of band 244 - 246 GHz for ISM	433-5
1084 1084.1	Calculation methods and criteria to be employed in evaluating interference	452-5, 465-5, 466-6, 483-2, 509-1, 523-4, 524-4, 580-4, 619-1, 620-1, 671-2, 672-2, 727, 731, 735-1, 736, 737, 739, 740, 741-1, 744, 766
1107 1107.1	Criteria to be employed in evaluating interference between earth stations and stations in terrestrial radiocommunication services	355-4, 356-4, 357-3, 358-4, 406-8, 452-5, 465-5, 509-1, 558-2, 580-4, 615, 620-1, 766, 1004, 1006
1118 1118.1	Calculation methods and criteria to be employed in evaluating interference which would be caused to terrestrial services by earth stations	355-4, 357-3, 452-5, 465-5, 509-1, 580-4, 615, 619-1, 620-1, 731, 766, 1004, 1006
1119 1119.1	Calculation methods and criteria to be employed in evaluating interference which would be caused to reception at the earth station by terrestrial services	355-4, 356-4, 406-8, 452-5, 465-5, 558-2, 580-4, 620-1, 731, 766, 1006

RR Item	Subject	Relevant ITU-R Recommendation(s)
1148 1148.1 1164 1164.1	Calculation methods and the criteria in evaluating interference relating to coordination between terrestrial stations and earth stations	355-4, 356-4, 406-8, 452-5, 465-5, 558-2, 580-4, 620-1, 731, 765, 766
1454	Technical standards of IFRB should be based, amongst other things, on CCIR Recommendations	240-6, 314-8, 339-6, 355-4, 356-4, 357-3, 358-4, 364-5, 368-7, 370-5, 371-6, 372-5, 406-8, 412-5, 434-5, 435-7, 441-1, 450-1, 452-5, 465-5, 496-3, 509-1, 527-3, 528-2, 529-1, 530-4, 532-1, 533-3, 534-3, 558-2, 578, 580-4, 589-2, 597-1, 598-1, 599, 615, 617-1, 619-1, 620-1, 638, 765, 766, 831, 832, 837, 842, 844, 1006
1582	Technical standards of IFRB should be based, amongst other things, on CCIR Recommendations	314-8, 355-4, 356-4, 358-4, 364-5, 368-7, 370-5, 373-6, 452-5, 465-5, 466-6, 479-3, 483-2, 496-3, 509-1, 510-1, 514-1, 517-2, 523-4, 524-4, 527-3, 528-2, 529-1, 530-4, 531-2, 558-2, 578, 580-4, 611-2, 617-1, 618-2, 619-1, 620-1, 671-2, 672-2, 680-1, 681, 682-1, 731, 735-1, 736, 744, 765, 766, 828, 829, 832, 837, 844, 1006
1620 1630	Technical criteria to be used in order to facilitate the application of Article 14	674, 744
1812	Receiver characteristics	331-4, 332-4, 478-4, 489-1, 494, 539-2, 726-1
1814 1814.1	Interference from technical apparatus (except ISM)	433-5
1815 1815.1	Interference from ISM equipment	433-5
1878	Standards on monitoring stations	182-4, 328-7, 377-2, 378-5, 443-1, 575, 854

RR Item	Subject	Relevant ITU-R Recommendation(s)
2057	Identification signals	493-5, 585-2, 587-1, 625-2, 820, 821, 823, 825
2075	Forms of identification signals	493-5, 585-2, 587-1, 625-2, 820, 821, 823, 825
2076	Transmission of identification signals	493-5, 585-2, 587-1, 625-2, 820, 821, 823, 825
2077	Identification methods	585-2, 587-1
2149	Identity assignments	493-5, 585-2, 587-1, 820, 821, 825
2501	Selection of sites and frequencies for terrestrial stations	452-5, 619-1, 620-1
2502 2502.2	Direction of maximum radiation in the frequency bands between 1 and 10 GHz	406-8, 765, Report 393-4
2503 2503.2	Direction of maximum radiation in the frequency bands between 10 and 15 GHz	406-8, 765, Report 393-4
2504 2504.1	Direction of maximum radiation in the frequency bands above 15 GHz	406-8
2506 2506.1	Power limits where compliance with No. 2502 is impracticable	406-8, 765, Report 393-4
2509 2509.1 2510 2510.1 2511 2511.2	Application of the limits concerning interregional interference	355-4, 356-4, 357-3, 358-4, 406-8, 558-2, 615*

* These Recommendations are of a general nature and are not limited to inter-regional sharing and interference.

RR Item	Subject	Relevant ITU-R Recommendation(s)
2539	Selection of sites and frequencies for earth stations	355-4, 356-4, 357-3, 358-4, 363-4, 406-8, 452-5, 465-5, 558-2, 580-4, 615, 619-1, 620-1, 699-1, 731, 1004*
2547 2547.1 2548 2548.1	Application of the limits concerning interregional interference (earth stations)	355-4, 356-4, 357-3, 358-4, 363-4, 406-8, 452-5, 465-5, 558-2, 580-4, 615, 619-1, 620-1, 699-1, 731, 1004*
2559 2559.1 2576 2576.1 2580 2580.1	Application of the limits concerning interregional interference	355-4, 356-4, 357-3, 358-4, 363-4, 406-8, 452-5, 465-5, 558-2, 580-4, 615, 619-1, 620-1, 699-1, 731, 1004*
2582 2582.1	Power-flux density limits	358-4
2613 2613.1 2614 2614.1	Accepted level of interference	514-1, 609-1, 743
2619 2619.1	Accepted level of interference	484-3, 509-1, 514-1, 609-1, 743
2623 2623.1	Accepted level of interference	509-1, 514-1, 609-1
2627 2627.1 2630 2630.1	Accepted level of interference	514-1, 609-1, 743
2632 2632.2	Level of interference	314-8, 479-3, 514-1, 515-1, 517-2, 580-4, 611-2

* These Recommendations are of a general nature and are not limited to inter-regional sharing and interference.

RR Item	Subject	Relevant ITU-R Recommendation(s)
2636	Limitation of off-axis radiation	509-1, 514-1, 524-4, 728
2770	Interference reduction	374-3, 376-1, 537
2772	Standard frequency and time signals. Technical characteristics	375-2, 460-4, 583-1, 685
2904	Level of interference	314-8, 479-3, 517-2, 611-2
2937A	Using digital selective calling and satellite techniques and/or direct-printing telegraphy	476-4, 490, 491-1, 492-5, 493-5, 541-4, 625-2, 627, 821
3259A	Characteristics of signals in the bands 406 - 406.1 MHz and 1 645.5 - 1 646.5 MHz	632-1, 633-1
N2940	Using Morse telegraphy and radio-telephony techniques for distress, urgency and safety transmissions	219-1, 489-1
N3110	Digital selective calling	493-5, 541-4, 821, 822
N3112.3	The format of distress calls and distress messages	493-5, 541-4
N3124	Acknowledgement of receipt of distress alert	493-5, 541-4
N3167	Locating signals	628-2, 633-1
N3212	Error correction techniques	476-4, 625-2, 820
N3236	Mode and format of the transmissions	476-4, 625-2, 820
N3276	Characteristics of EPIRB signals	632-1, 633-1
N3277	Characteristics of the "distress call"	493-5, 541-4
4123A	Characteristics of the digital selective calling equipment (Frequency bands between 4 000 kHz and 27 500 kHz)	493-5, 541-4
4323C	Characteristics of the digital selective-calling equipment	493-5, 541-4, 821
4681	Technical characteristics of digital selective-calling equipment	493-5

RR Item	Subject	Relevant ITU-R Recommendation(s)
4686D	Technical format of the call sequence	493-5, 541-4
4687C	Acknowledgement of call	493-5, 541-4
4687E	Technical format of the acknowledgement sequence	493-5, 541-4
4687J	Transmission of acknowledgement (automatic)	493-5, 541-4
4687K	Transmission of acknowledgement (time limit)	493-5, 541-4
4688A	Operation of DSC VHF or UHF systems	493-5, 541-4
4873	Message format in the ship-to-shore direction	476-4, 490, 491-1, 492-5, 625-2, 820
AP1 Sec. A Col. 9j Sec. D Col. 9j Sec. F.II Col. 9j	Type of antenna	705
Items 2.B.12b and d Note 4	Maximum power density	675-2
Item 2.B.12d Note 8	Carrier type	739
Items 2.C.8b and e Note 4	Maximum power density	675-2
Item 2.C.8e Note 8	Carrier type	739

RR Item	Subject	Relevant ITU-R Recommendation(s)
AP3 Sec. III Items 3.B.6b and d Note 4	Maximum power density	675-2
Item 3.B.6d Note 8	Carrier type	739
Items 3.C.5b and e Note 4	Maximum power density	675-2
Item 3.C.5e Note 8	Carrier type	739
AP4 Sec. C Item 4a Sec. D Item 4a	Maximum spectral power density calculation	675-2
AP6 Part B Item 2	Computation of necessary bandwidth	328-7, 338-2, 853
AP7 Note 36	Frequency tolerances	478-4
AP8 Notes 12 and 13	Spurious emissions	329-6, 726-1
AP9 List VIII Part II-D	Particulars of monitoring stations carrying out bandwidth measurements	443-1, Report 275-5
Part III Note 1	Information available for bandwidth measurements	443-1, Report 275-5
AP19 Item 8	Characteristics of transmitters and receivers	489-1
AP28 Para 2.3.1 Note 2	Permissible level of the interfering emission	356-4, 357-3

RR Item	Subject	Relevant ITU-R Recommendation(s)
AP28 Para 3.2.2 Note	Calculation of coordination distance. Numerical method	452-5, 465-5, 580-4, 620-1, 731, 847-1, 848-1, 849-1, 850
Table 1 Note 5	Parameters required for determination of coordination distances in satellite communications	452-5, 465-5, 580-4, 620-1, 731, 847-1, 848-1, 849-1, 850
AP29 Para 2.2.1	Radiation patterns for earth station antennas	465-5, 580-4, 731, 738
Annex III	Radiation patterns for earth station antennas to be used when they are not published	465-5, 580-4, 731, 738
AP30 (Orb-85) Art. 6 Para 6.1.3 Note 1	Criteria of evaluation of interference in satellite communications	452-5, 619-1, 620-1, 679-1, 744
Art. 7 Para 7.2.5 Note 1	Criteria of evaluation of interference in satellite communications	452-5, 619-1, 620-1, 679-1, 744
Annex 5 Para 3.1	Pre-emphasis characteristics in satellite broadcasting	405-1
Para 3.6	Figure of merit (G/T) of receiving installations	790, Report 473-5
Para 3.9.3	Spurious emissions	329-6
Annex 6 Para 1.1 Note 5	Protection requirements for sharing between services	483-2
Para 1.6b Note 1	Quality of the wanted service (grade 4.5)	500-5
Para 2.1	Reference antenna	465-5, 580-4, 731
Para 3.3	Use of energy dispersion	Report 631-4
AP30B Annex 1 Sec. A Para 1.2f	Rain attenuation model	618-2, Recommendation 564-3

RR Item	Subject	Relevant ITU-R Recommendation(s)
AP38 Item d Note 2	Necessary bandwidth of receiving equipment	476-4, 625-2, 627
Item e	Frequency shift keying ("space" and "mark")	490
Item f	Characteristics of the error-detecting and correcting equipment	476-4, 625-2
Item i	Conversion of call signal	476-4, 625-2
AP43 Para 2.1	Maritime identification digits	491-1, 585-2
Para 3.1.1	Ship station identities	491-1, 585-2
AP45 Part B Para 3	Characteristics of the reference receiver	640-1

BR FLOWCHARTS ON RADIO REGULATORY PROCEDURES

(See Resolution 6)

The flowcharts listed below are an aid to understanding and do not form part of the Radio Regulations.

Flow-chart	Subject	Relevant provisions of the RR
1	The advance publication procedure of Section I of Article 11 of the Radio Regulations, applicable to stations in geostationary or non-geostationary-satellite networks	Art11 (Sec I)
2	The RR1060 coordination procedure applicable to space or earth stations in a geostationary-satellite network in relation to other geostationary-satellite networks operating in the same frequency band, before an assignment is notified to the BR	Art11 (Sec II)
3	The RR1107 coordination procedure applicable to earth stations in relation to terrestrial stations before an assignment is notified to the BR (in application of RR1107 in frequency bands above 1 GHz and section III of the Annex to Resolution No. 46)	Art11 (Sec III)
4	The coordination procedure of Section IV of Article 11 of the Radio Regulations or Section IV of the Annex to Resolution No. 46	Art11 (Sec IV)
5	Date of submission of a notice vis-à-vis date of putting the assignment into use (terrestrial services in bands not shared with space services)	Art12 (Sec I)

Flow-chart	Subject	Relevant provisions of the RR
6	Date of submission of a notice vis-à-vis date of putting the assignment into use (terrestrial services in frequency bands above 28 MHz)	Art12 (Sec I)
7	Regulatory examination of notices with respect to RR1240, RR1352 or RR1503	Art12 and Art13
8	Procedure relating to technical examination of frequency assignment notices in bands below 28 MHz other than exclusive bands (RR1241 or RR1242)	Art12 (S-Sec IIA)
9	Procedures relevant to examination of frequency assignment notices concerning stations in the broadcasting service in bands below 5950 kHz to which Article 12 of the Radio Regulations applies	Art12 (S-Sec IIA)
10	Procedure relating to resubmitted notices (RR1254 - RR1265)	Art12 (S-Sec IIA)
11	Procedure under RR1218 for the fixed service in bands between 3 and 27.5 MHz	Art12 (S-Sec IIA)
12	Procedures relating to examination and recording of assignments to terrestrial services operating in bands above 28 MHz which are not shared with equal rights with space services	Art12 (S-Sec IIA)
13	Procedure relating to examination of notices of assignments to transmitting coast radiotelephone stations in the exclusive maritime mobile bands between 4000 and 27500 kHz	Art12 (S-Sec IIB)
14	Procedure relating to examination of notices of assignments to receiving coast radiotelephone stations in the exclusive maritime mobile bands between 4000 and 27500 kHz	Art12 (S-Sec IIB)

Flow-chart	Subject	Relevant provisions of the RR
15	Procedure relating to examination of notices of frequency assignments in the exclusive aeronautical mobile (R) bands between 2 850 and 22 000 kHz	Art12 (S-Sec IIC)
16	Procedure relating to examination of notices of frequency assignments in the exclusive aeronautical mobile (OR) bands between 3 025 and 18 030 kHz	Art12 (S-Sec IIC)
17	Procedures relating to examination and recording of assignments to terrestrial stations which are in the same frequency band as, and within the coordination area of, an existing earth station or one for which coordination has been successfully completed or initiated	Art12 (S-Sec IIE)
18	Date of submission of a notice vis-à-vis date of putting the assignment into use (space services, space or earth stations)	Art13 (Sec I)
19	Procedure of examination and registration of assignments to stations in space services other than the broadcasting-satellite service and feeder link for the broadcasting-satellite service	Art13 (Sec II)
20	The Article 14 procedure	Art14
21	The Article 16 procedure	Art16
22	Article 17: Time table of activities	Art17
23	The Article 17 procedure relating to assignments to broadcasting stations in the exclusive bands between 5 950 and 26 100 kHz	Art17

Flow-chart	Subject	Relevant provisions of the RR
24	The procedure of Article 4 of Appendix 30 (Orb-85) for modification of the Plans for the broadcasting-satellite service in the bands 11.7 - 12.2 GHz (Region 3), 11.7 - 12.5 GHz (Region 1) and 12.2 - 12.7 GHz (Region 2)	AP30 (Orb-85) (Art4)
25	Notification, examination and registration of assignments to space stations in the broadcasting-satellite service in the bands 11.7 - 12.2 GHz (Region 3), 11.7 - 12.5 GHz (Region 1) and 12.2 - 12.7 GHz (Region 2) in accordance with Article 5 of Appendix 30 (Orb-85)	AP30 (Orb-85) (Art5)
26	Notification, examination and registration of assignments to space stations in the broadcasting-satellite service, except those stations which operate in the bands of Appendix 30, in accordance with Section C of Resolution No. 33	AP30 (Orb-85) (Art5)
27	The Procedure of Article 4 of Appendix 30A (Orb-88) for modification of the Plan for the feeder-link stations in the fixed-satellite service in the bands 14.5 - 14.8 GHz and 17.3 - 18.1 GHz in Regions 1 and 3, and 17.3 - 17.8 GHz in Region 2	AP30A (Orb-88) (Art4)
28	Notification, examination and registration of frequency assignments to feeder-link transmitting earth stations and receiving space stations in the fixed-satellite service in the bands 14.5 - 14.8 GHz and 17.3 - 18.1 GHz in Regions 1 and 3, and 17.3 - 17.8 GHz in Region 2	AP30A (Orb-88) (Art5)

FLOWCHART No. 1
Sheet 1 of 2

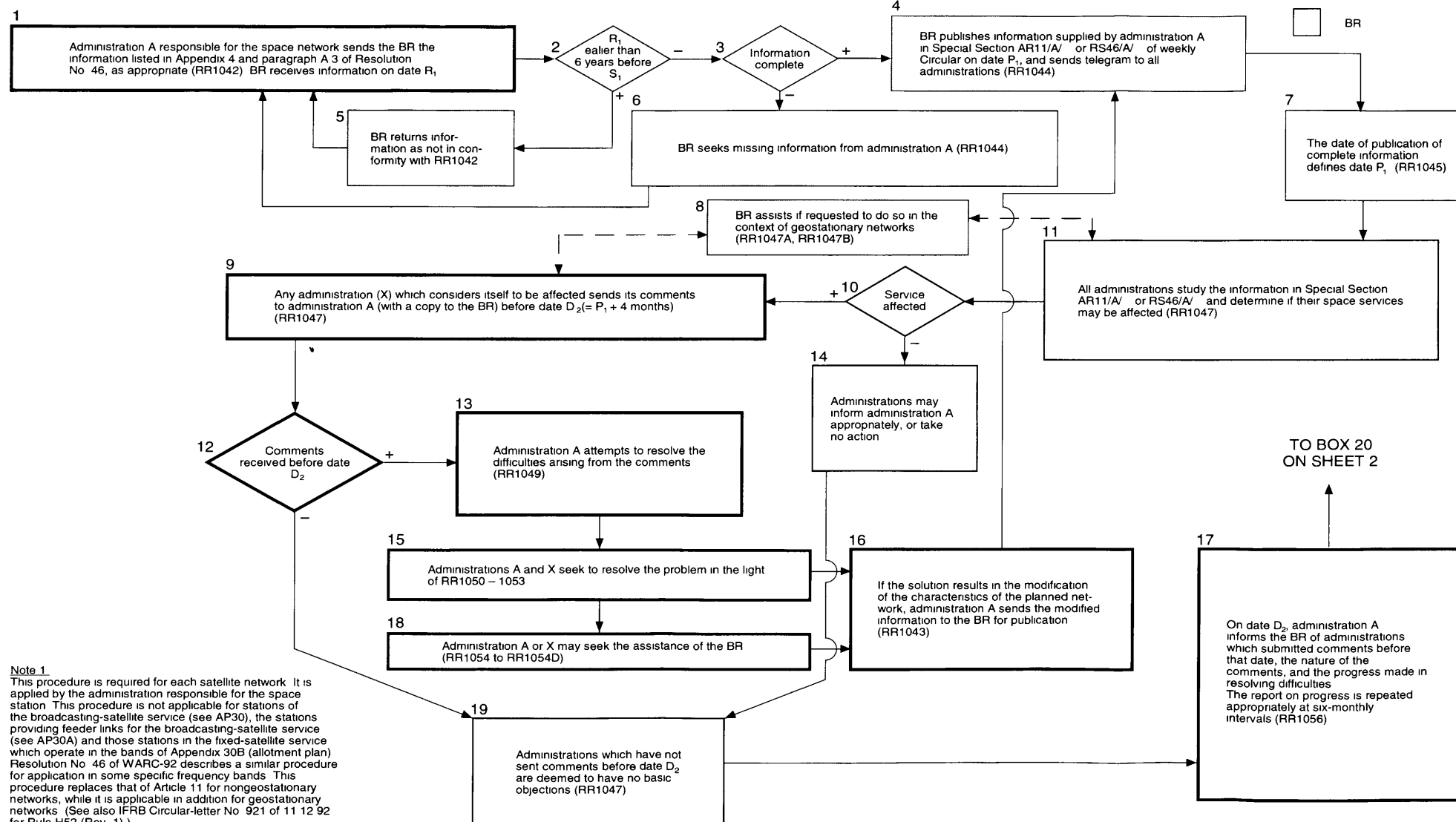
**THE ADVANCE PUBLICATION PROCEDURE OF SECTION I
OF ARTICLE 11 OF THE RADIO REGULATIONS, APPLICABLE TO STATIONS
IN GEOSTATIONARY OR NON-GEOSTATIONARY SATELLITE NETWORKS (SEE NOTE 1)**

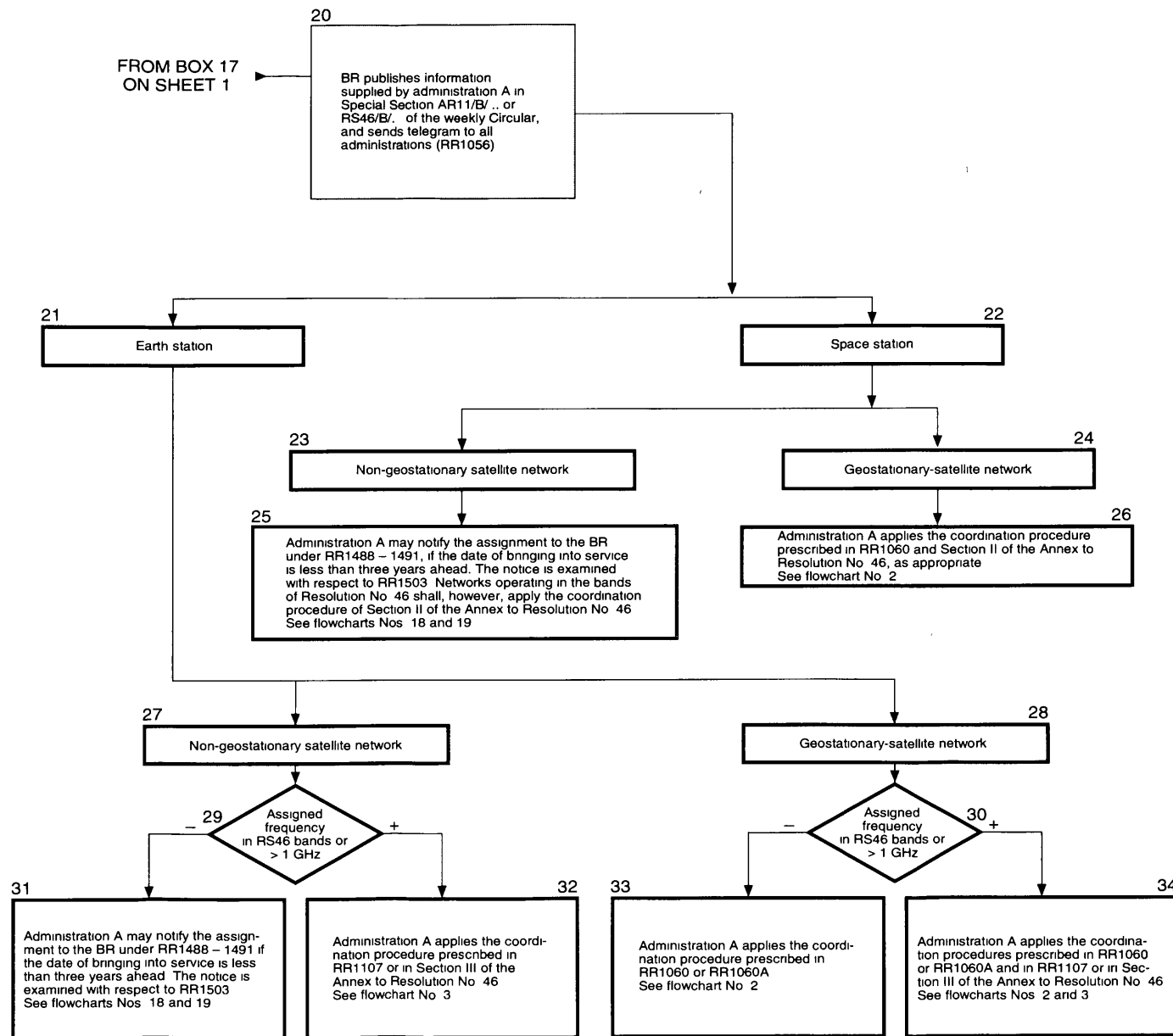
THIS FLOWCHART IS ISSUED AS AN AID TO UNDERSTANDING AND DOES NOT FORM PART
OF THE RADIO REGULATIONS

S_1 = Proposed date on which assignment
is to be put into use
+ = Yes
- = No

Action by




<input type="checkbox"/>	Administration A
<input type="checkbox"/>	Another administration
<input type="checkbox"/>	BR



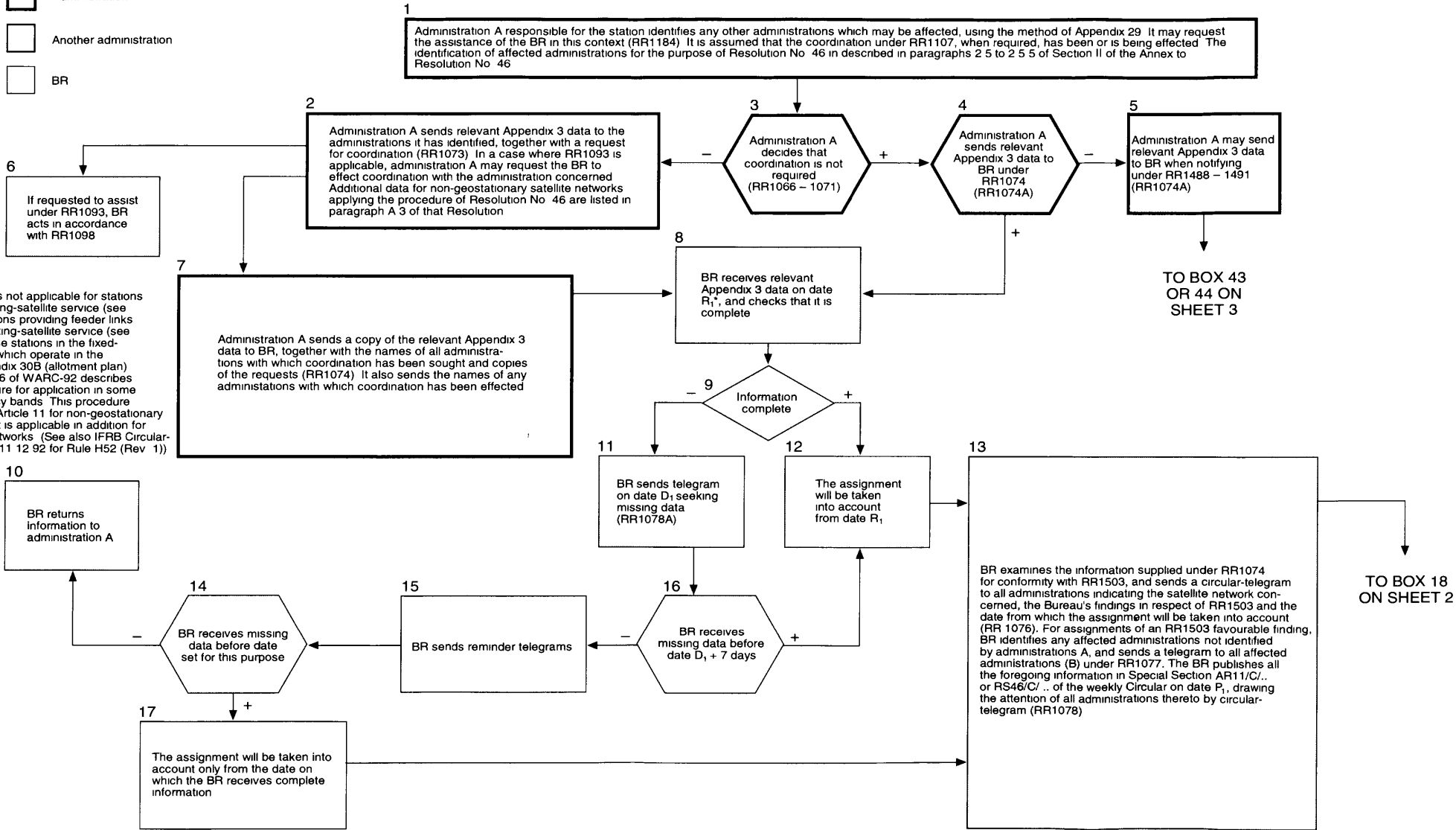


+ = Yes
- = No

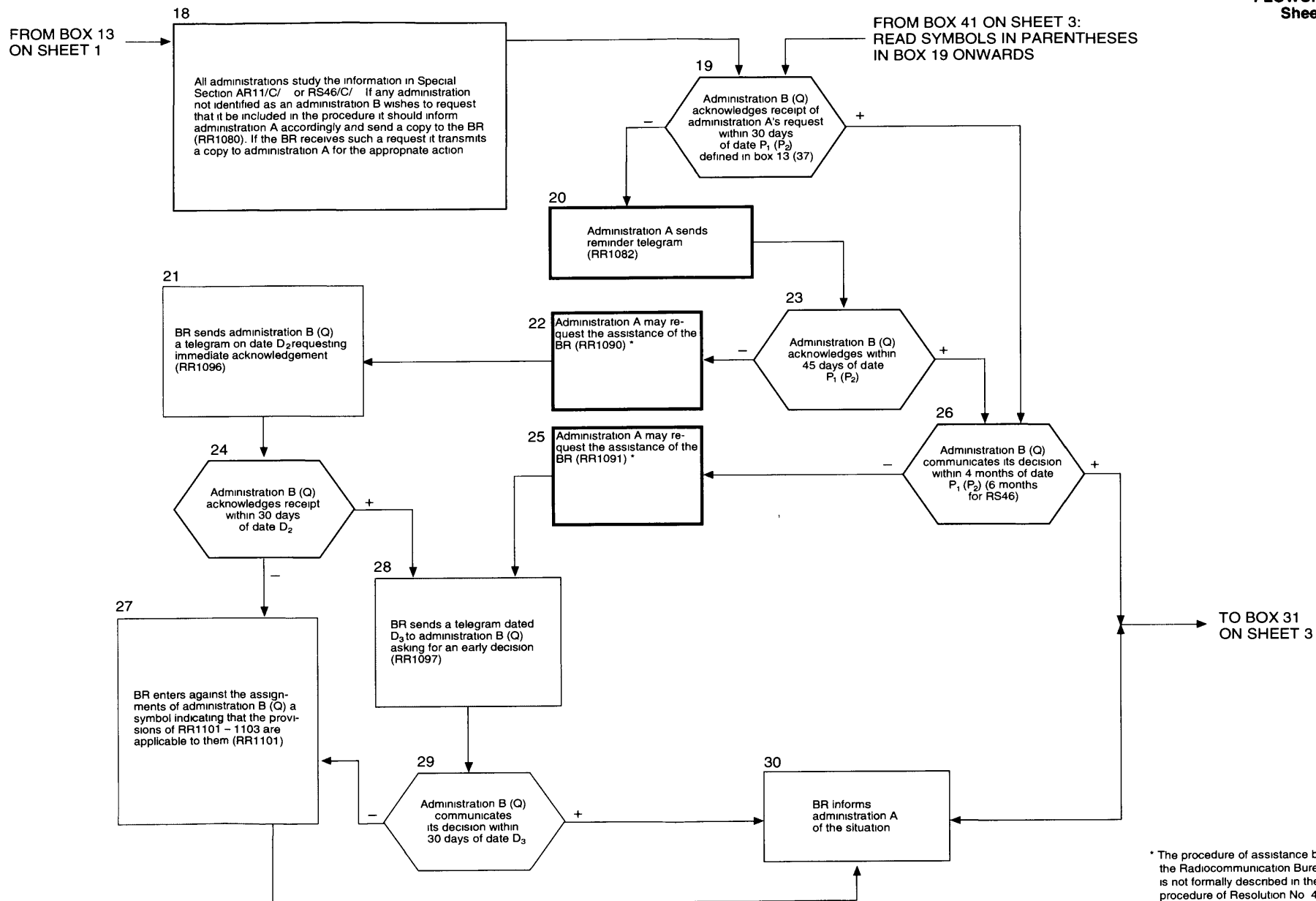
Action by

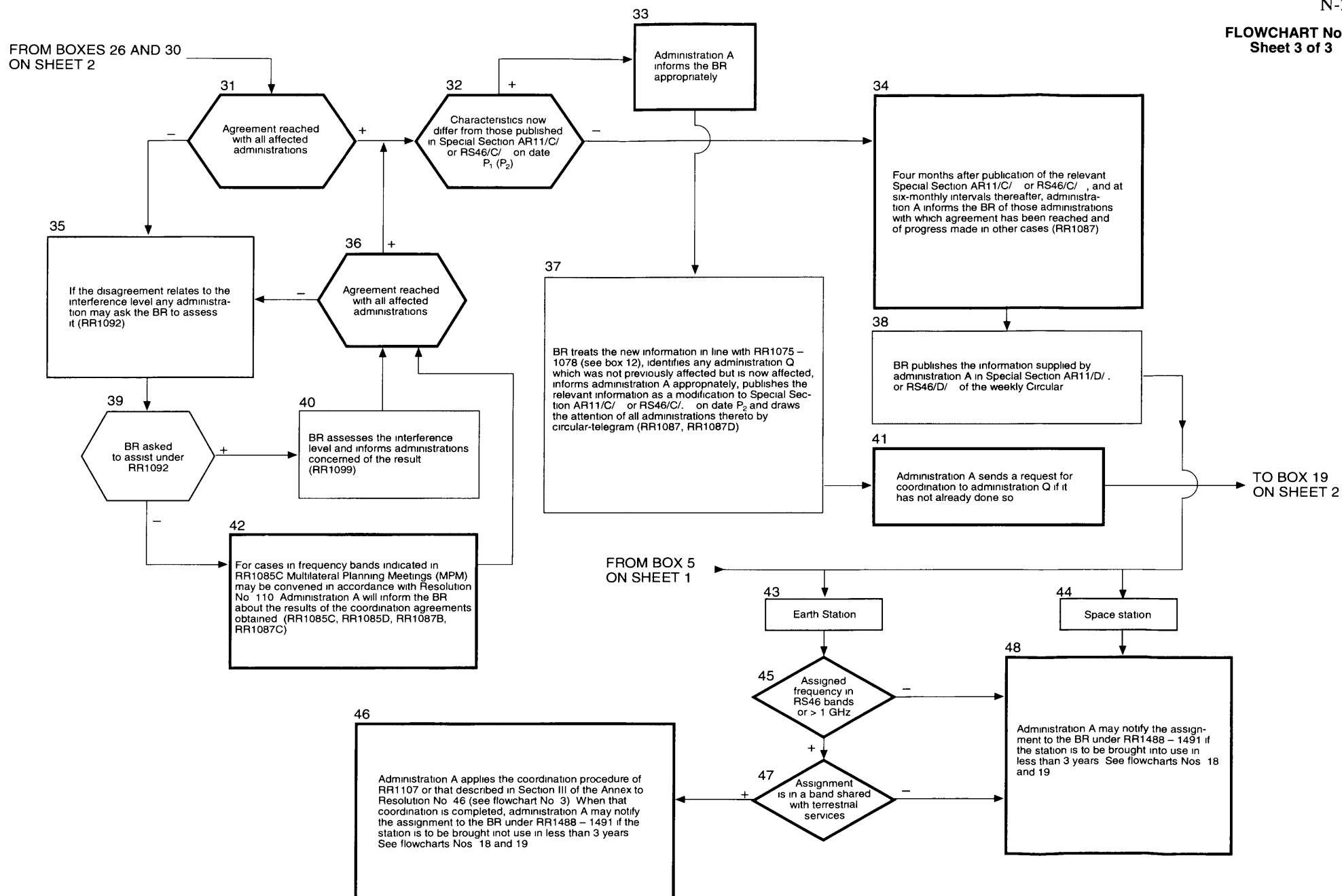
	Administration A
	Another administration
	BR

NOTE 1.
This procedure is not applicable for stations of the broadcasting-satellite service (see AP30). The stations providing feeder links for the broadcasting-satellite service (see AP30A) and those stations in the fixed-satellite service which operate in the bounds of Appendix 30B (allotment plan) Resolution No. 46 of WARC-92 describes a similar procedure for application in some specific frequency bands. This procedure replaces that of Article 11 for non-geostationary networks, while it is applicable in addition for geostationary networks (See also IFRB Circular-letter No. 921 of 11 12 92 for Rule H52 (Rev. 1)).



*) If R₁ is earlier than the date of receipt of the advance publication information plus 6 months, then this latter will be considered by the BR as R₁ date for any further application of the provisions of Article 11 (RR1058E)





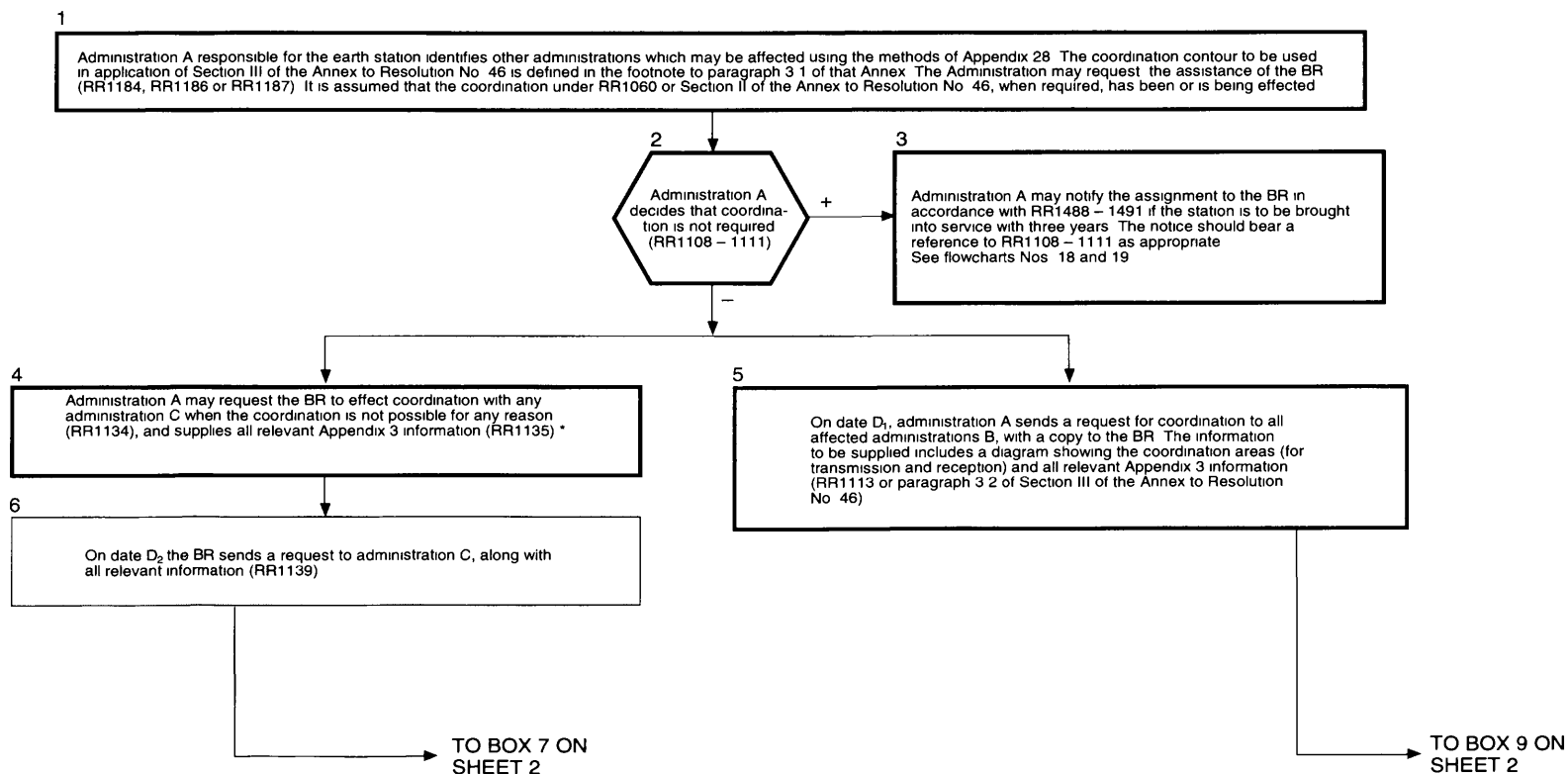
THE RR1107 COORDINATION PROCEDURE APPLICABLE TO EARTH
 STATIONS IN RELATION TO TERRESTRIAL STATIONS BEFORE
 AN ASSIGNMENT IS NOTIFIED TO THE BR

(In application of RR1107 in frequency bands above 1 GHz and Section III of the Annex
 to Resolution No. 46)

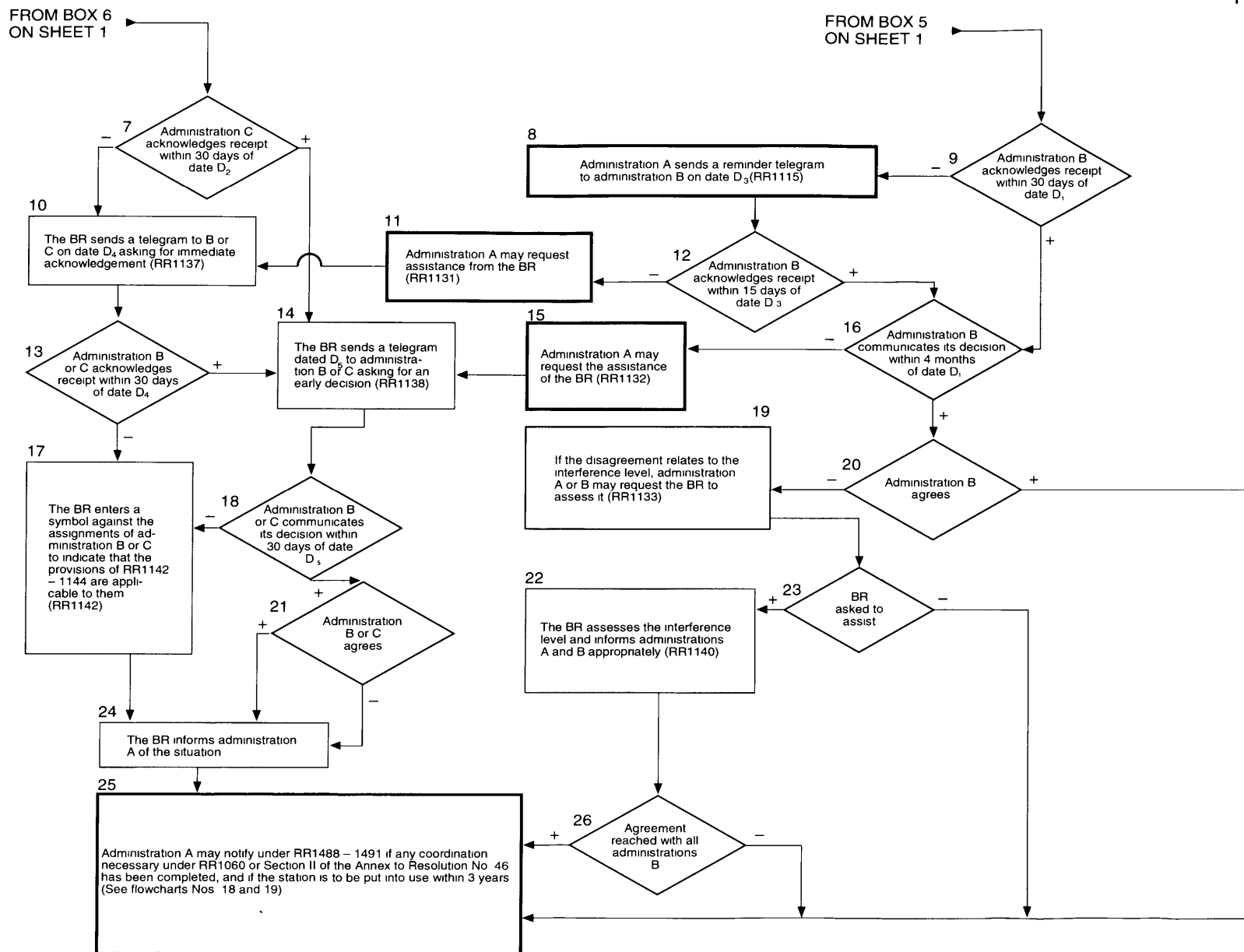
THIS FLOWCHART IS ISSUED AS AN AID TO UNDERSTANDING AND
 DOES NOT FORM PART OF THE RADIO REGULATIONS

+ = Yes, - = No

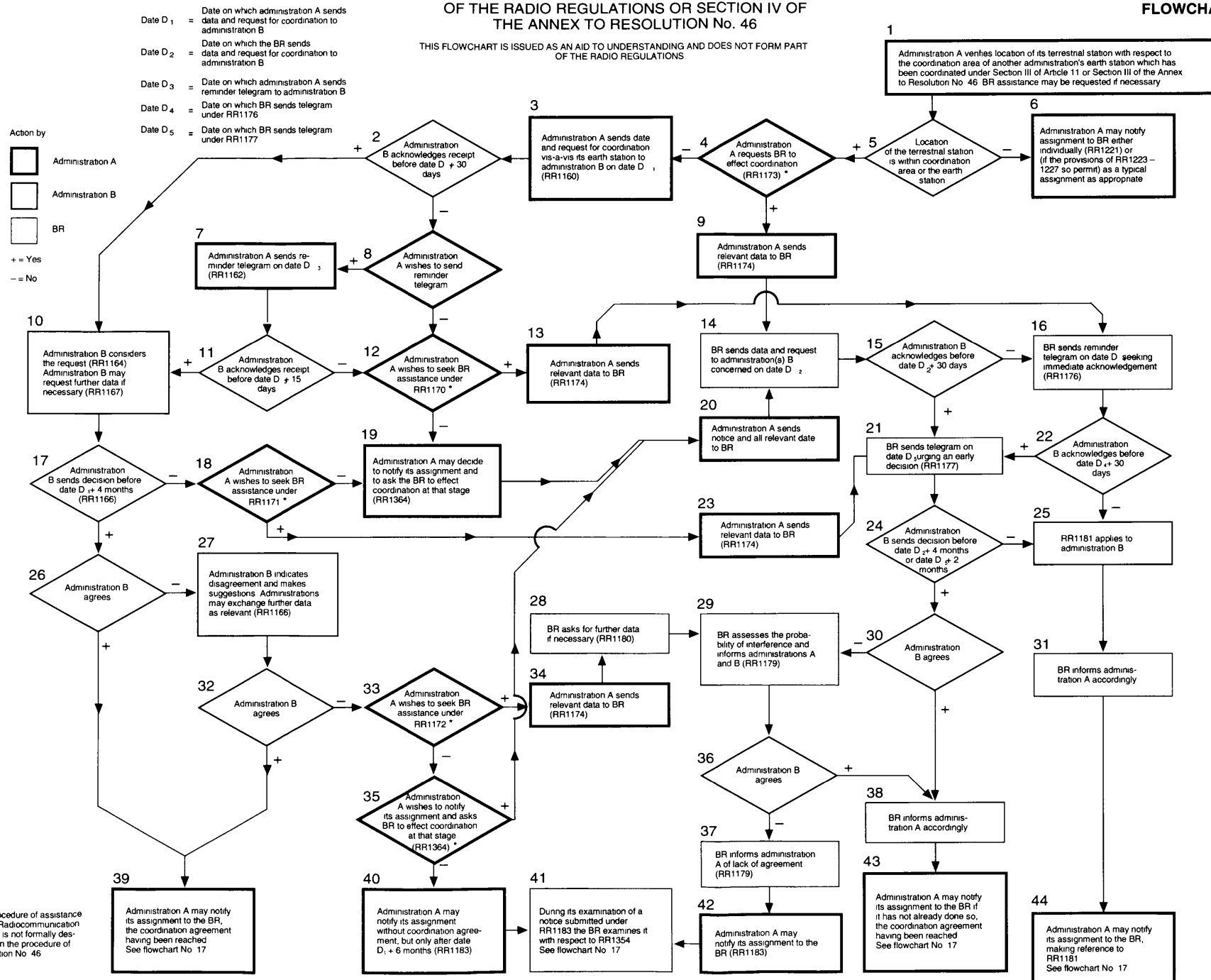
Action by ☐ Administration A
☐ Another administration
☐ BR



* The procedure of assistance by the Radiocommunication Bureau is not formally described in the procedure of Resolution No. 46



THIS FLOWCHART IS ISSUED AS AN AID TO UNDERSTANDING AND DOES NOT FORM PART
OF THE RADIO REGULATIONS



* The procedure of assistance by the Radiocommunication Bureau is not formally described in the procedure of Resolution No. 46.

DATE OF SUBMISSION OF A NOTICE VIS-A-VIS DATE OF PUTTING THE ASSIGNMENT INTO USE
(Terrestrial services in bands not shared with space services)

R_1 = Date of receipt of original notice by BR

S_1 = Originally notified date of putting the assignment into use

Action by



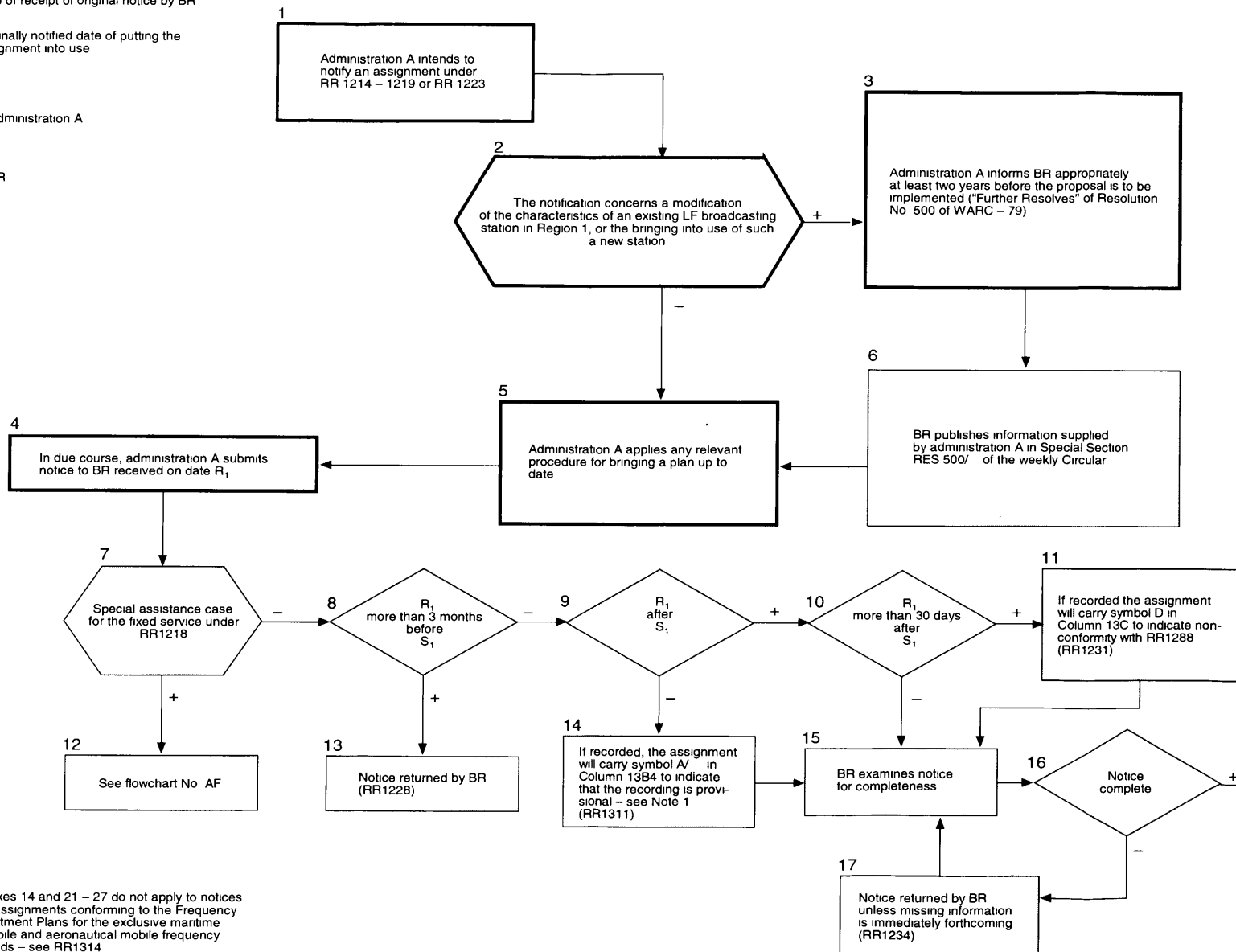
Administration A



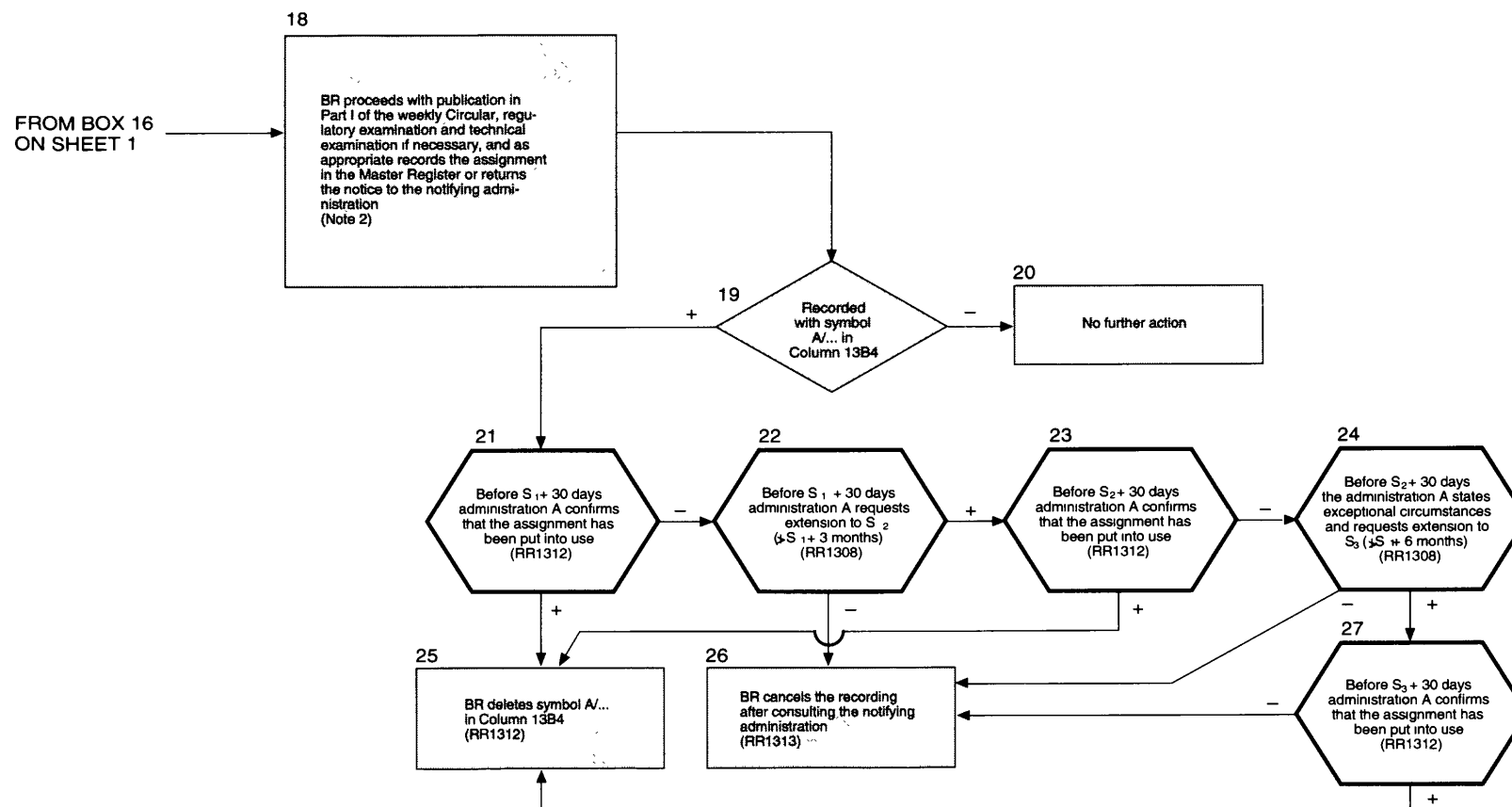
BR

+ = Yes

- = No



Note 1 Boxes 14 and 21 – 27 do not apply to notices of assignments conforming to the Frequency Allotment Plans for the exclusive maritime mobile and aeronautical mobile frequency bands – see RR1314



Note 2 This flowchart is primarily concerned with dates, and consequently does not show details of the Bureau's examination and recording procedures, which are illustrated in other flowcharts dealing with particular frequency bands or services

DATE OF SUBMISSION
OF A NOTICE VIS-A-VIS DATE OF PUTTING THE ASSIGNMENT INTO USE
(Terrestrial services in frequency bands above 28 MHz)

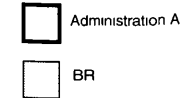
N-27
FLOWCHART No. 6

R_1 = Date of receipt of original notice by BR

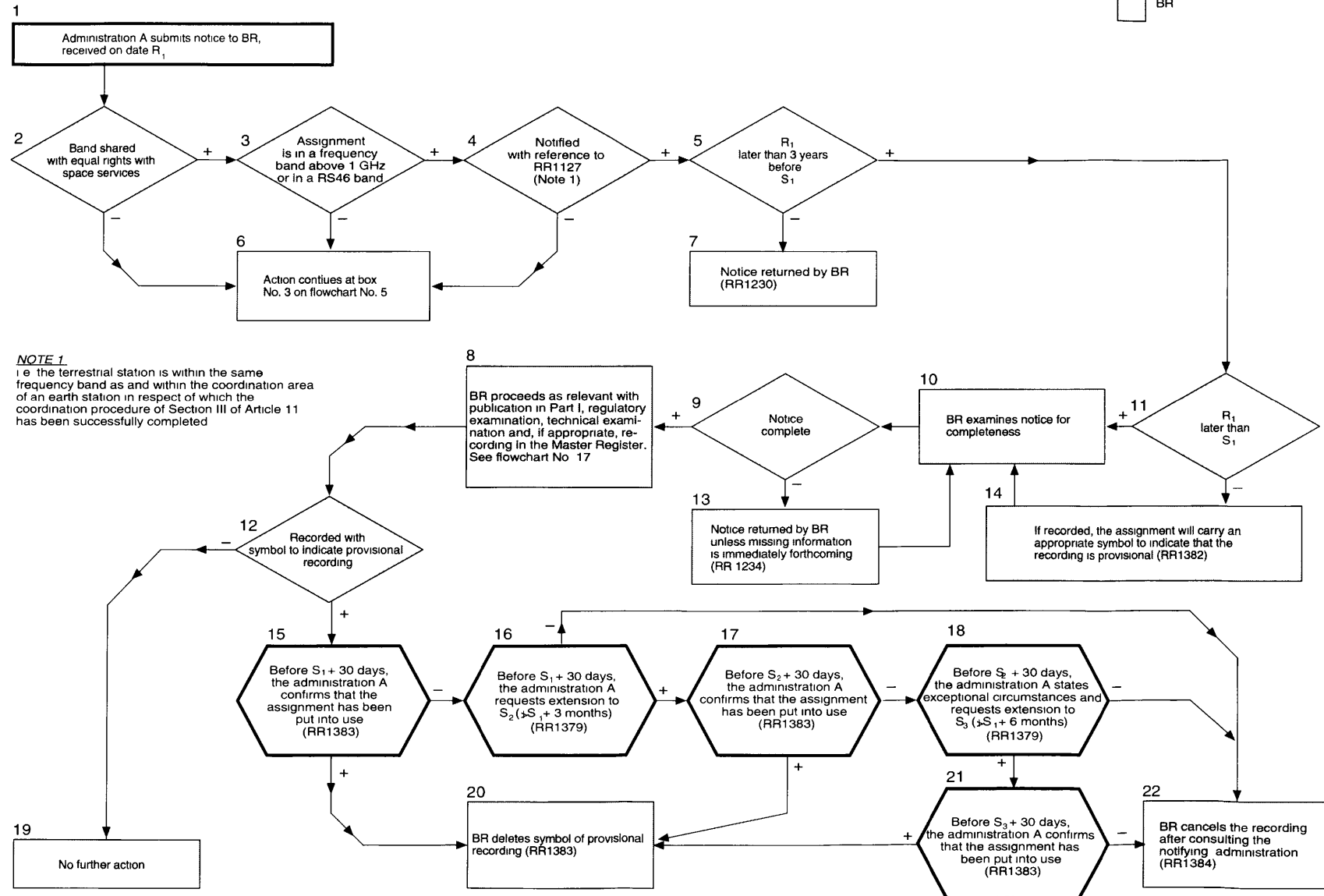
S_1 = Originally notified date of putting the assignment into use

THIS FLOWCHART IS ISSUED AS AN AID TO UNDERSTANDING AND DOES NOT FORM PART
OF THE RADIO REGULATIONS

Action by



+ = Yes
- = No



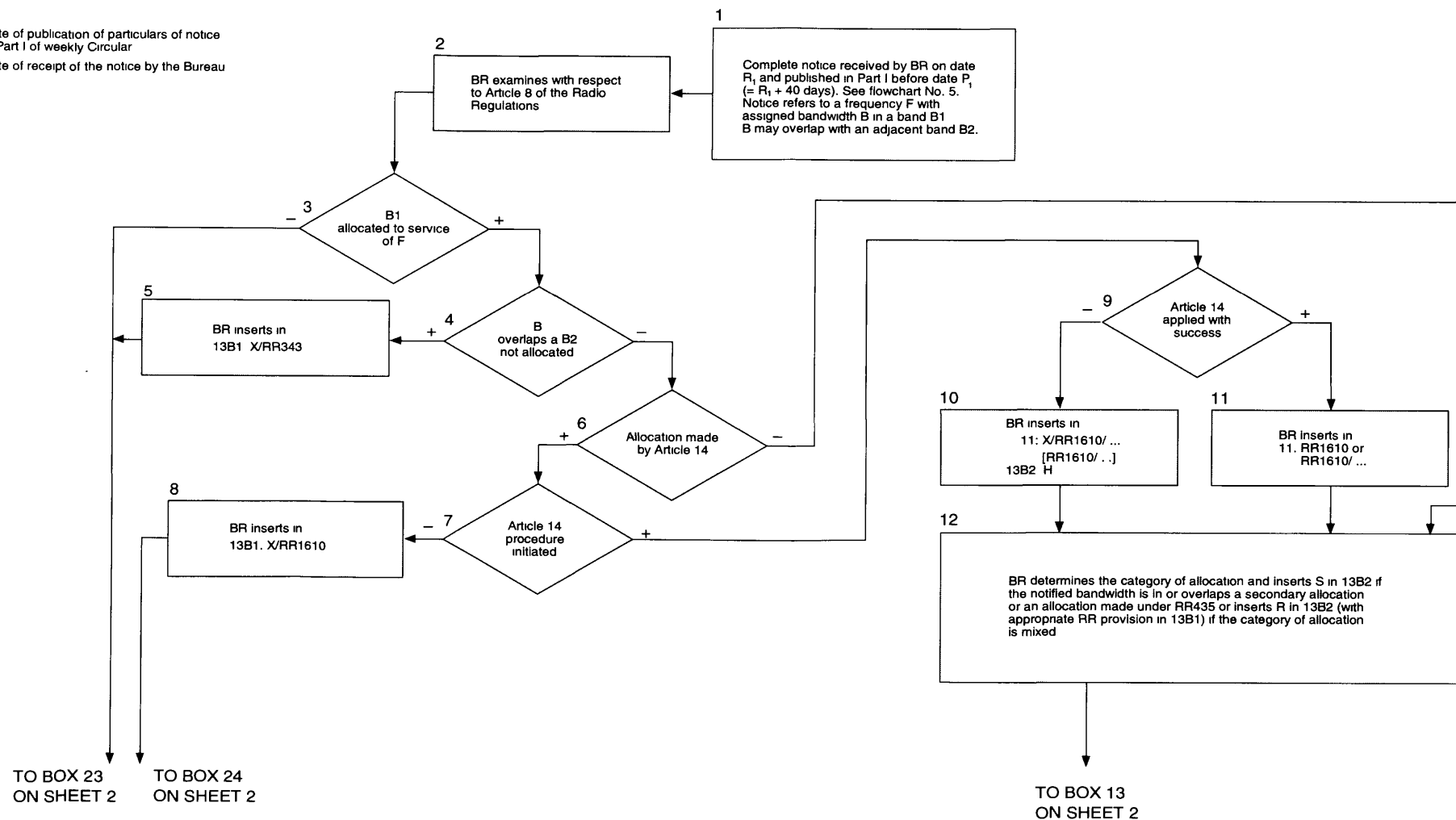
ARTICLES 12 AND 13
REGULATORY EXAMINATION OF NOTICES WITH RESPECT TO RR1240, RR1352 OR RR1503

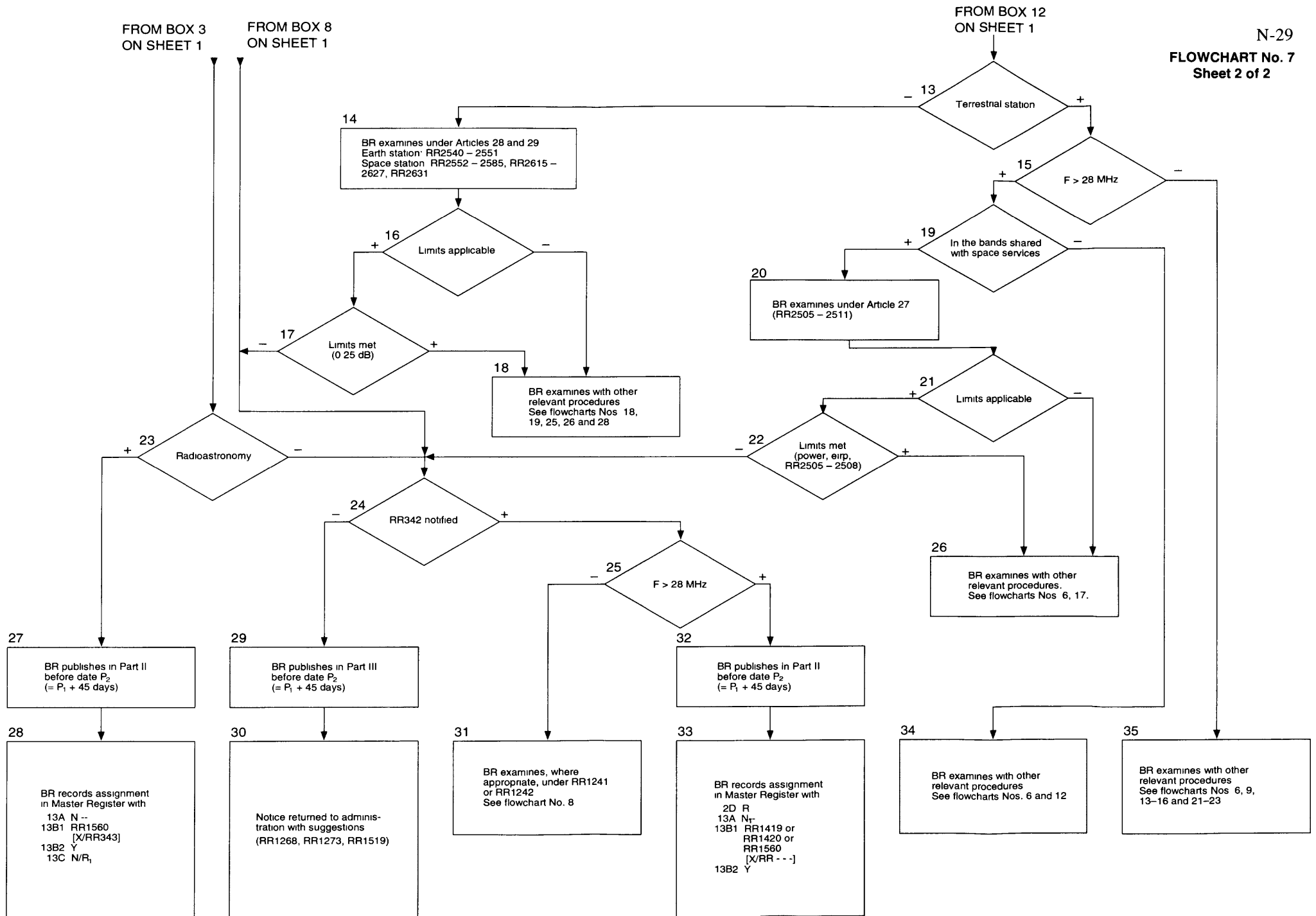
Action by: ☐ BR

P_1 = Date of publication of particulars of notice
in Part I of weekly Circular

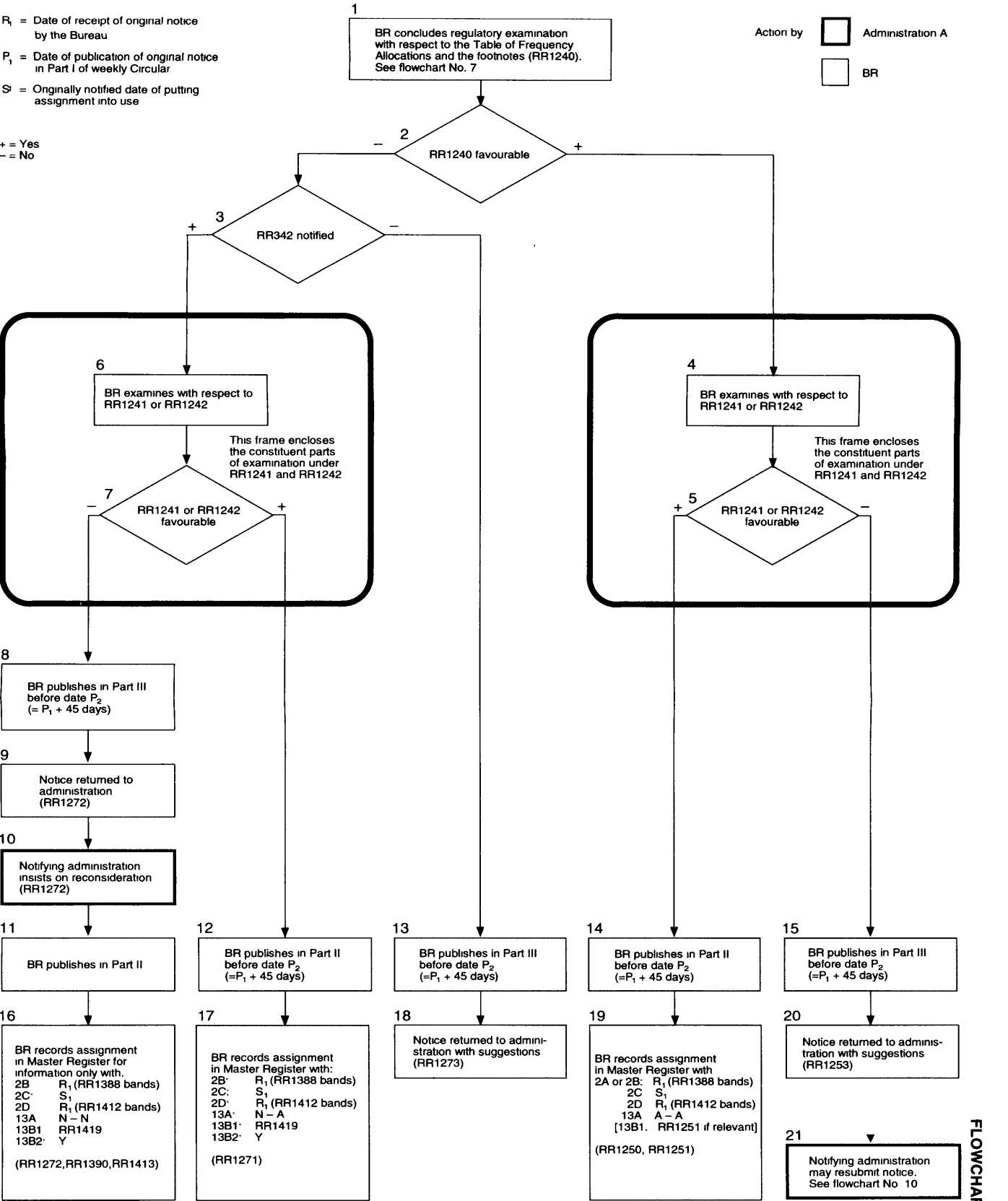
R_1 = Date of receipt of the notice by the Bureau

+ = Yes
- = No





PROCEDURE RELATING TO TECHNICAL EXAMINATION OF FREQUENCY ASSIGNMENT NOTICES
IN BANDS BELOW 28 MHZ OTHER THAN EXCLUSIVE BANDS (RR1241 OR RR1242)



PROCEDURES RELEVANT TO EXAMINATION OF FREQUENCY ASSIGNMENT NOTICES
CONCERNING STATIONS IN THE BROADCASTING SERVICE IN BANDS BELOW 5 950 kHz TO WHICH
ARTICLE 12 OF THE RADIO REGULATIONS APPLIES

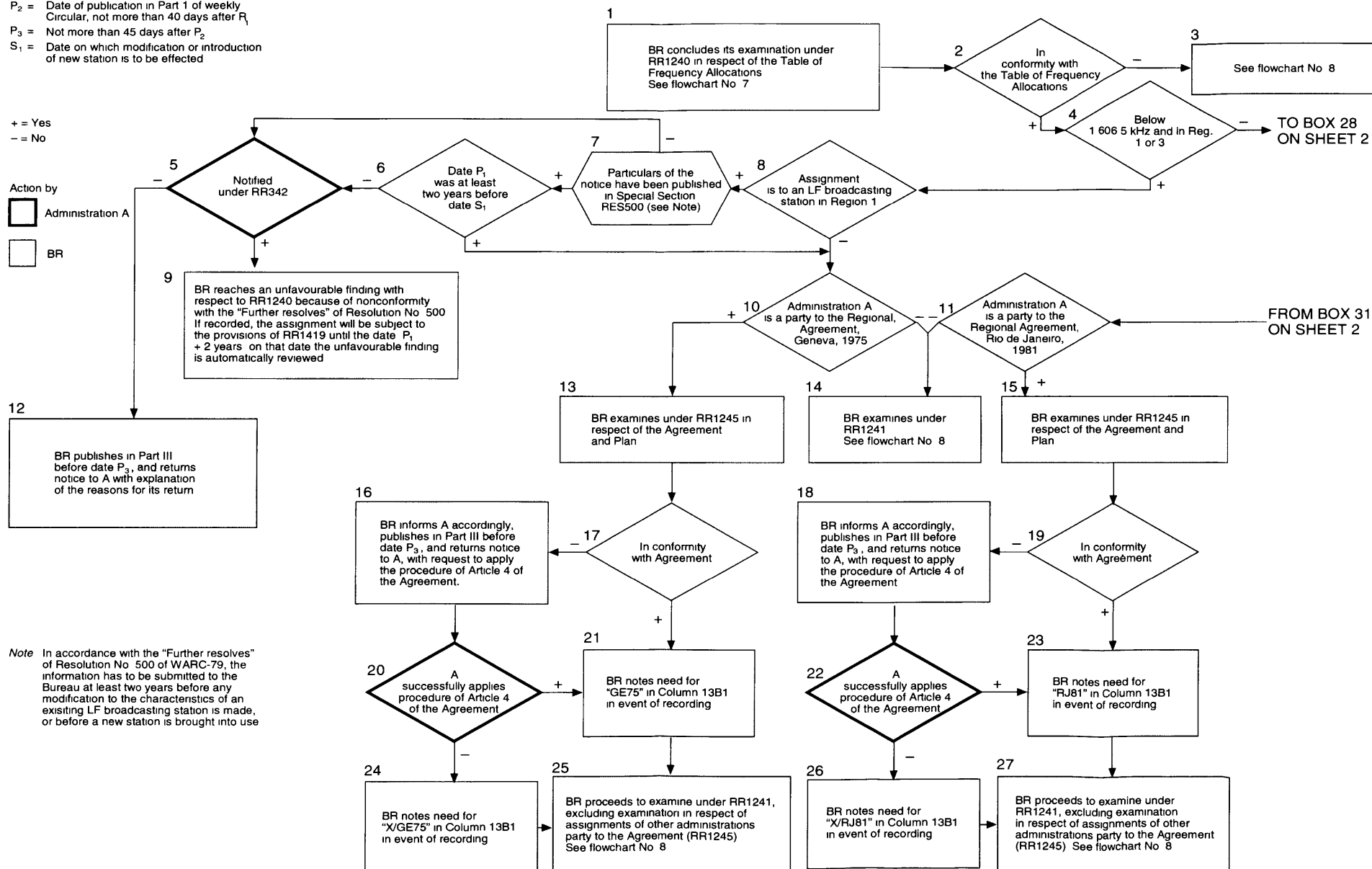
R₁ = Date of receipt of notice by BR
P₁ = Date of reception of the information published
in Special Section RES500 of weekly Circular
P₂ = Date of publication in Part 1 of weekly
Circular, not more than 40 days after R₁
P₃ = Not more than 45 days after P₂
S₁ = Date on which modification or introduction
of new station is to be effected

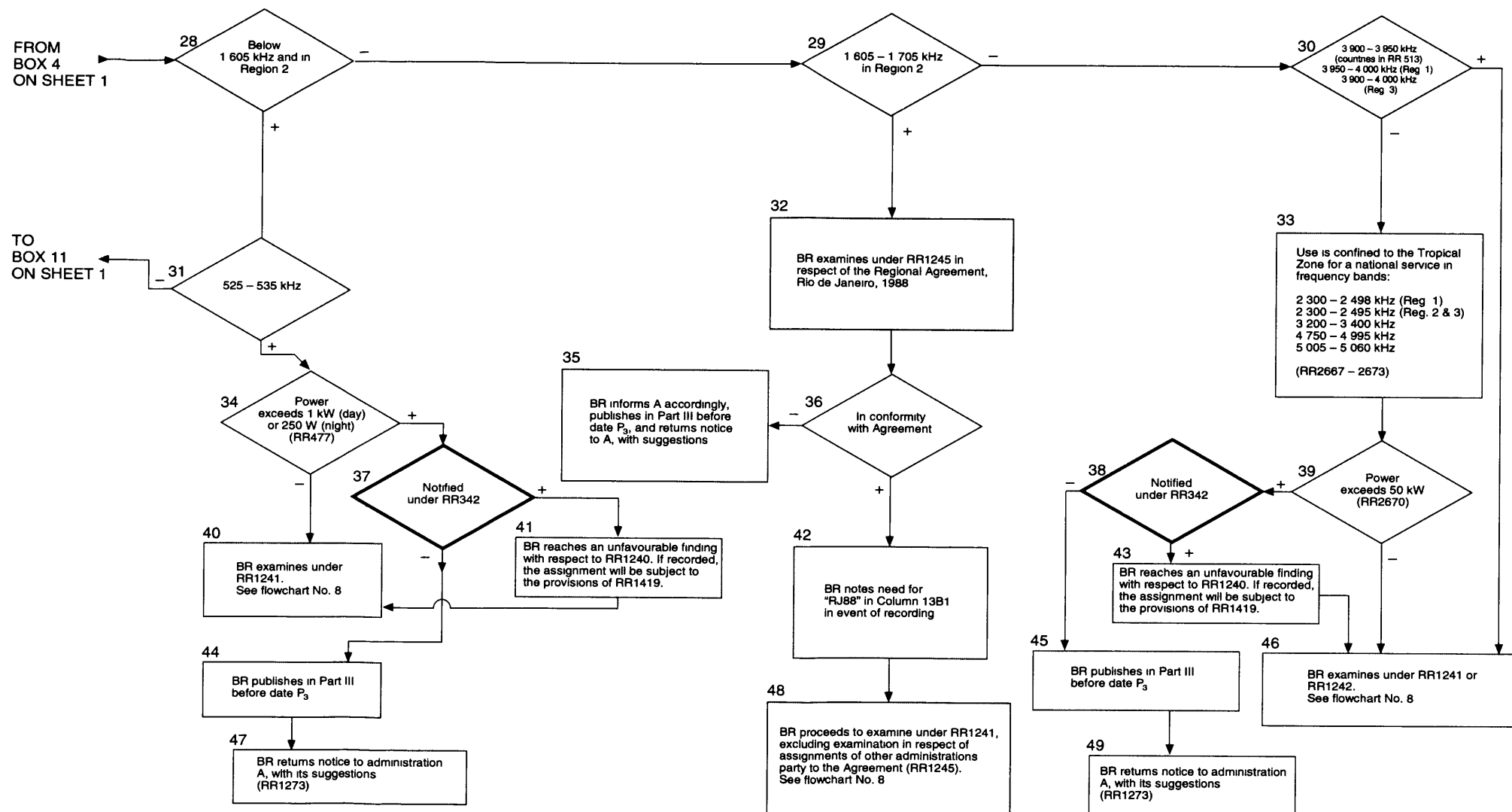
+ = Yes
- = No

Action by

☐ Administration A

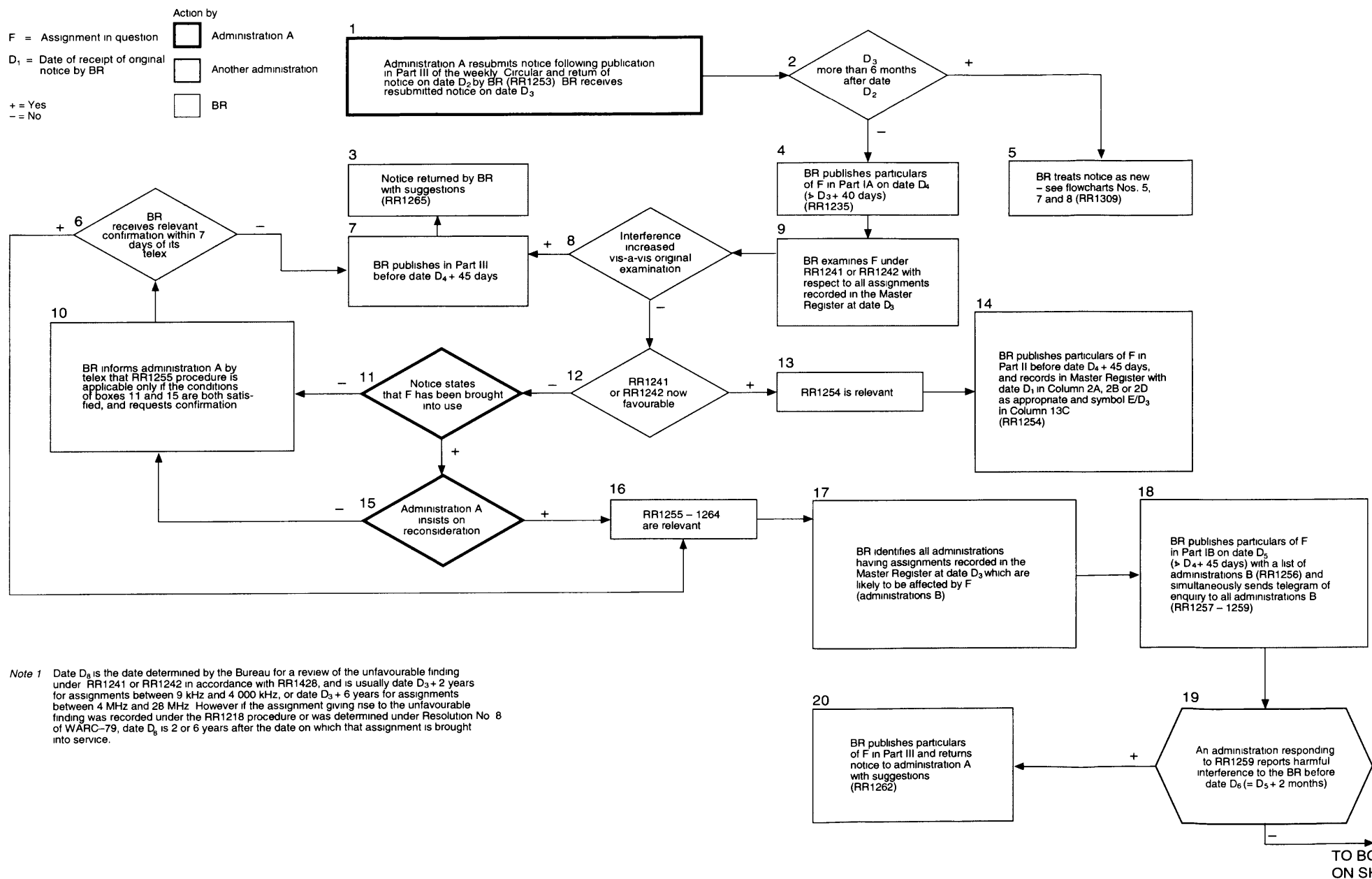
☐ BR

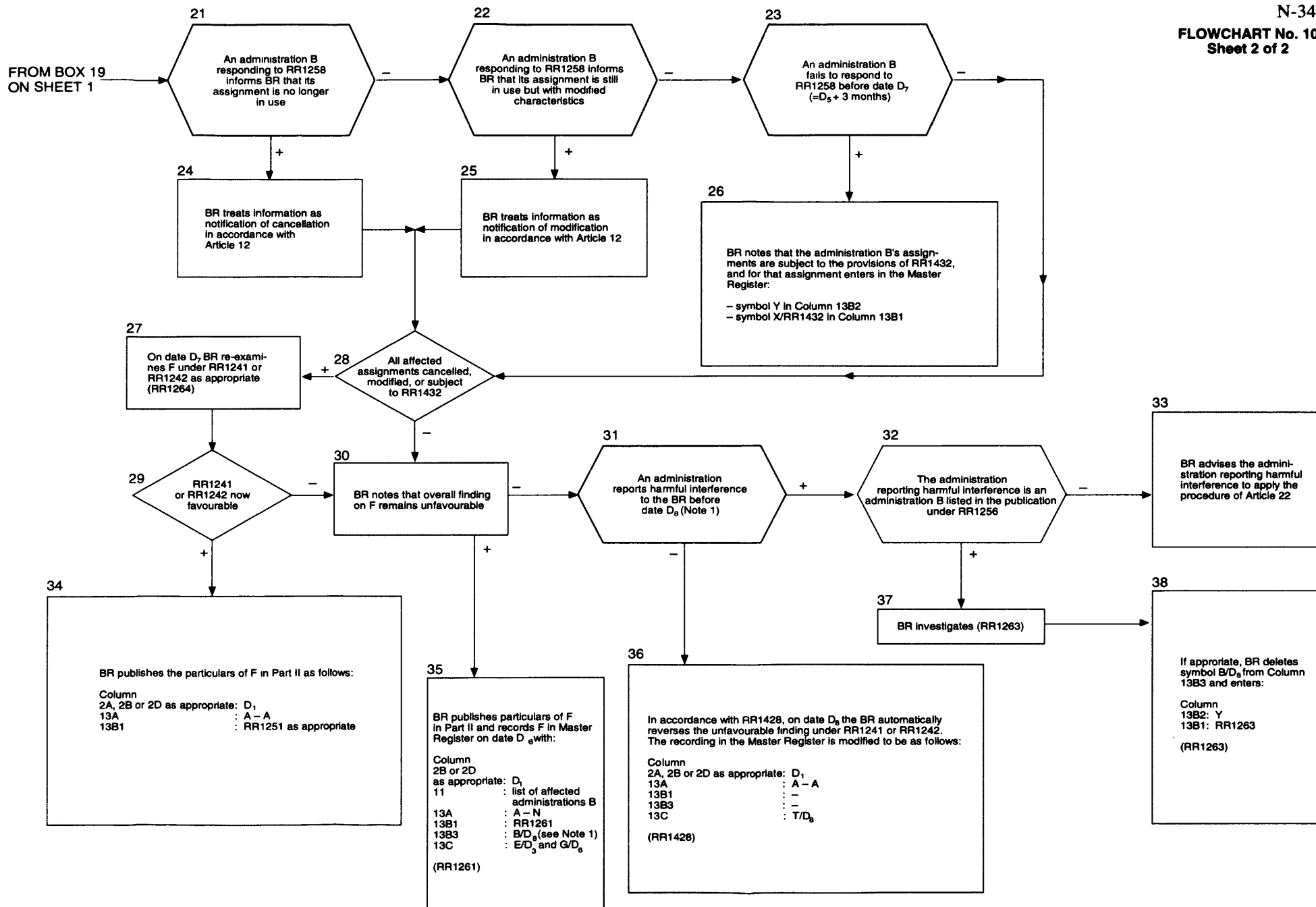




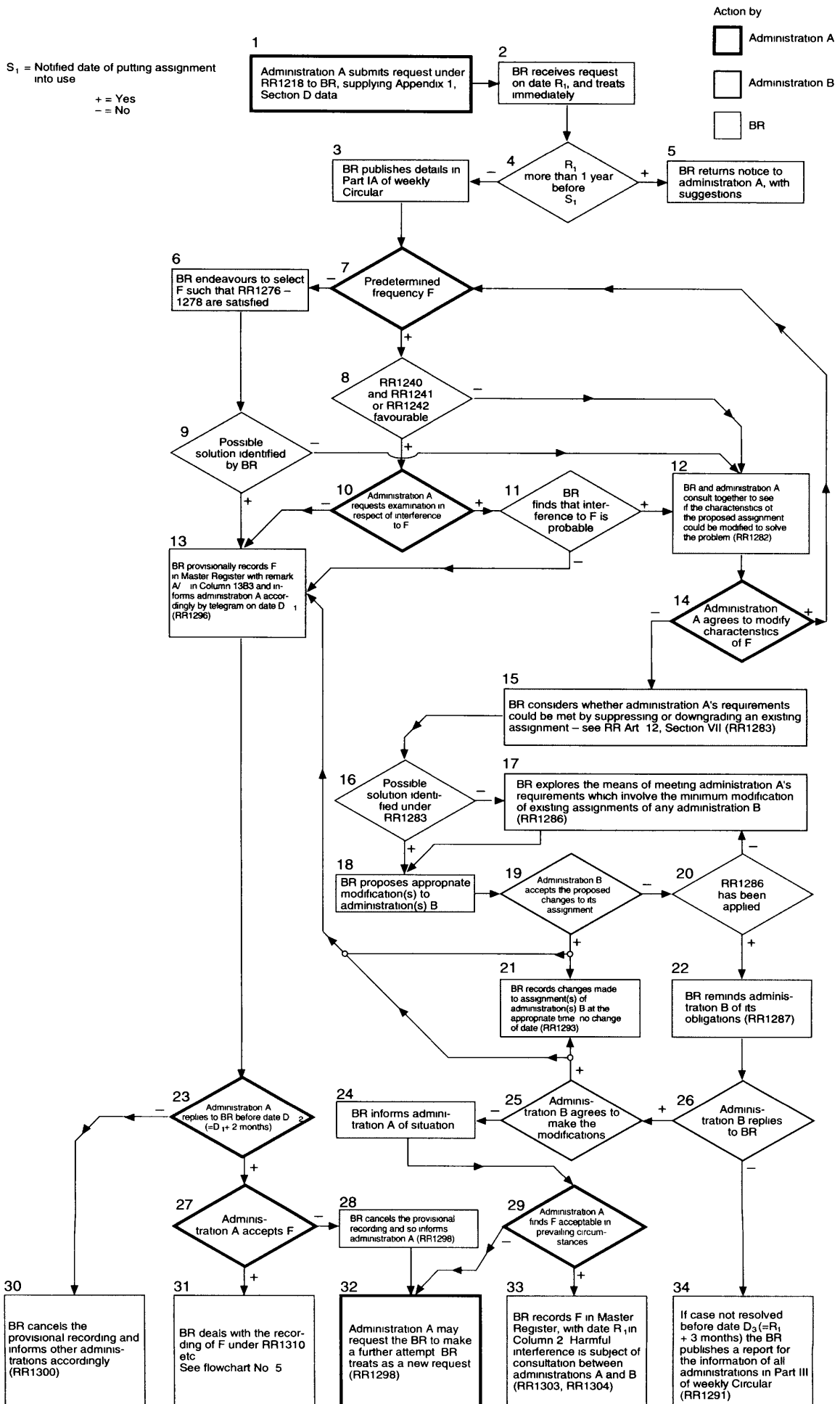
PROCEDURE RELATING TO RESUBMITTED NOTICES (RR1254 – 1265)

FLOWCHART No. 10
Sheet 1 of 2





PROCEDURE UNDER RR1218 FOR THE FIXED SERVICE IN BANDS BETWEEN 3 AND 27.5 MHz



- N B 1) The BR consults with administration A when appropriate as to the acceptability of F (RR1292)
 2) Administrations are urged to afford all possible assistance through their monitoring stations (RR1294)
 3) The provisions of RR1438 - 1450 and RR1964 - 1966 are relevant to this procedure

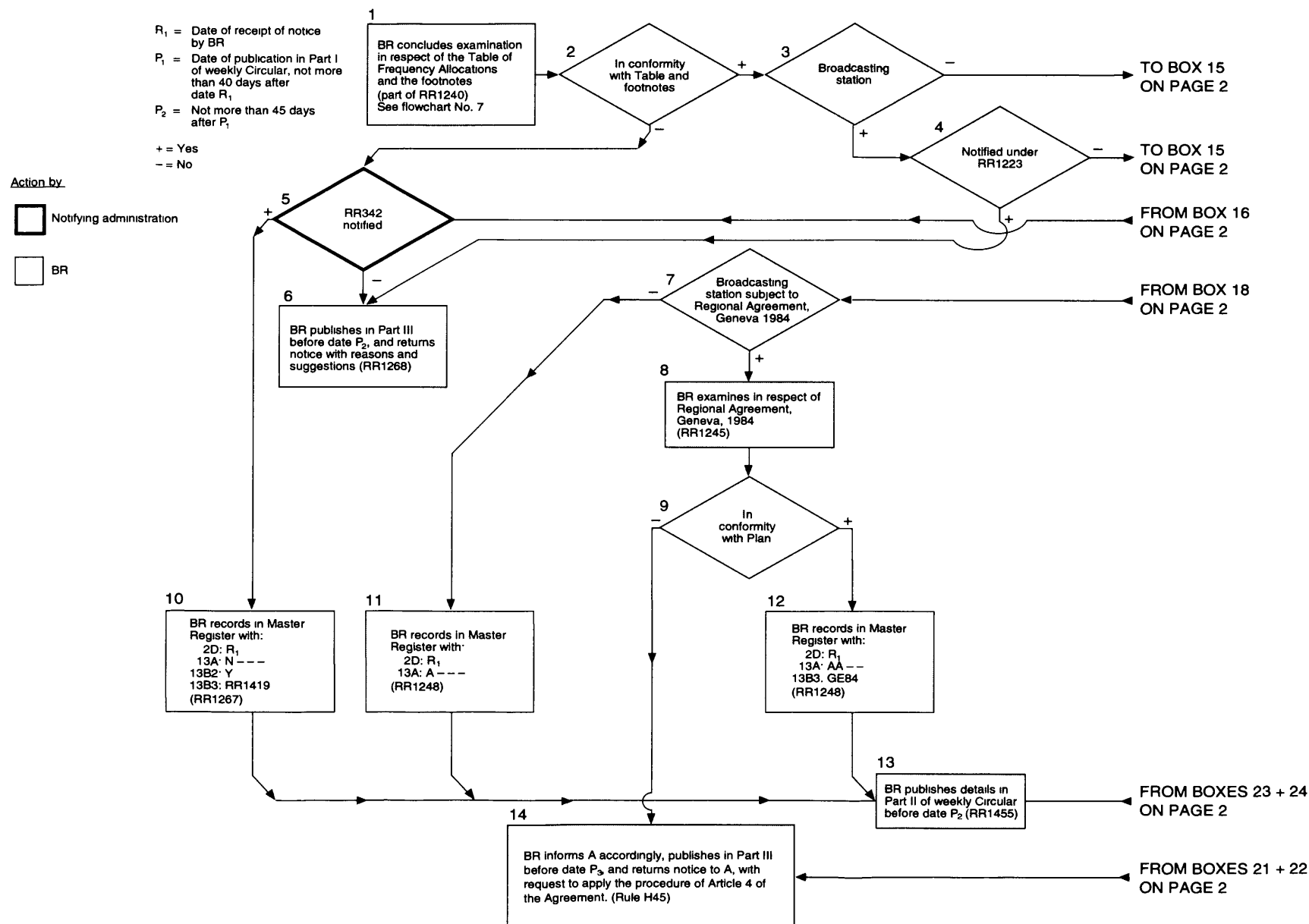
PROCEDURES RELATING TO EXAMINATION AND RECORDING OF ASSIGNMENTS TO
TERRESTRIAL SERVICES OPERATING IN BANDS ABOVE 28 MHz WHICH ARE NOT SHARED
WITH EQUAL RIGHTS WITH SPACE SERVICES

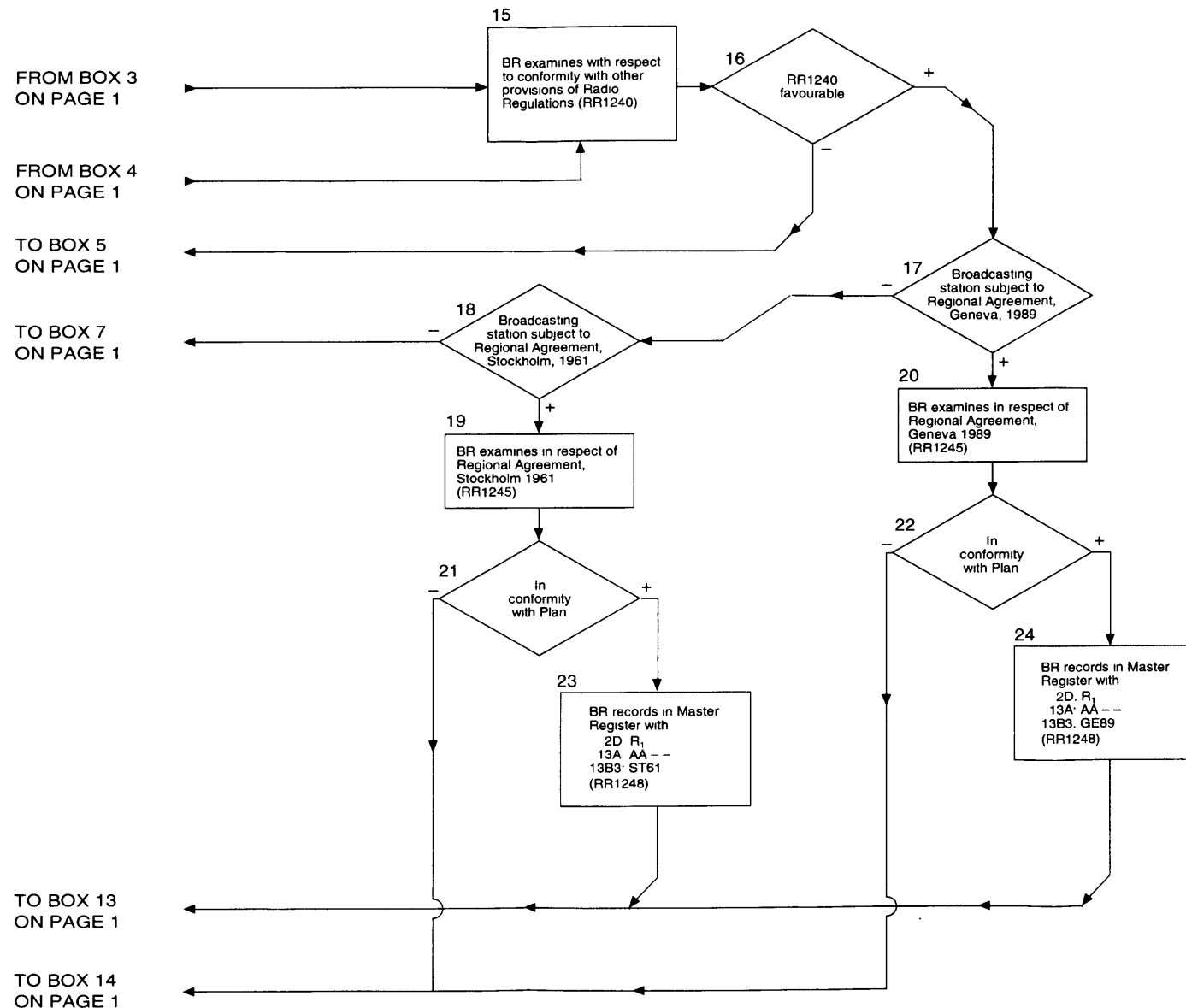
N-36

FLOWCHART No. 12

Page 1 of 2

THIS FLOWCHART IS ISSUED AS AN AID TO UNDERSTANDING AND DOES NOT FORM PART
OF THE RADIO REGULATIONS





PROCEDURE RELATING TO EXAMINATION OF NOTICES OF ASSIGNMENTS TO
TRANSMITTING COAST RADIOTELEPHONE STATIONS IN THE EXCLUSIVE MARITIME
MOBILE BANDS BETWEEN 4 000 AND 27 500 KHZ

P_1 = Date of publication of particulars
of notice in Part I
of weekly Circular

R_1 = Date of receipt of the notice
by the Bureau

+ = Yes

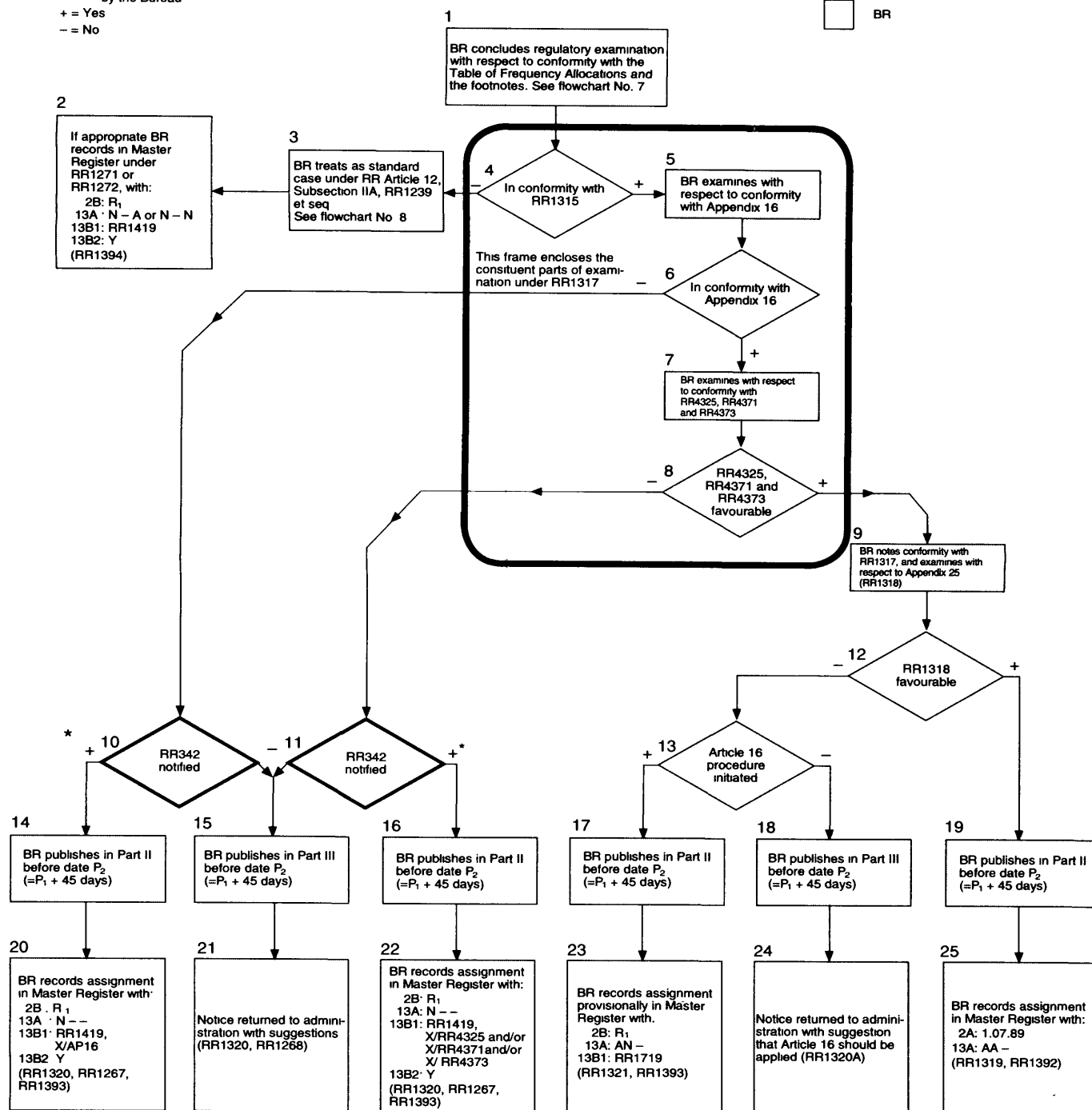
- = No

Action by



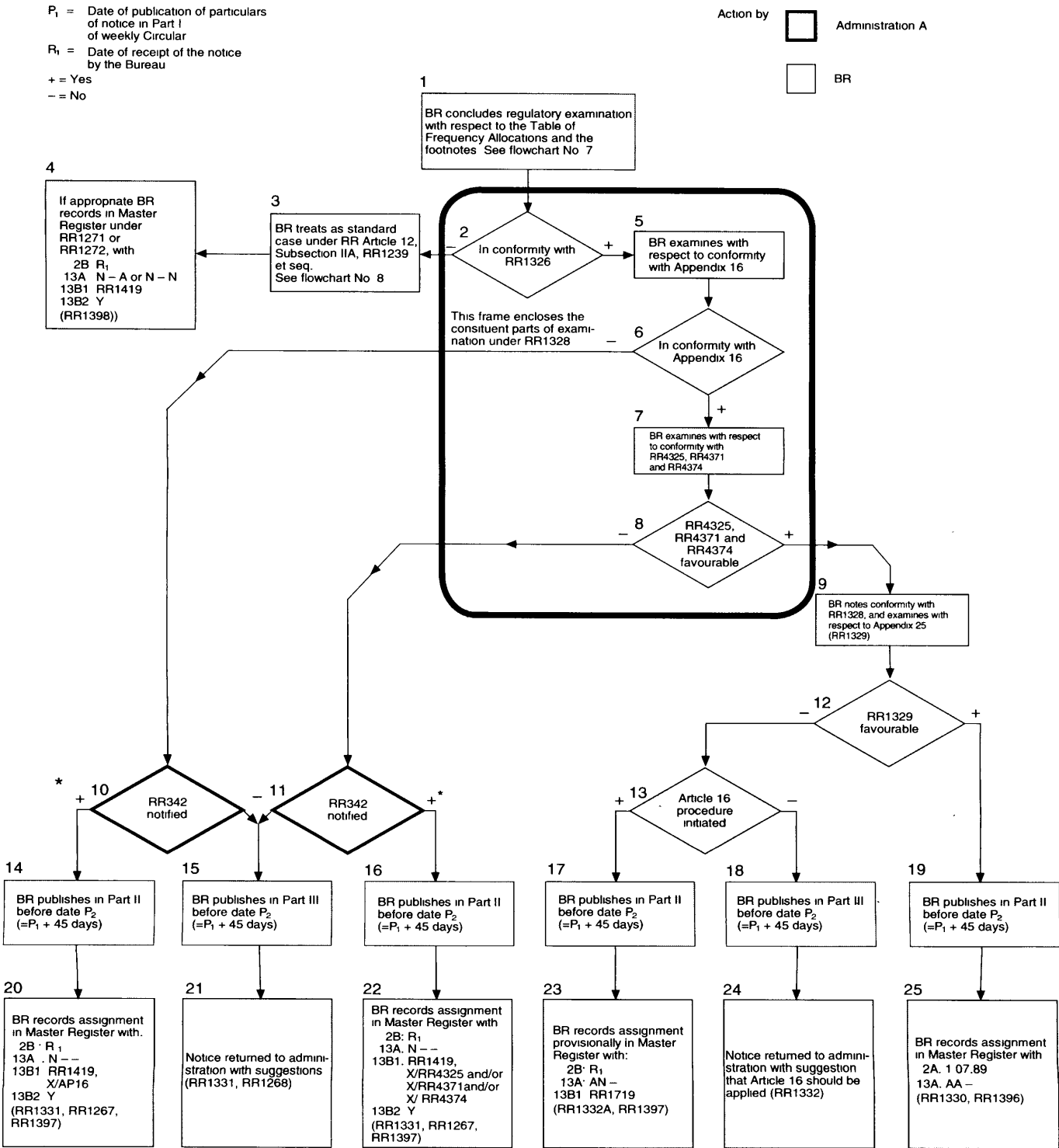
Administration A

BR



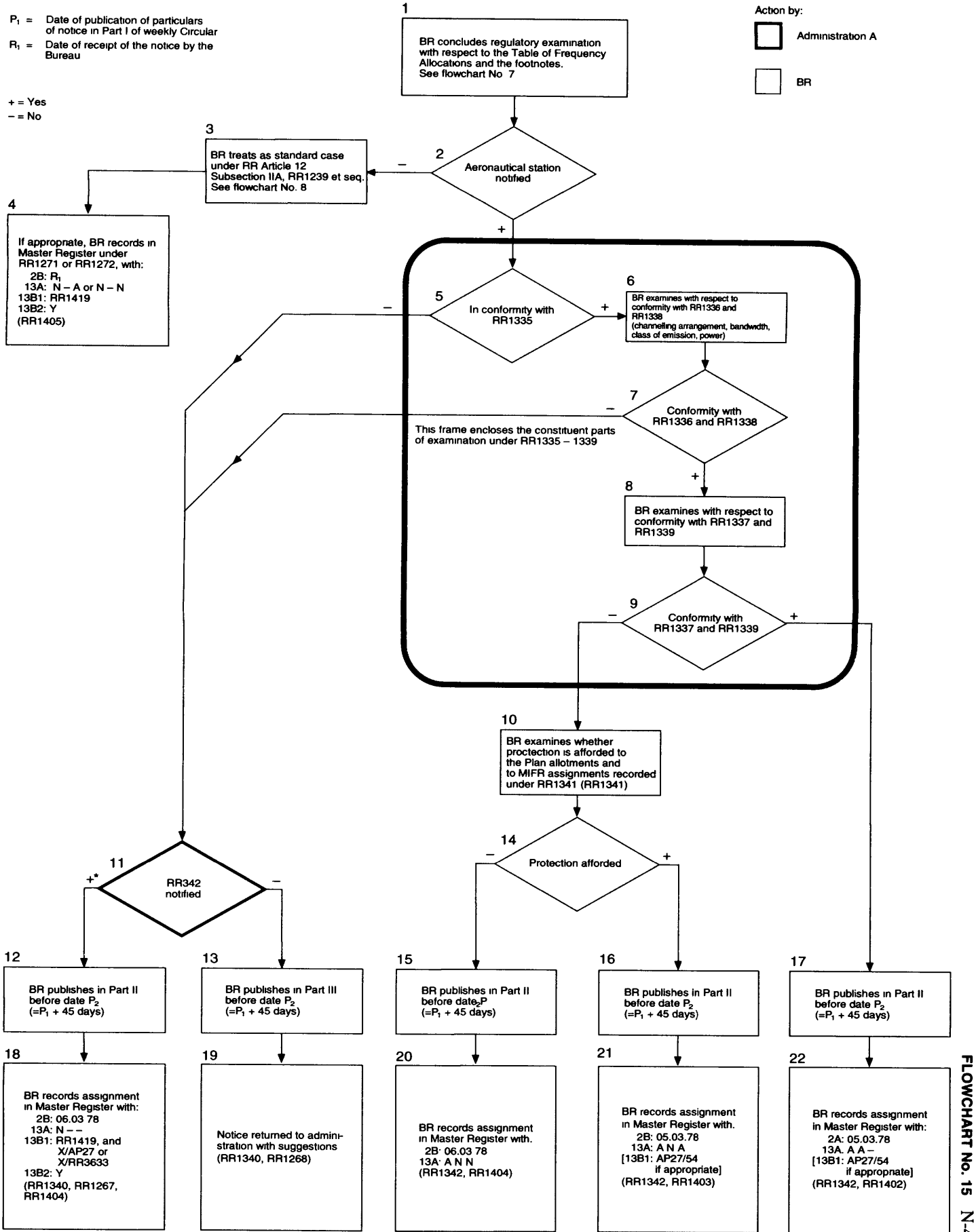
* In this case, the provisions of RR1419 apply (RR1267)

PROCEDURE RELATING TO EXAMINATION OF NOTICES OF ASSIGNMENTS TO
RECEIVING COAST RADIOTELEPHONE STATIONS IN THE EXCLUSIVE MARITIME
MOBILE BANDS BETWEEN 4 000 AND 27 500 KHZ



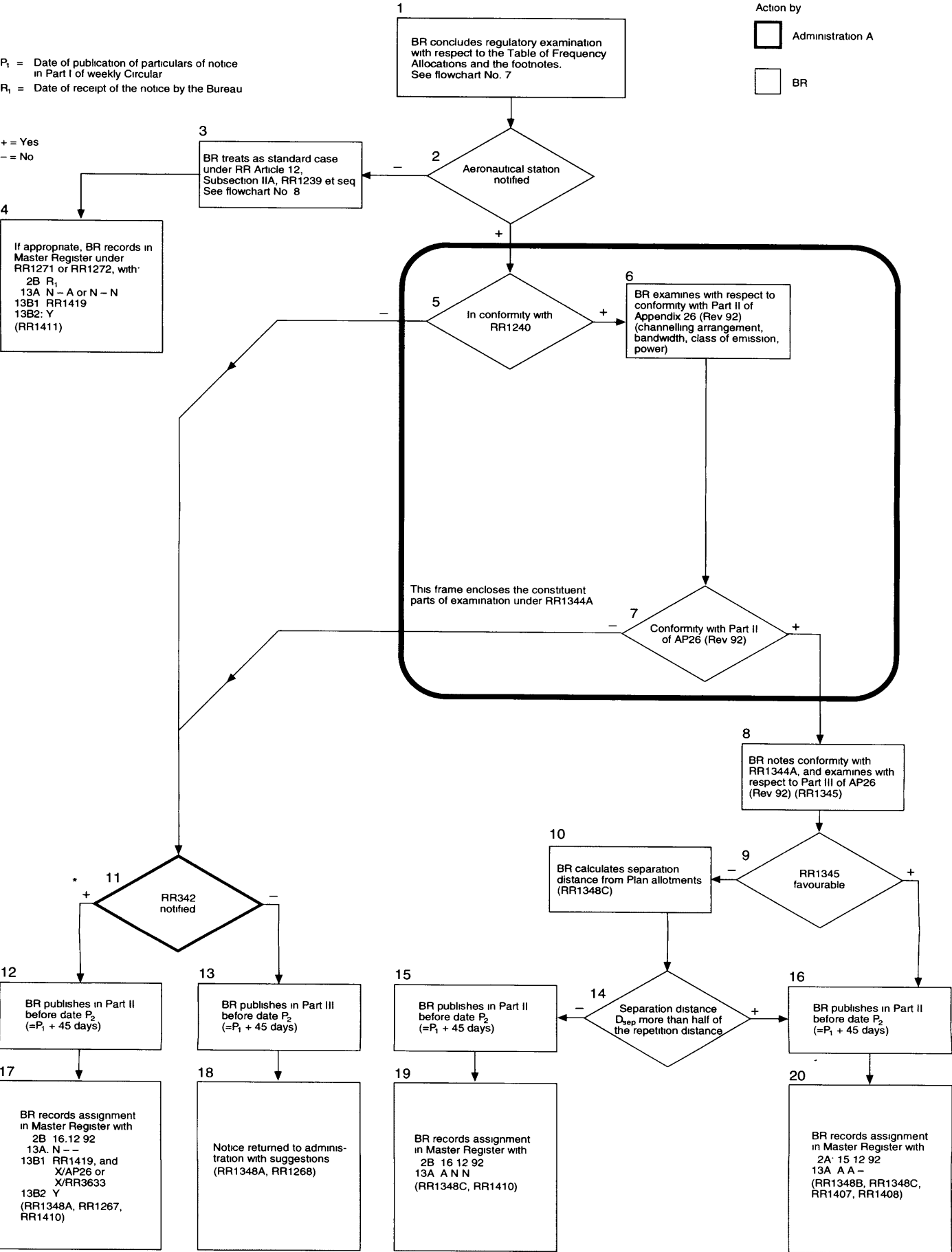
* In this case, the provisions of RR1419 apply (RR1267)

PROCEDURE RELATING TO EXAMINATION OF NOTICES OF FREQUENCY ASSIGNMENTS
IN THE EXCLUSIVE AERONAUTICAL MOBILE (R) BANDS BETWEEN 2 850 AND 22 000 KHZ



* In this case, the provisions of RR1419 apply (RR1267)

PROCEDURE RELATING TO EXAMINATION OF NOTICES OF FREQUENCY ASSIGNMENTS
IN THE EXCLUSIVE AERONAUTICAL MOBILE (OR) BANDS BETWEEN 3 025 AND 18 030 KHZ



* In this case, the provisions of RR1419 apply (RR1267)

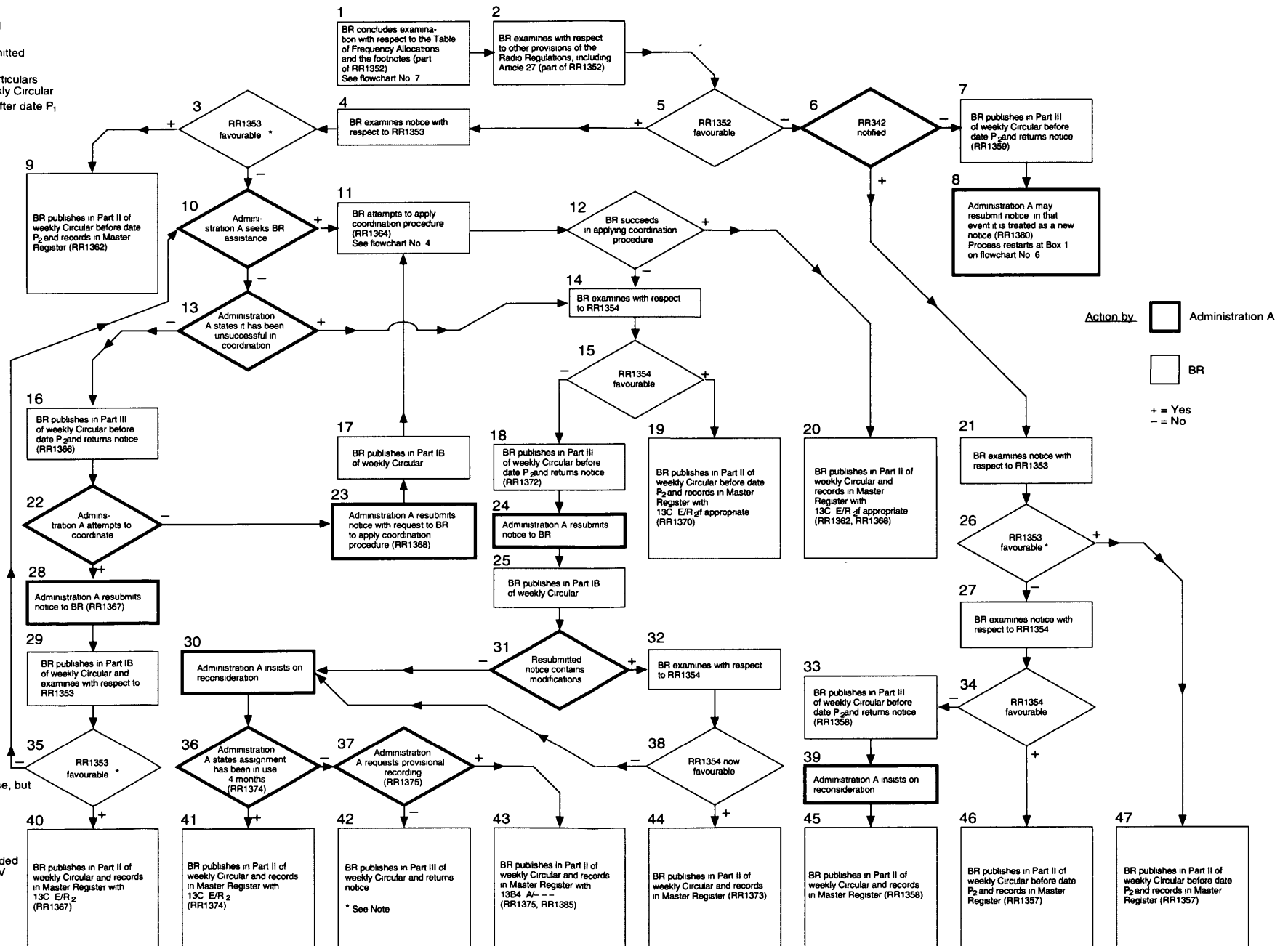
PROCEDURES RELATING TO EXAMINATION AND RECORDING OF ASSIGNMENTS TO TERRESTRIAL STATIONS WHICH ARE IN THE SAME FREQUENCY BAND AS, AND WITHIN THE COORDINATION AREA OF, AN EXISTING EARTH STATION OR ONE FOR WHICH COORDINATION HAS BEEN SUCCESSFULLY COMPLETED OR INITIATED

N-42

FLOWCHART No. 17

THIS FLOWCHART IS ISSUED AS AN AID TO UNDERSTANDING AND DOES NOT FORM PART OF THE RADIO REGULATIONS

Date R_1 = Date of receipt of original notice by BR.
Date R_2 = Date of receipt of resubmitted notice by BR.
Date P_1 = Date of publication of particulars of notice in Part I of weekly Circular
Date P_2 = Not more than 40 days after date P_1

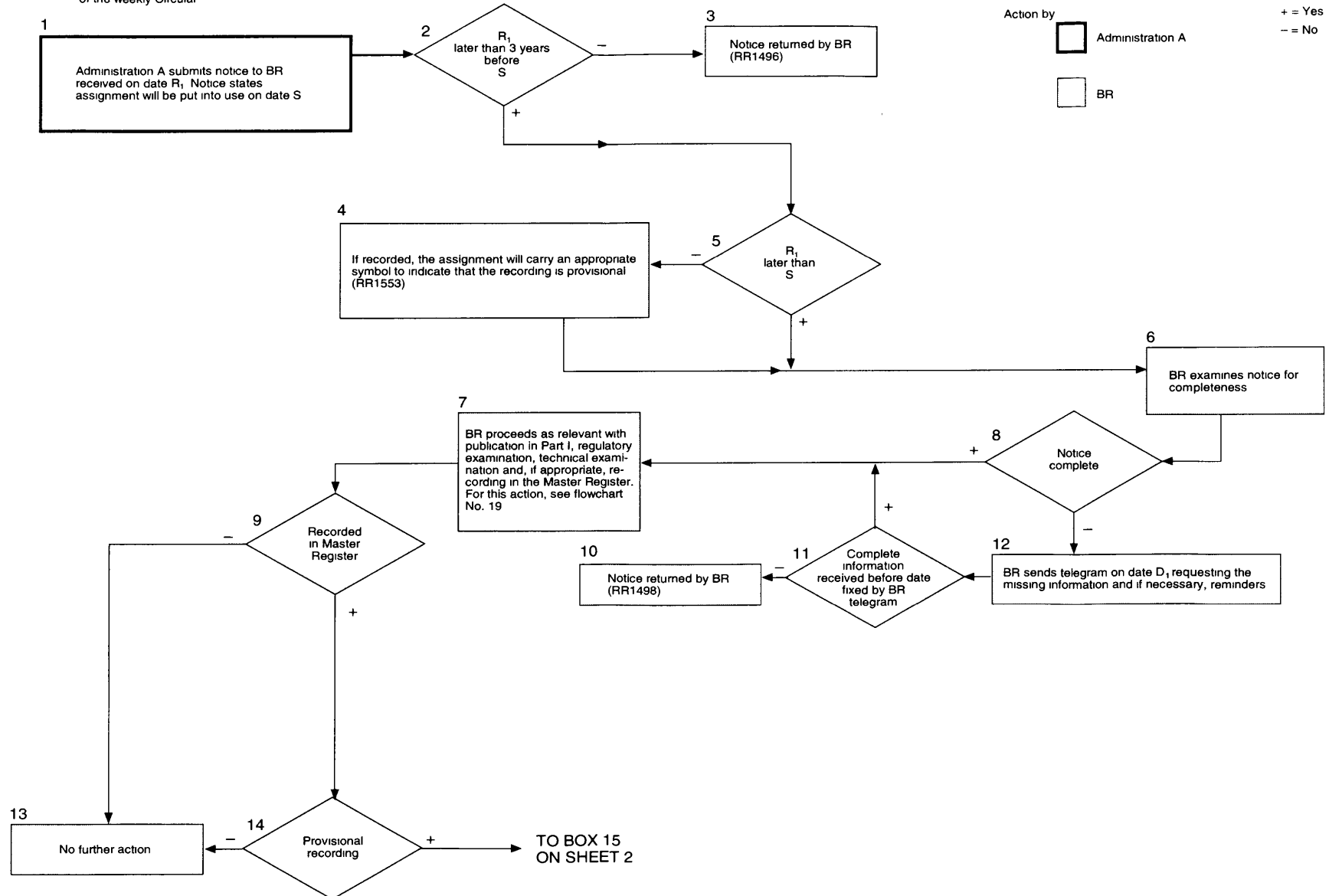


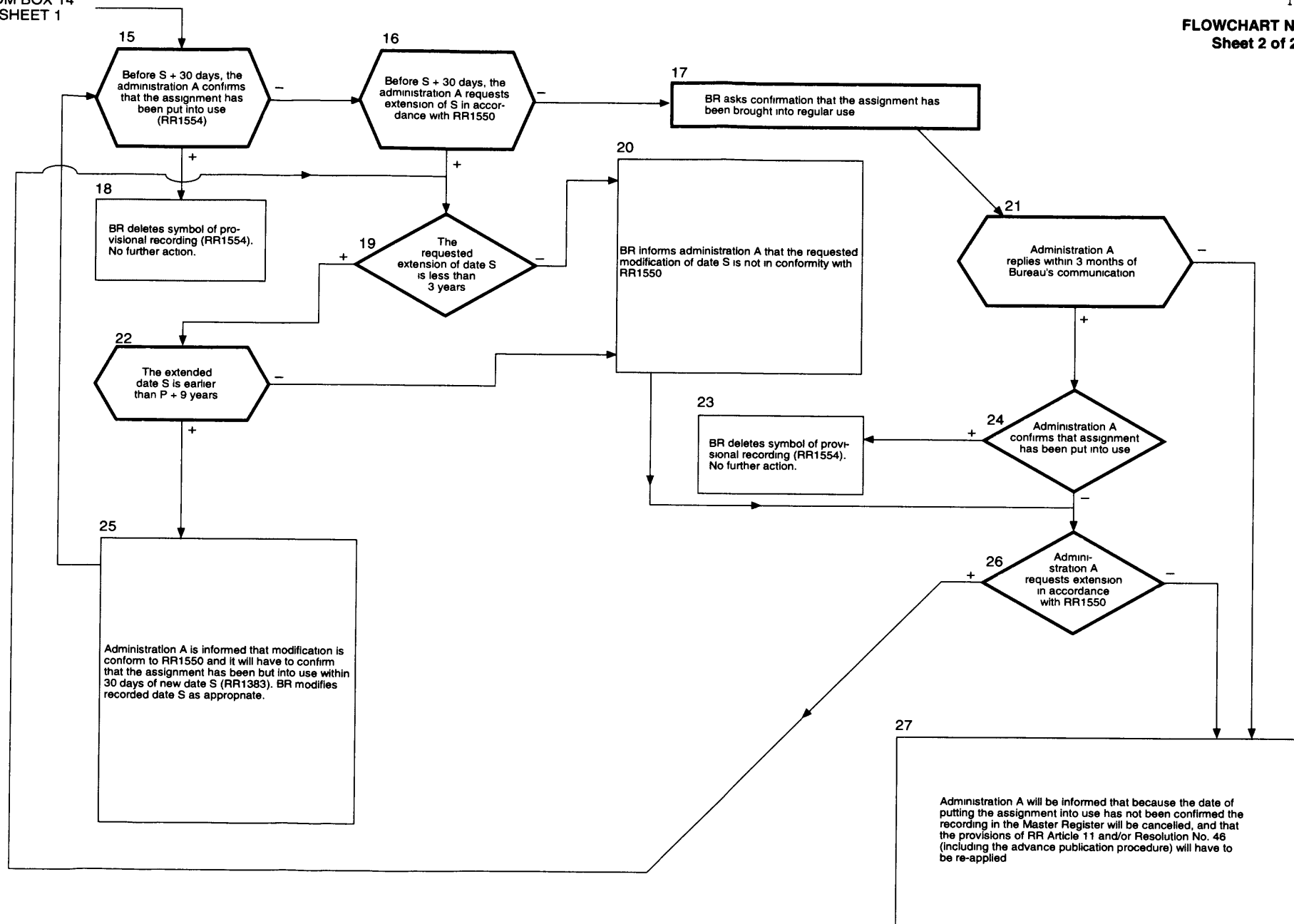
DATE OF SUBMISSION
OF A NOTICE VIS-A-VIS DATE OF PUTTING THE ASSIGNMENT TO USE
(Space services, space or earth stations)

N-43
FLOWCHART No. 10
Sheet 1 of 2

THIS FLOWCHART IS ISSUED AS AN AID TO UNDERSTANDING AND DOES NOT FORM PART
OF THE RADIO REGULATIONS

R₁ = Date of receipt of original notice
by BR
P = Date of receipt of the information
published in a Special Section AR11/A
of the weekly Circular





PROCEDURE OF EXAMINATION AND REGISTRATION OF
ASSIGNMENTS TO STATIONS IN SPACE SERVICES OTHER THAN THE
BROADCASTING-SATELLITE SERVICE AND FEEDER LINK FOR
THE BROADCASTING-SATELLITE SERVICE

THIS FLOWCHART IS ISSUED AS AN AID TO UNDERSTANDING AND DOES
NOT FORM PART OF THE RADIO REGULATIONS

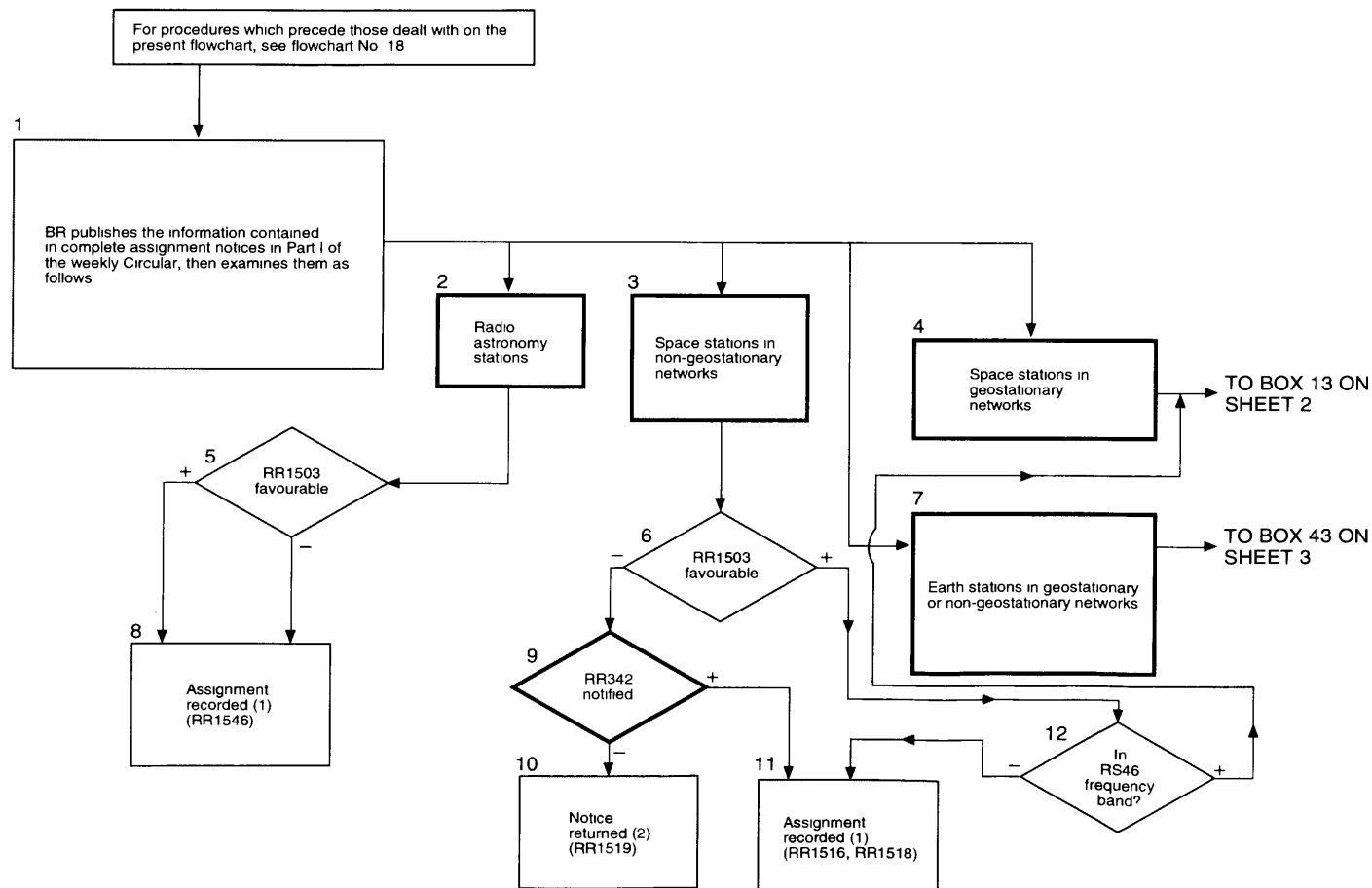
Action by ☐ Administration A

☐ BR

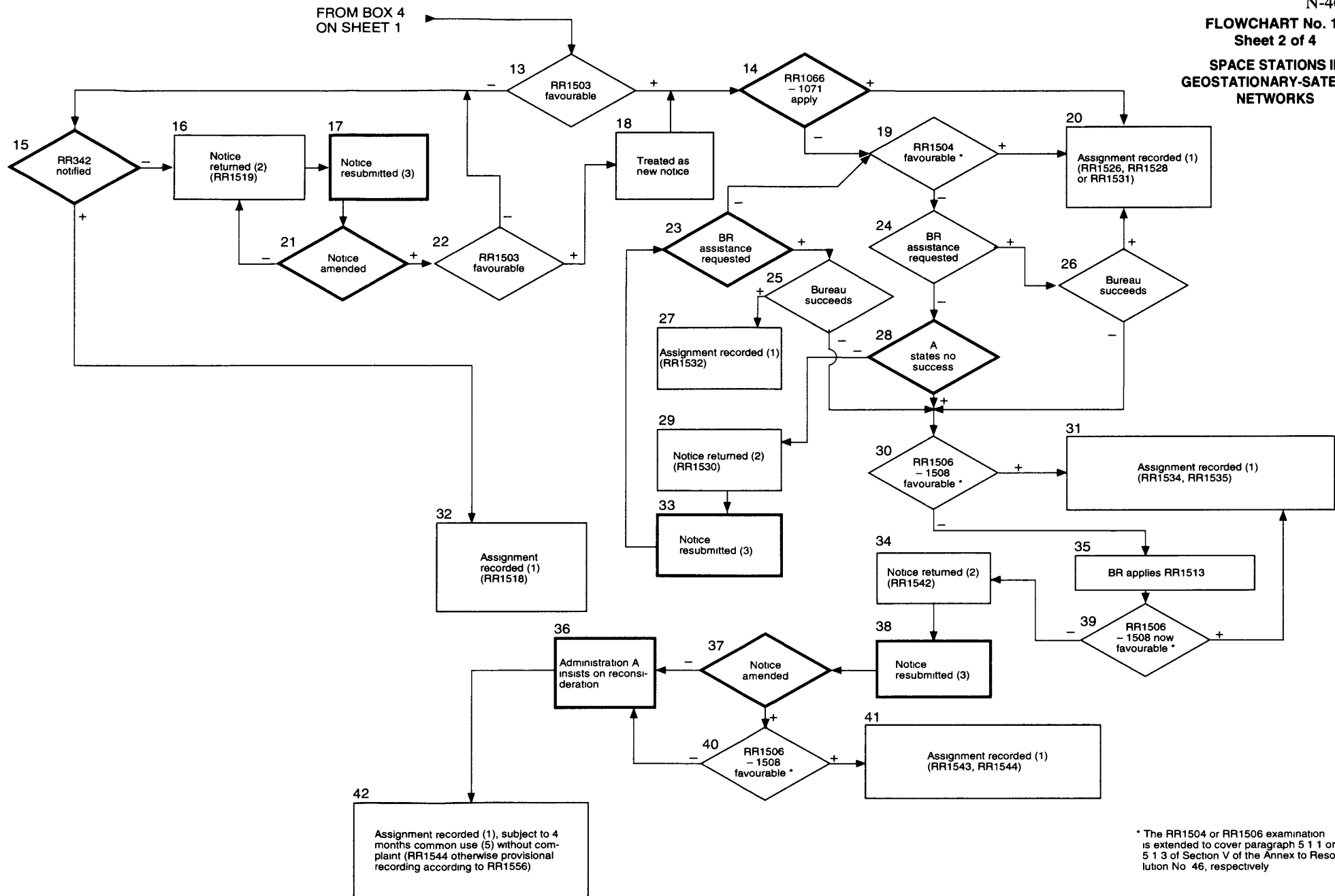
+ = Yes
- = No

NOTES

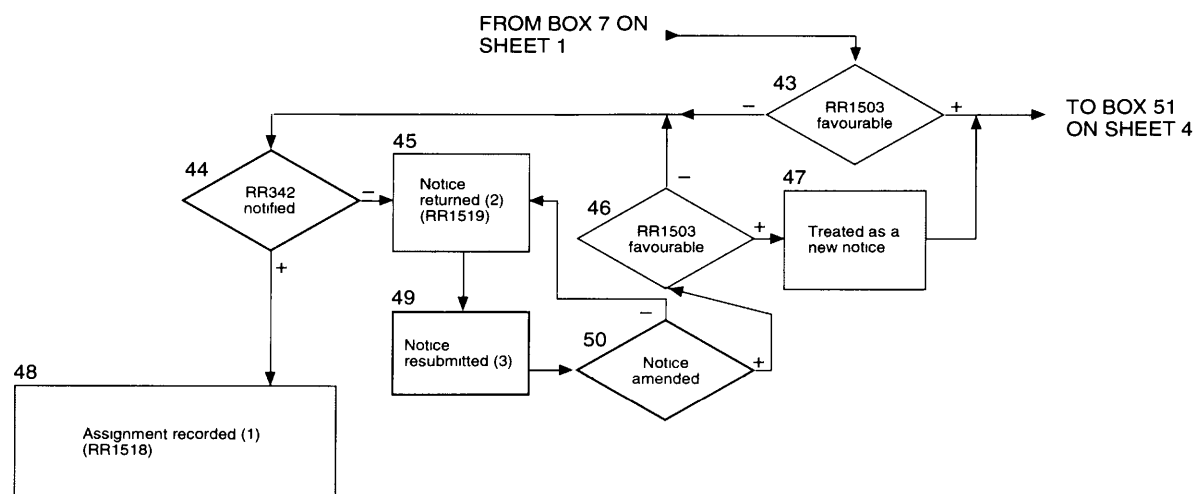
- (1) When an assignment is recorded in the Master Register the particulars are published in Part II of the weekly Circular
- (2) When a notice is returned to the notifying administration the particulars are published in Part III of the weekly Circular
- (3) When a notice is resubmitted to the BR the particulars are published in Part IB of the weekly Circular
- (4) When examinations in respect of RR1504 and RR1505 are both relevant they are carried out at the same time for convenience, they are shown on Sheets 3 and 4 as consecutive examinations
- (5) The space service assignment concerned may be recorded if it and the assignment which gave rise to the unfavourable finding under RR1506 – 1508 or RR1509 – 1512, as relevant, have both been in use for a common 4-month period without complaint of harmful interference (RR1544)



N-46
FLOWCHART No. 19
Sheet 2 of 4
SPACE STATIONS IN
GEOSTATIONARY-SATELLITE
NETWORKS

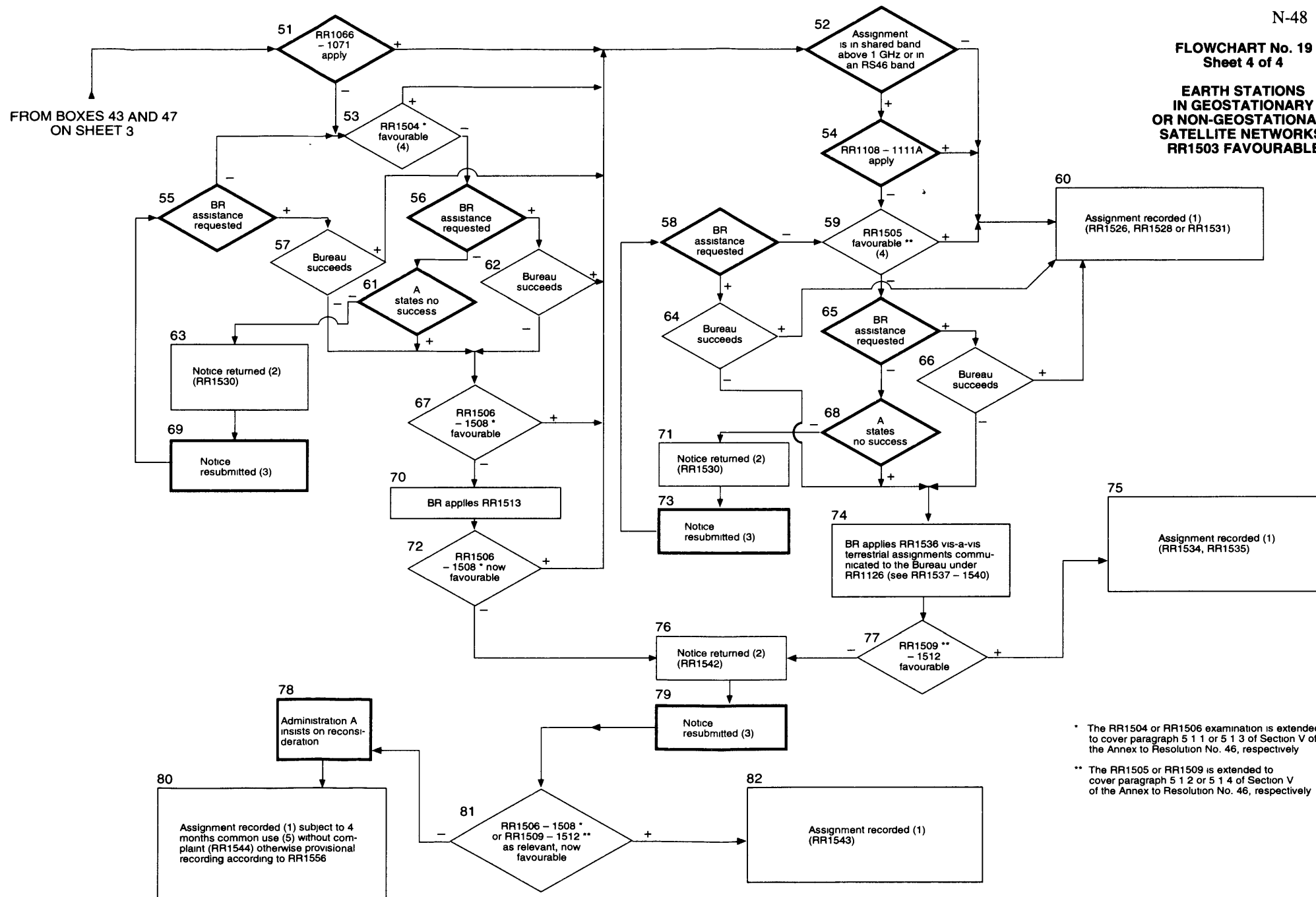


* The RR1504 or RR1506 examination is extended to cover paragraph 5 1 1 or 5 1 3 of Section V of the Annex to Resolution No 46, respectively

FLOWCHART No. 19
Sheet 3 of 4EARTH STATIONS IN
GEOSTATIONARY OR
NON-GEOSTATIONARY
SATELLITE NETWORKS:
RR1503 UNFAVOURABLE

FLOWCHART No. 19
Sheet 4 of 4

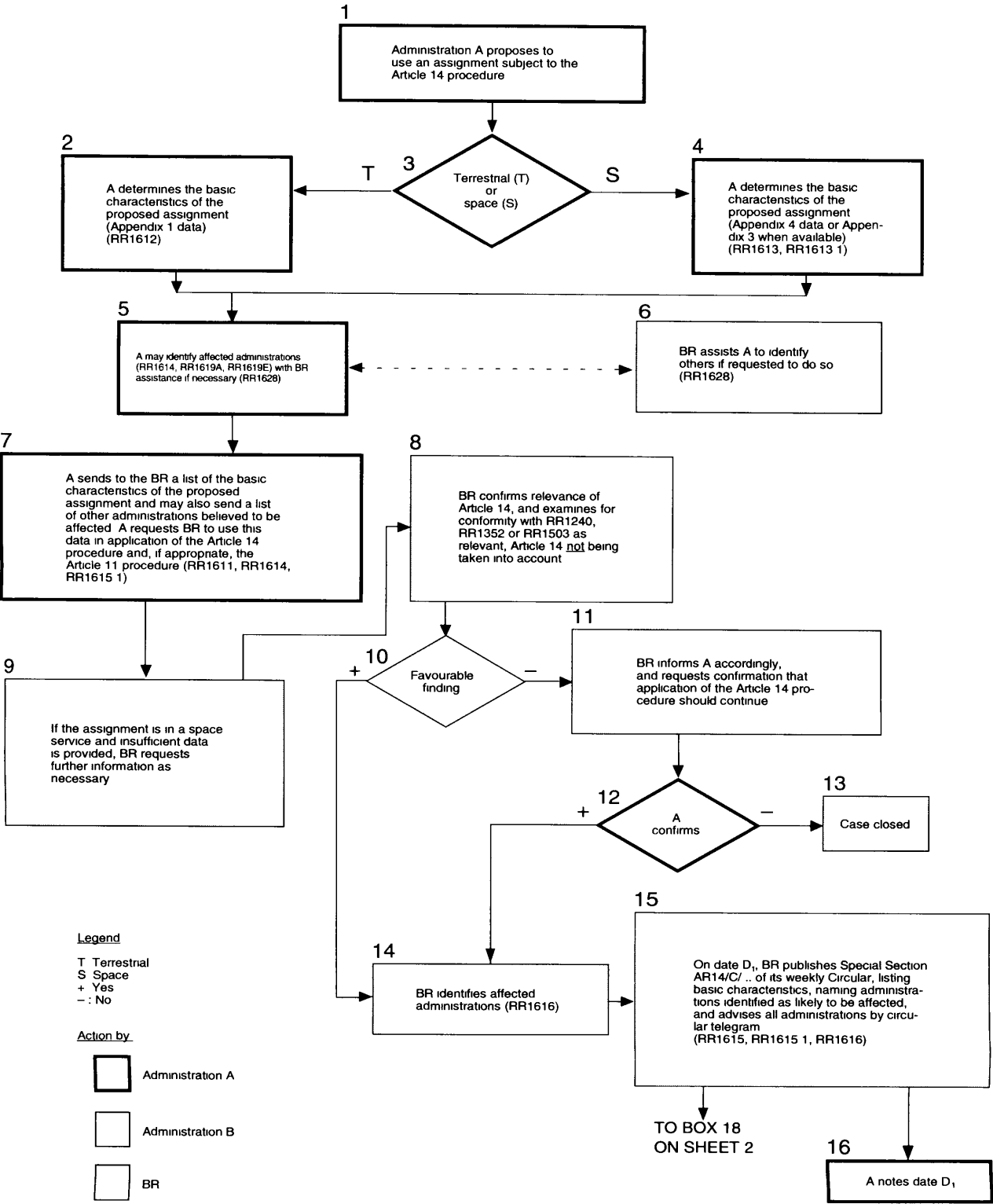
**EARTH STATIONS
 IN GEOSTATIONARY
 OR NON-GEOSTATIONARY
 SATELLITE NETWORKS:
 RR1503 FAVOURABLE**

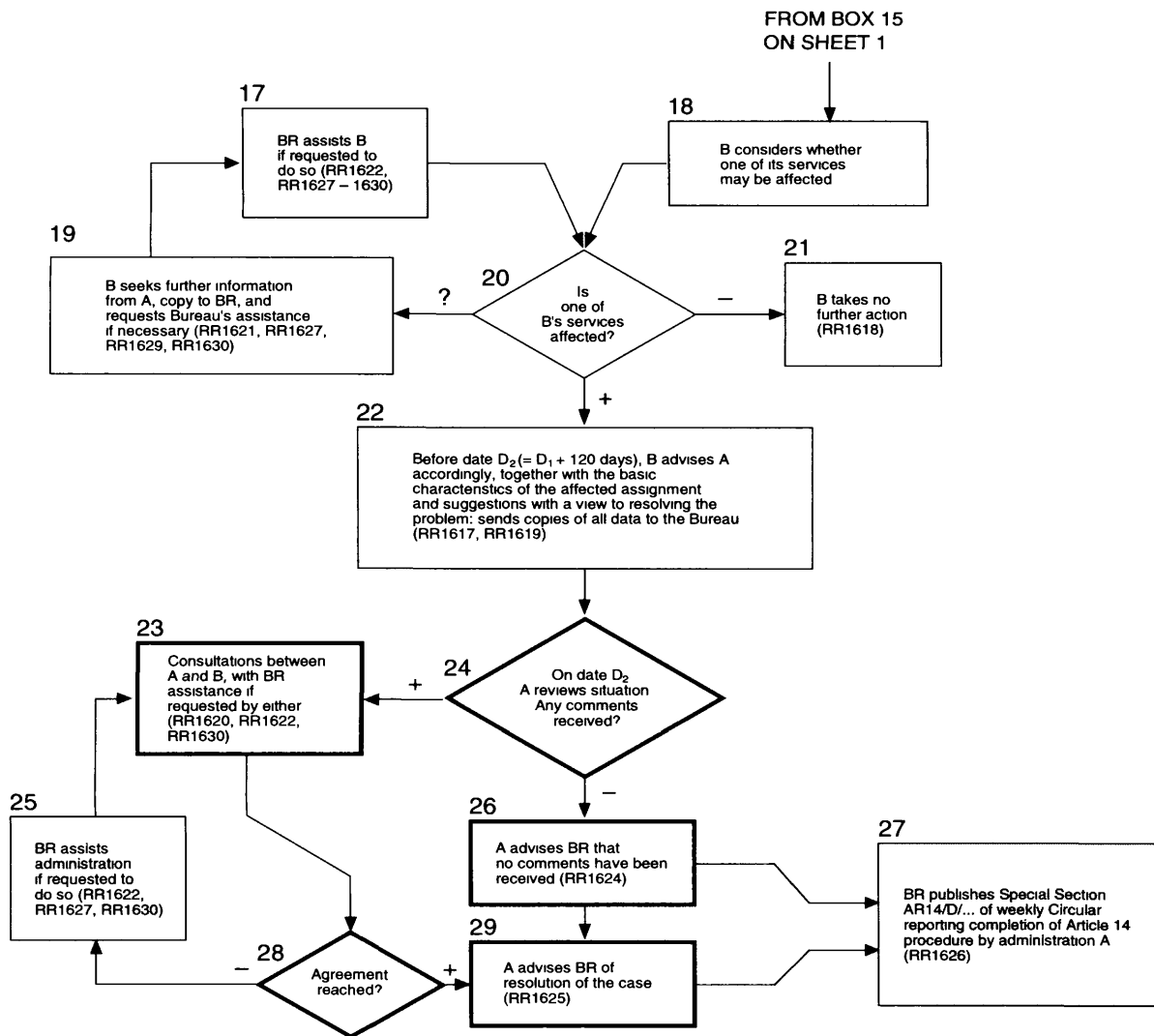


* The RR1504 or RR1506 examination is extended to cover paragraph 5.1.1 or 5.1.3 of Section V of the Annex to Resolution No. 46, respectively

** The RR1505 or RR1509 is extended to cover paragraph 5.1.2 or 5.1.4 of Section V of the Annex to Resolution No. 46, respectively

THE ARTICLE 14 PROCEDURE





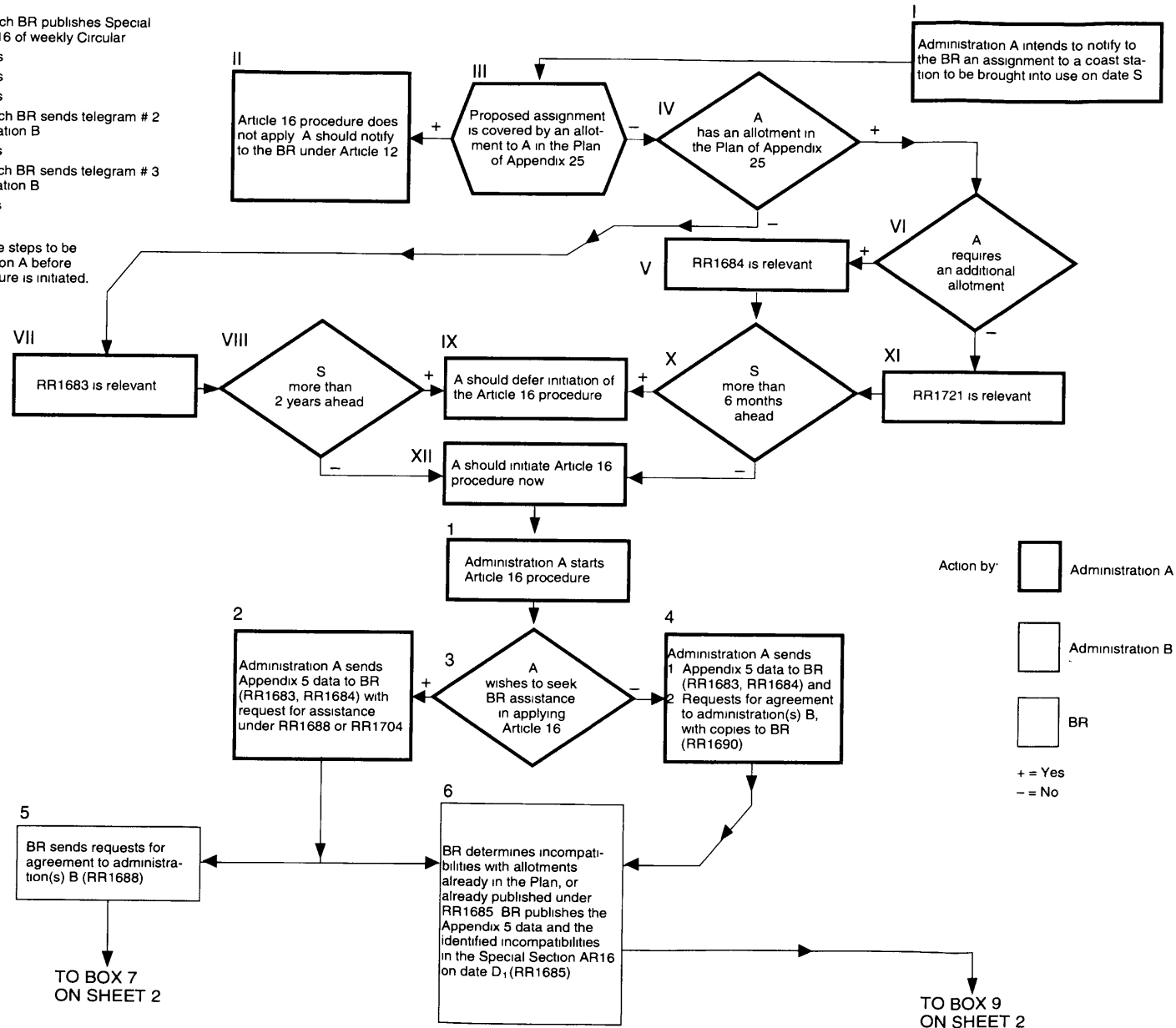
THE ARTICLE 16 PROCEDURE

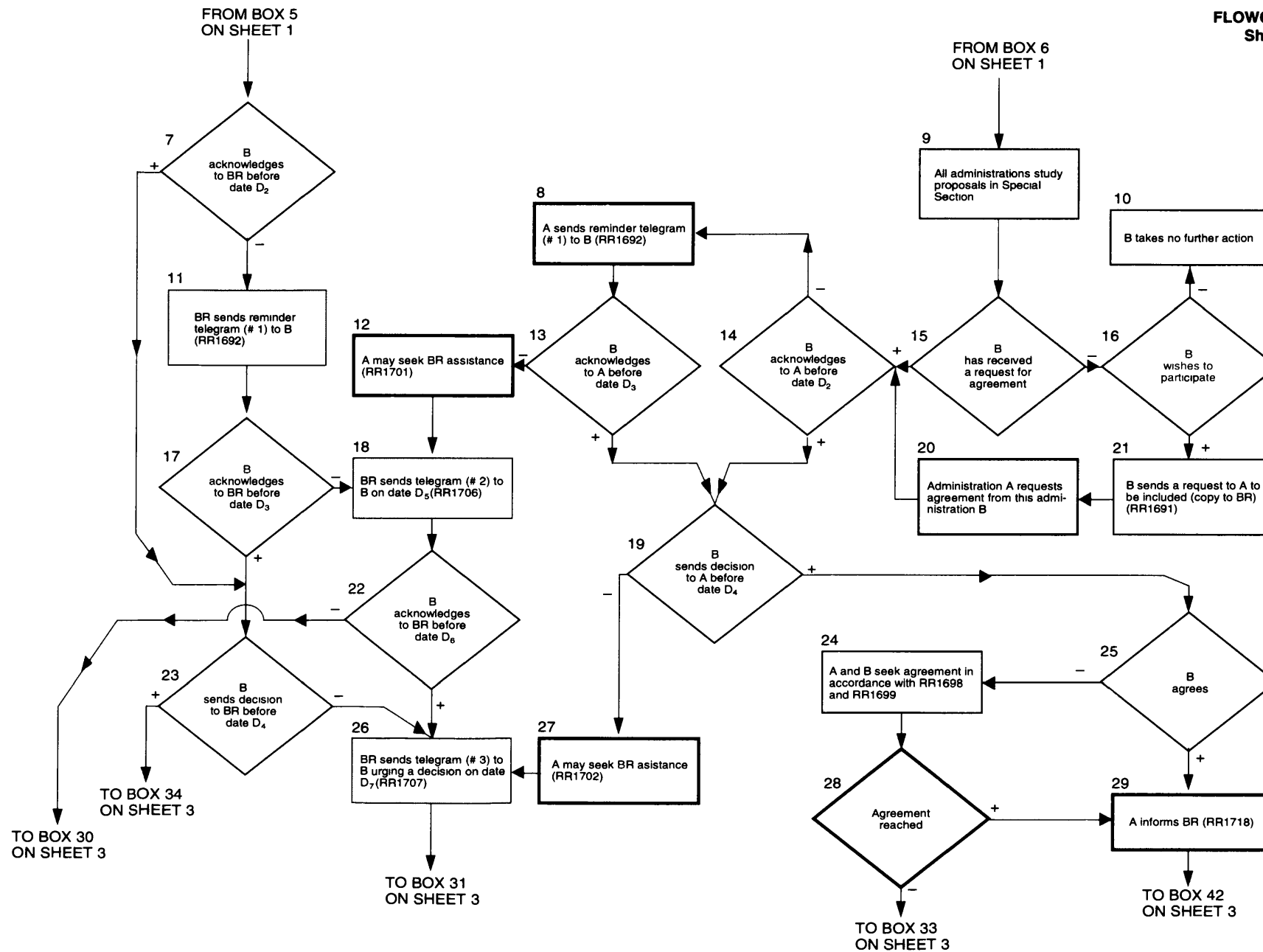
THIS FLOWCHART IS ISSUED AS AN AID TO UNDERSTANDING AND DOES NOT FORM PART OF THE RADIO REGULATIONS

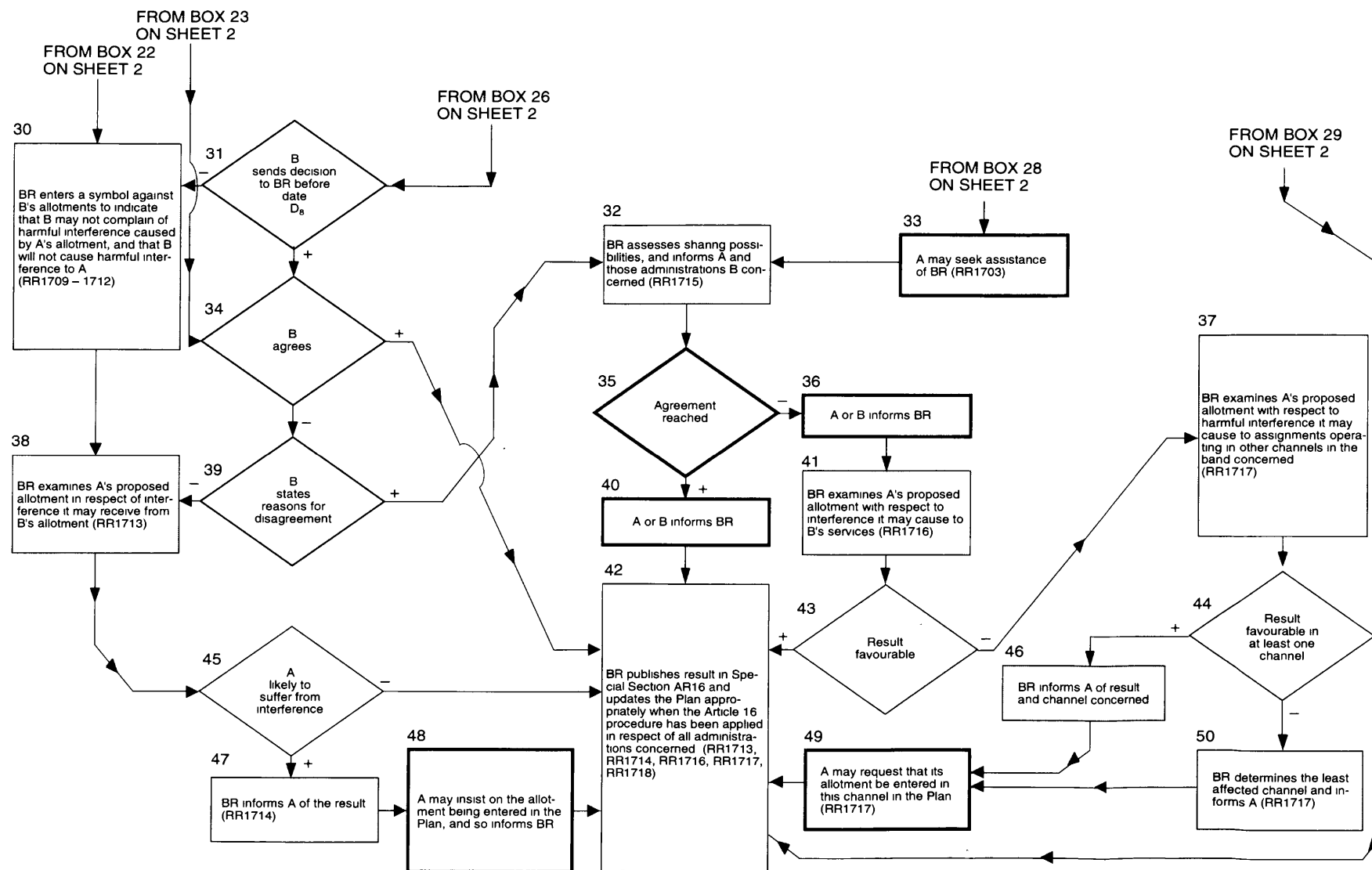
N-51
FLOWCHART No. 21
Sheet 1 of 3

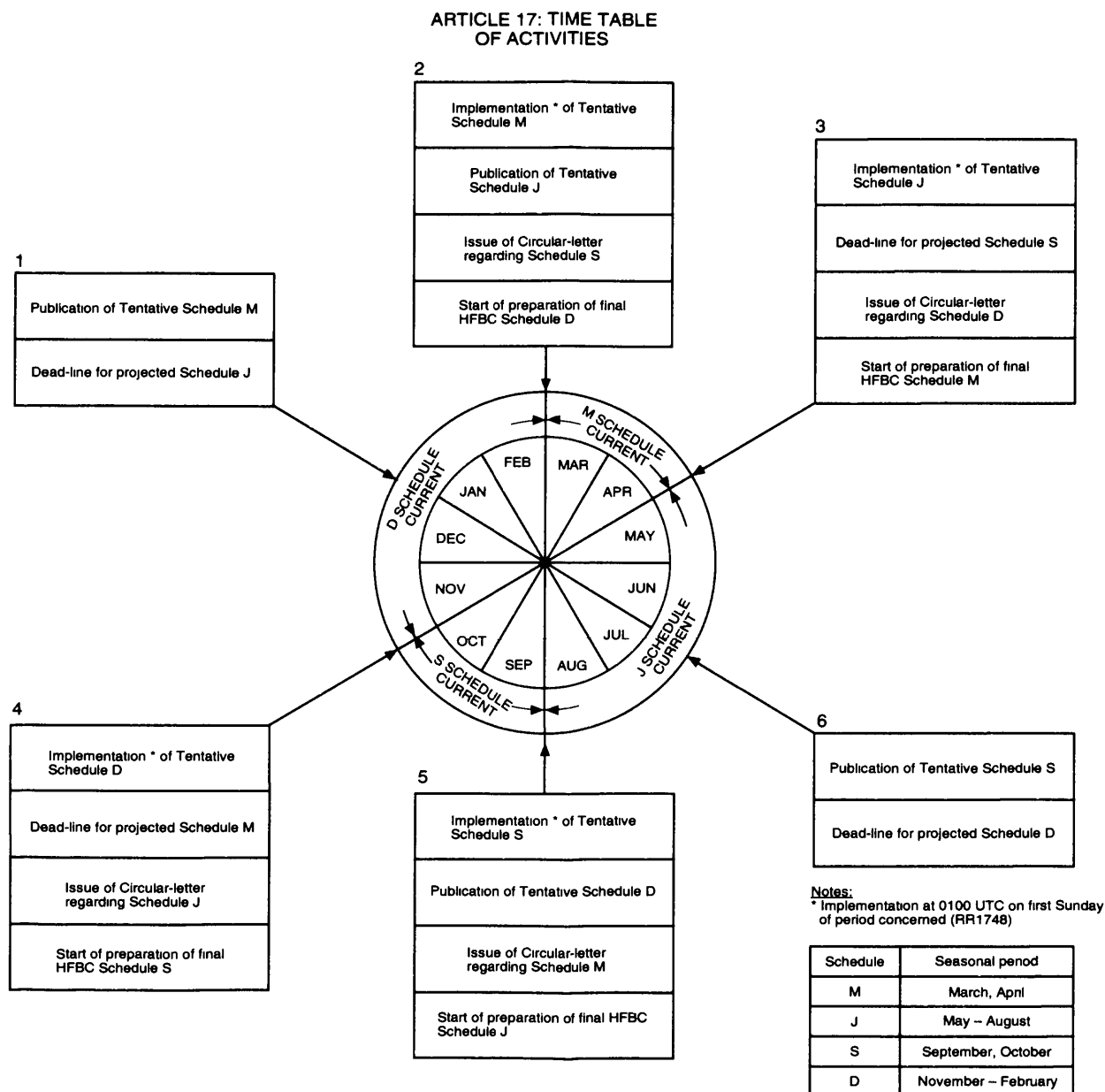
Date D_1 = Date on which BR publishes Special Section AR16 of weekly Circular
Date D_2 = $D_1 + 30$ days
Date D_3 = $D_1 + 45$ days
Date D_4 = $D_1 + 60$ days
Date D_5 = Date on which BR sends telegram # 2 to administration B
Date D_6 = $D_5 + 15$ days
Date D_7 = Date on which BR sends telegram # 3 to administration B
Date D_8 = $D_7 + 30$ days

Note Boxes I – XII indicate steps to be taken by administration A before the Article 16 procedure is initiated.









THIS FLOWCHART IS ISSUED AS AN AID TO UNDERSTANDING AND DOES NOT FORM PART
OF THE RADIO REGULATIONS

THE ARTICLE 17 PROCEDURE RELATING TO ASSIGNMENTS TO BROADCASTING STATIONS
IN THE EXCLUSIVE BANDS BETWEEN 5 950 AND 26 100 kHz

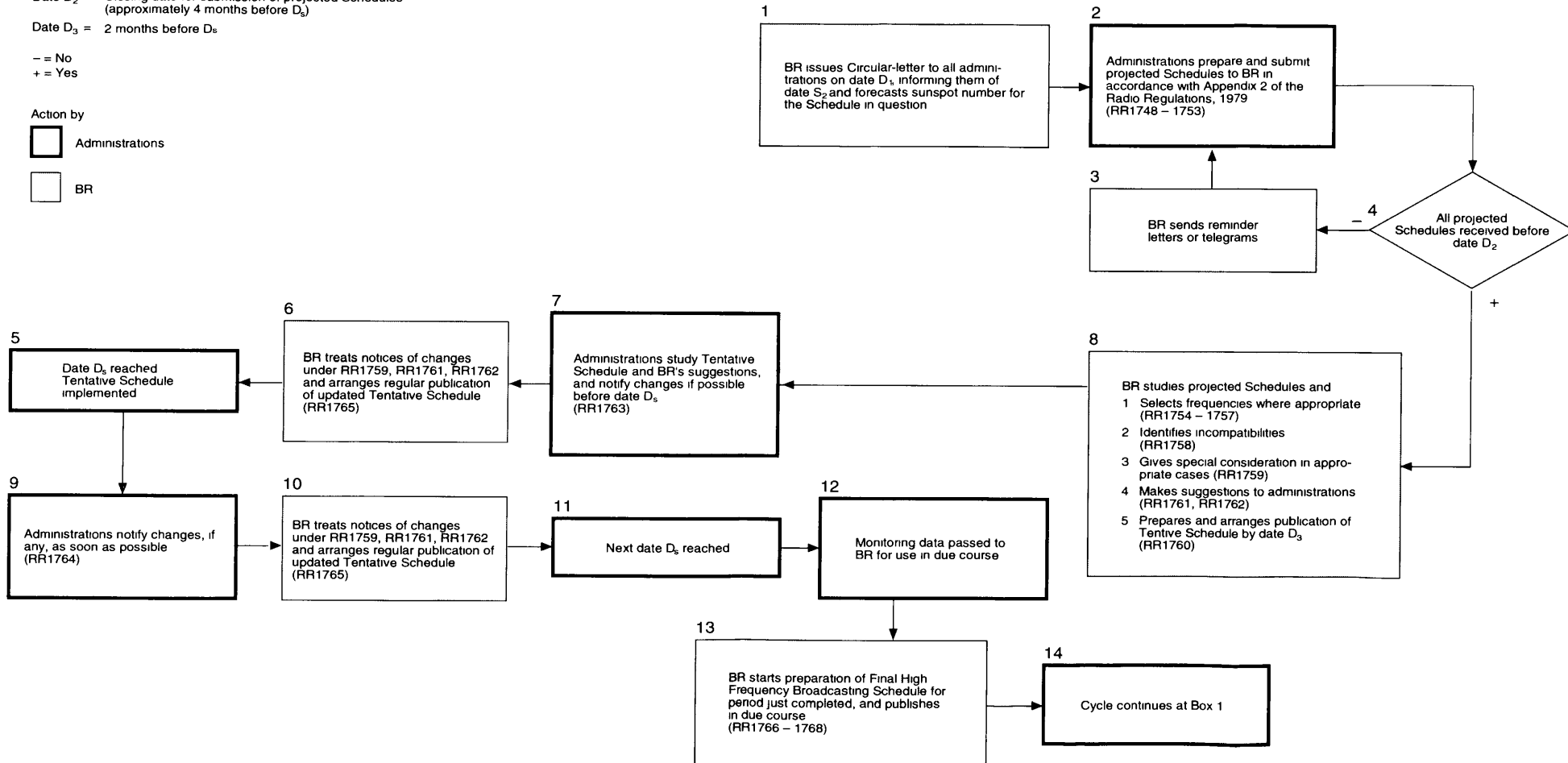
Date D_s = Date on which implementation of the seasonal
Schedule in question starts at 0100 UTC
Date D_1 = Approximately 6 months before D_s
Date D_2 = Closing date for submission of projected Schedules
(approximately 4 months before D_s)
Date D_3 = 2 months before D_s

- = No
+ = Yes

Action by

☐ Administrations

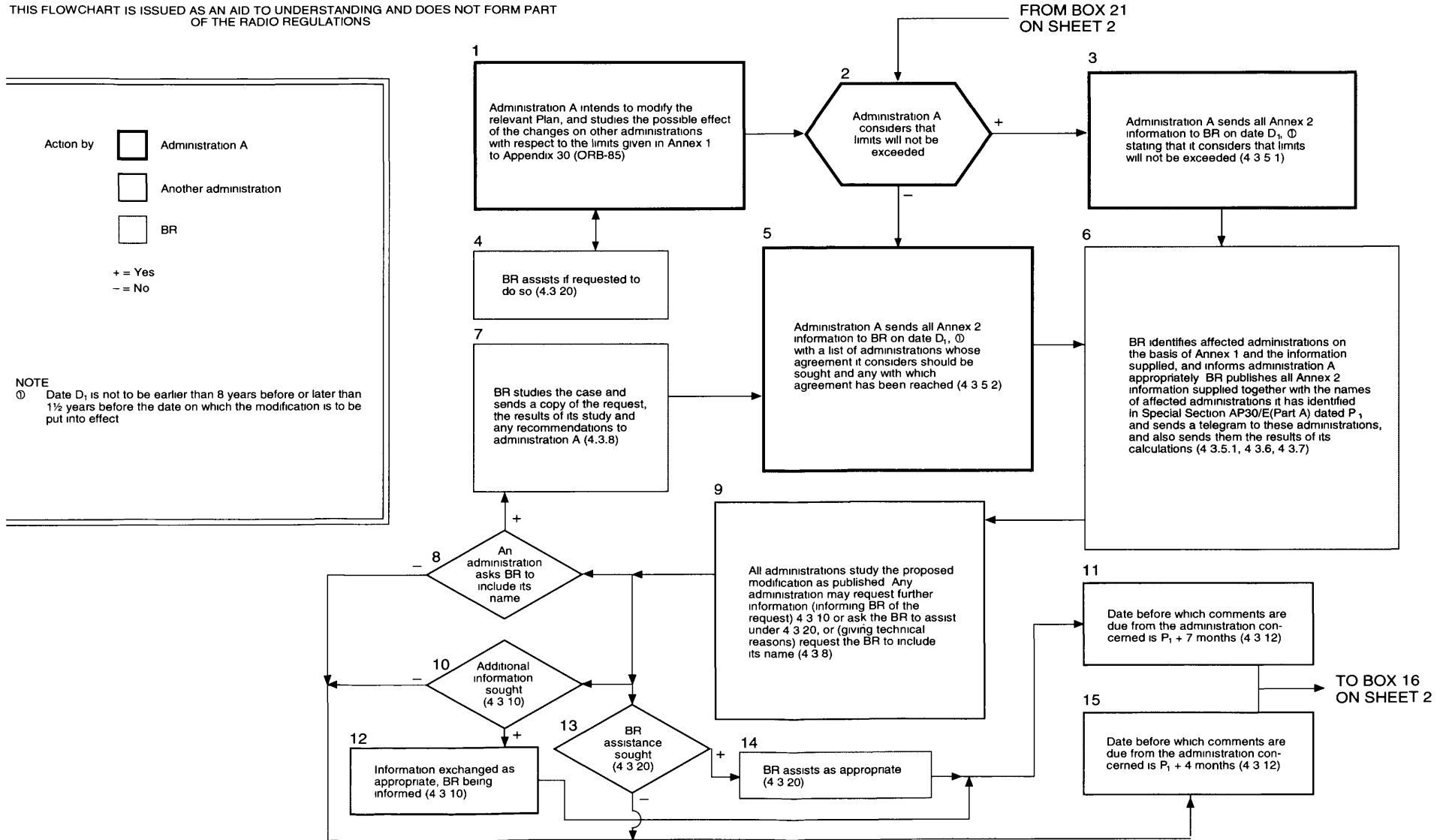
☐ BR



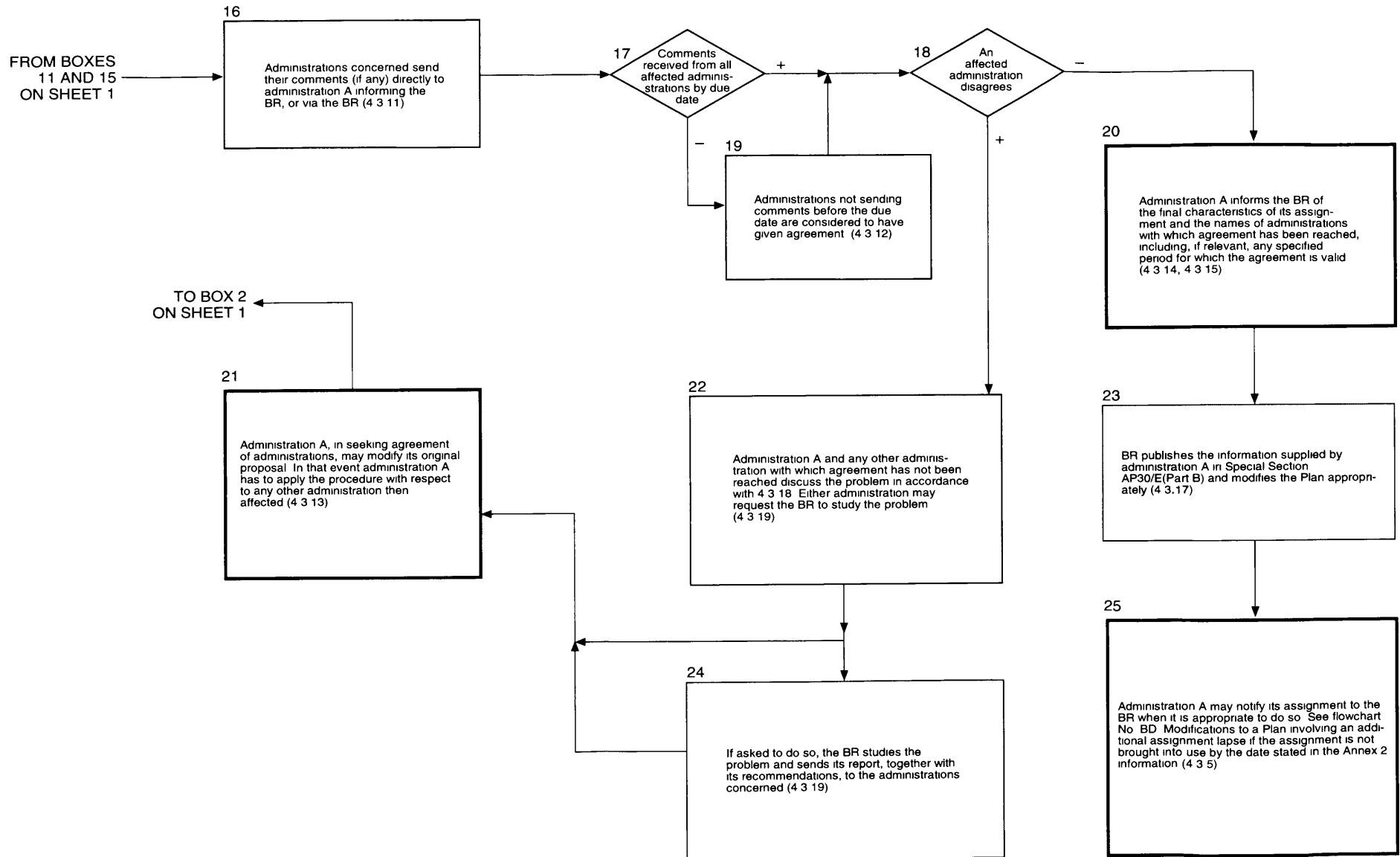
THE PROCEDURE OF ARTICLE 4 OF APPENDIX 30 (ORB-85) FOR MODIFICATION OF THE PLANS FOR THE
BROADCASTING-SATELLITE SERVICE IN THE BANDS 11.7 – 12.2 GHz (REGION 3), 11.7 – 12.5 GHz (REGION 1) AND 12.2 – 12.7 GHz
(REGION 2) (All references are to provisions of Article 4 of Appendix 30 (ORB-85))

FLOWCHART No. 24
Sheet 1 of 2

THIS FLOWCHART IS ISSUED AS AN AID TO UNDERSTANDING AND DOES NOT FORM PART
OF THE RADIO REGULATIONS



FLOWCHART No. 24
Sheet 2 of 2



NOTIFICATION, EXAMINATION AND REGISTRATION OF ASSIGNMENTS TO SPACE STATIONS
IN THE BROADCASTING-SATELLITE SERVICE IN THE BANDS 11.7 – 12.2 GHz (REGION 3),
11.7 – 12.5 GHz (REGION 1) AND 12.2 – 12.7 GHz (REGION 2)
IN ACCORDANCE WITH ARTICLE 5 OF APPENDIX 30 (ORB-85)
(All references are to provisions of that Article)

N-58
FLOWCHART No. 25

THIS FLOWCHART IS ISSUED AS AN AID TO
UNDERSTANDING AND DOES NOT FORM PART
OF THE RADIO REGULATIONS

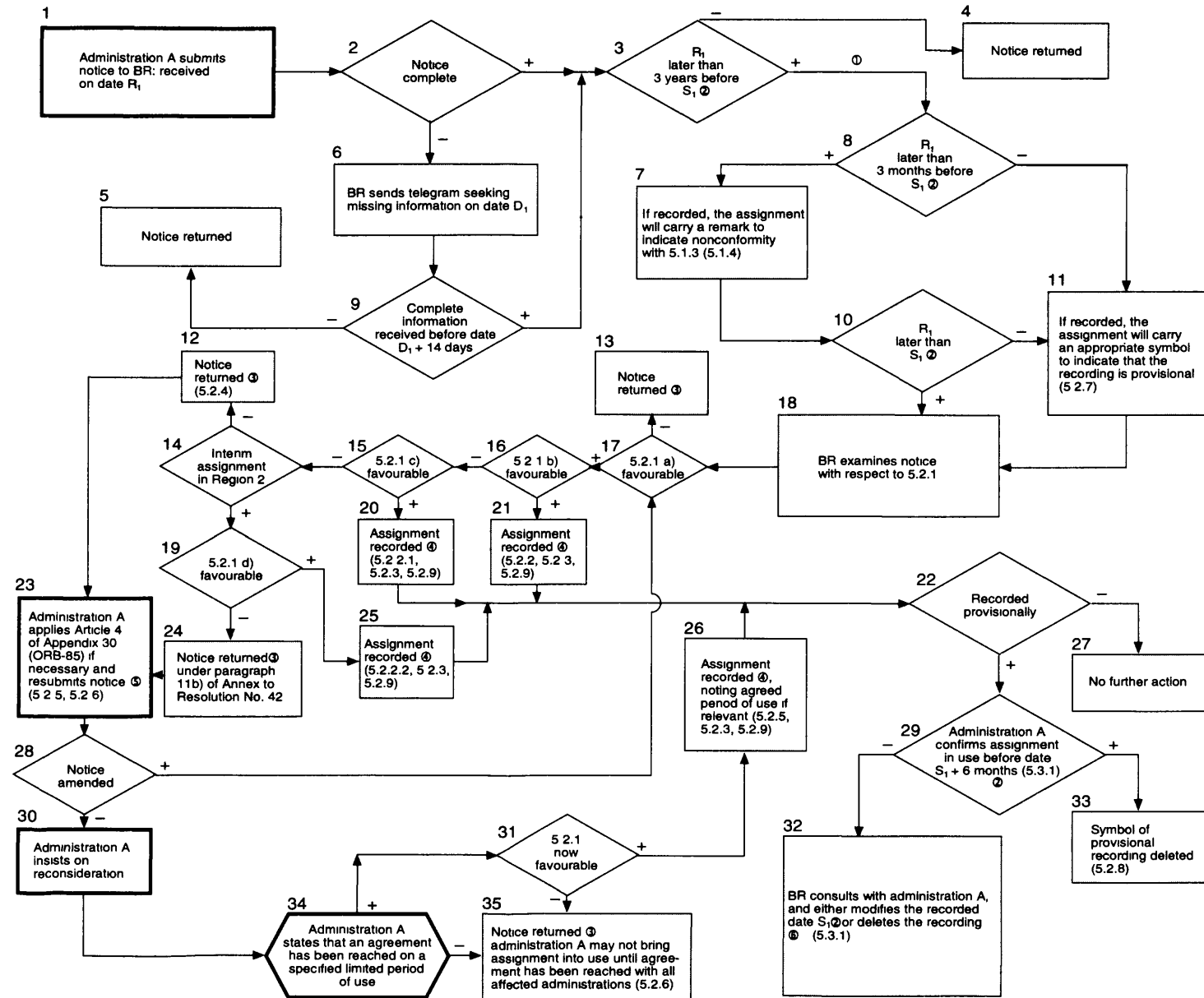
Action by:



+ = Yes
- = No

NOTES

- ① When a complete notice is received, the particulars are published in Part I of the weekly Circular
- ② S_1 is the date of putting into use as notified by administration A.
- ③ When a notice is returned to the administration A, the particulars are published in Part III of the weekly Circular
- ④ When an assignment is recorded in the Master Register, the particulars are published in Part II of the weekly Circular.
- ⑤ When a notice is resubmitted the particulars are published in Part I of the weekly Circular
- ⑥ When an assignment is deleted from the Master Register, the particulars are published in Part I of the weekly Circular.

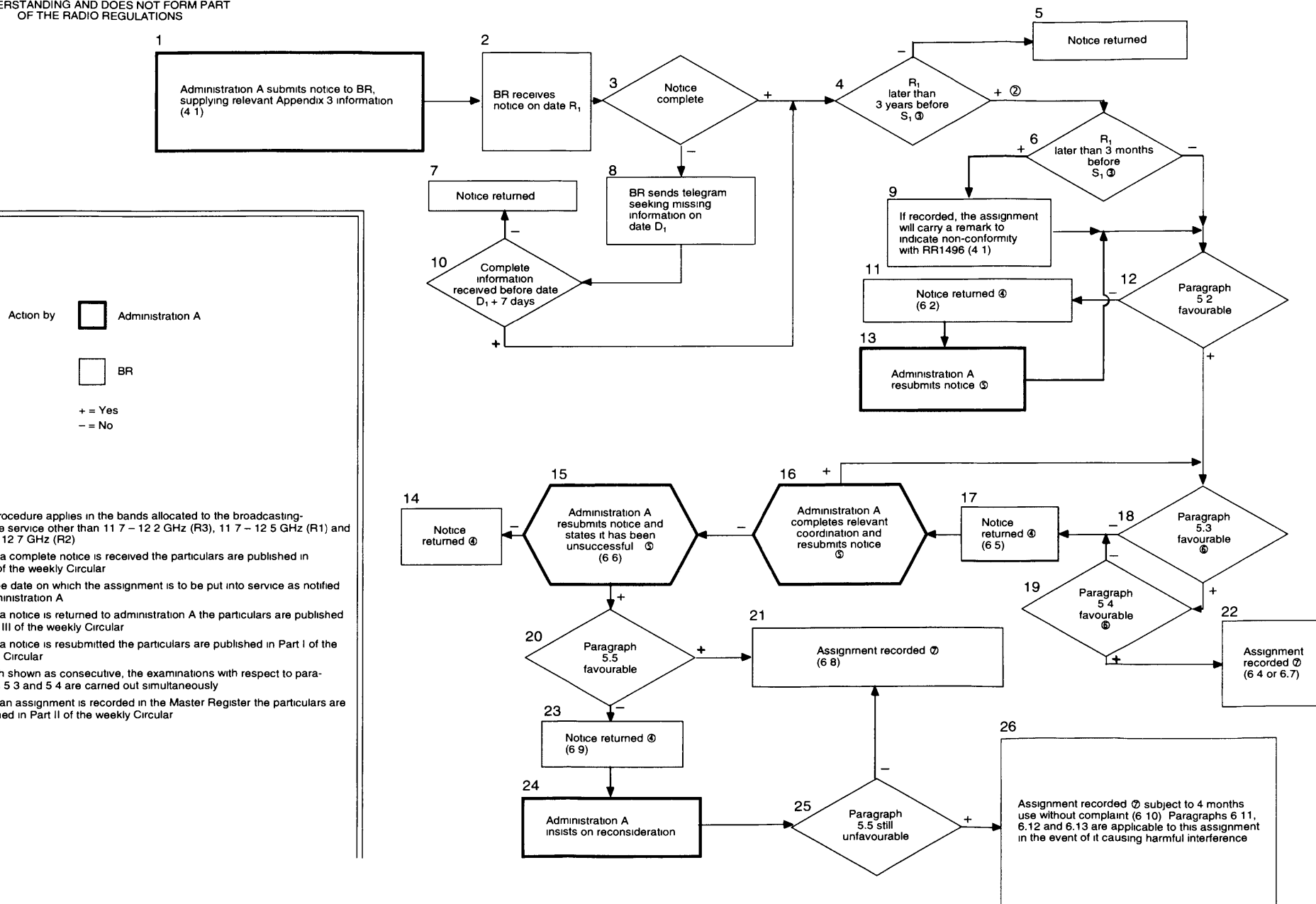


NOTIFICATION, EXAMINATION AND REGISTRATION OF ASSIGNMENTS TO SPACE STATIONS
IN THE BROADCASTING-SATELLITE SERVICE, EXCEPT THOSE STATIONS WHICH OPERATE IN
THE BANDS OF APPENDIX 30, IN ACCORDANCE WITH SECTION C OF RESOLUTION No. 30³
(All references are to paragraphs of that Resolution)

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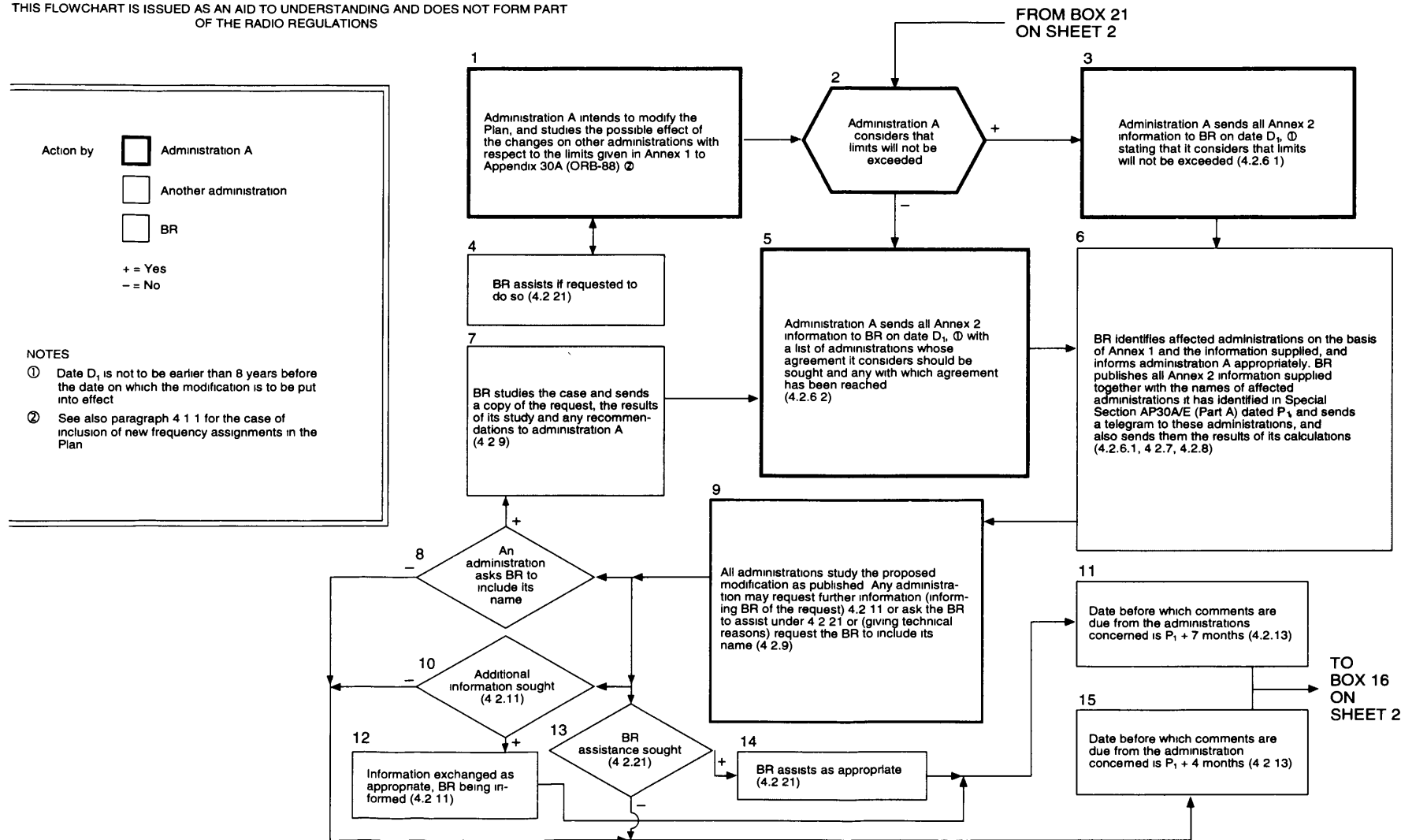
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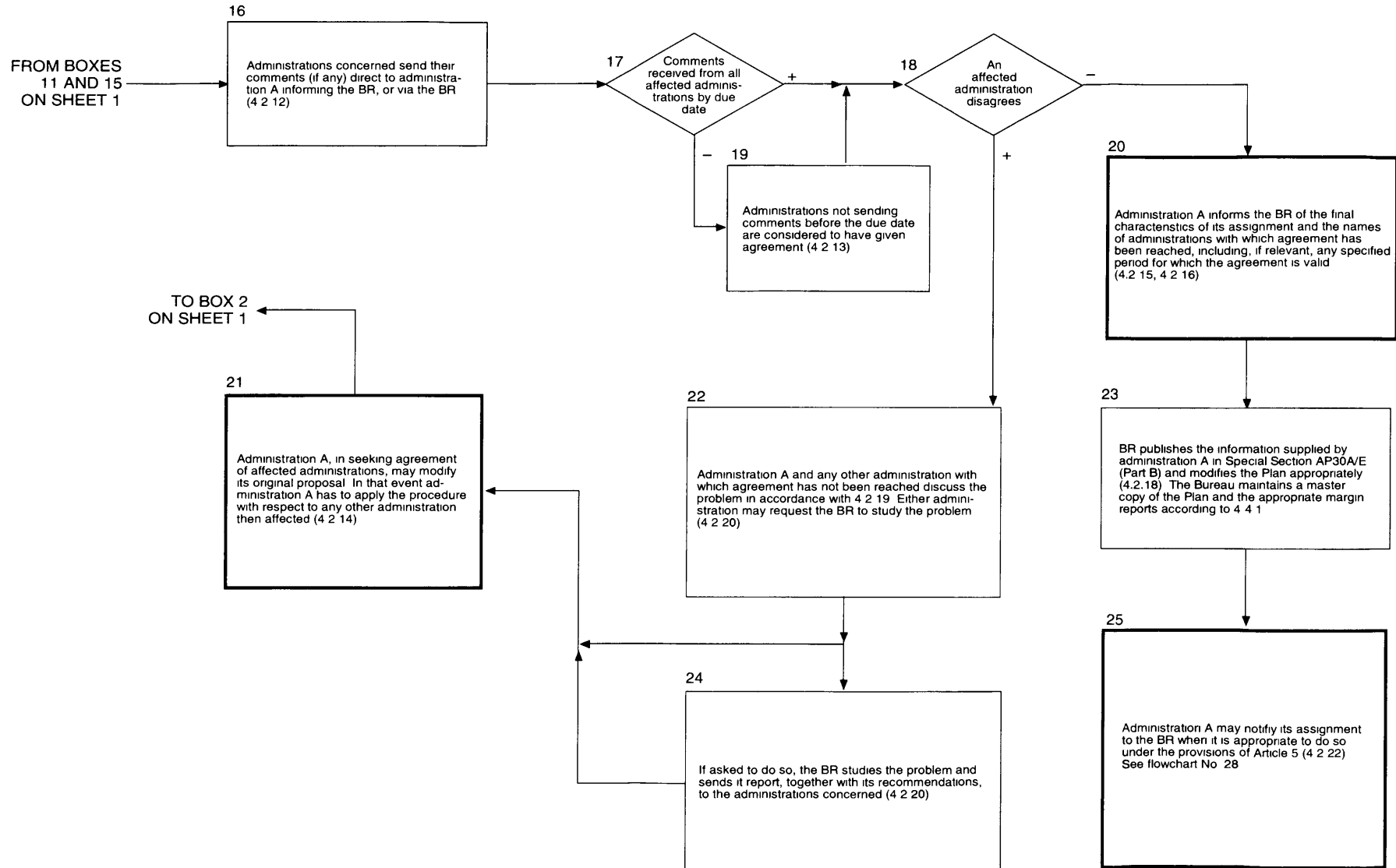
THIS FLOWCHART IS ISSUED AS AN AID TO
UNDERSTANDING AND DOES NOT FORM PART
OF THE RADIO REGULATIONS



THE PROCEDURE OF ARTICLE 4 OF APPENDIX 30A (ORB-88) FOR MODIFICATION OF THE PLAN
FOR THE FEEDER-LINK STATIONS IN THE FIXED-SATELLITE SERVICE IN THE BANDS
14.5 – 14.8 GHz AND 17.3 – 18.1 GHz IN REGIONS 1 AND 3 AND 17.3 – 17.8 GHz IN REGION 2
(All references are to provisions of Article 4 of Appendix 30A (ORB-88))

THIS FLOWCHART IS ISSUED AS AN AID TO UNDERSTANDING AND DOES NOT FORM PART
OF THE RADIO REGULATIONS





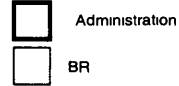
**NOTIFICATION, EXAMINATION AND REGISTRATION OF FREQUENCY ASSIGNMENTS TO
FEEDER-LINK TRANSMITTING EARTH STATIONS AND RECEIVING SPACE STATIONS IN THE FIXED-SATELLITE
SERVICE IN THE BANDS 14.5 - 14.8 GHz AND 17.3 - 18.1 GHz IN REGIONS 1 AND 3, AND 17.3 - 17.8 GHz IN REGION 2**
(All references are to provisions of Article 5 of Appendix 30A (ORB-88))

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FLOWCHART No. 28

THIS FLOWCHART IS ISSUED AS AN AID TO
UNDERSTANDING AND DOES NOT FORM PART
OF THE RADIO REGULATIONS

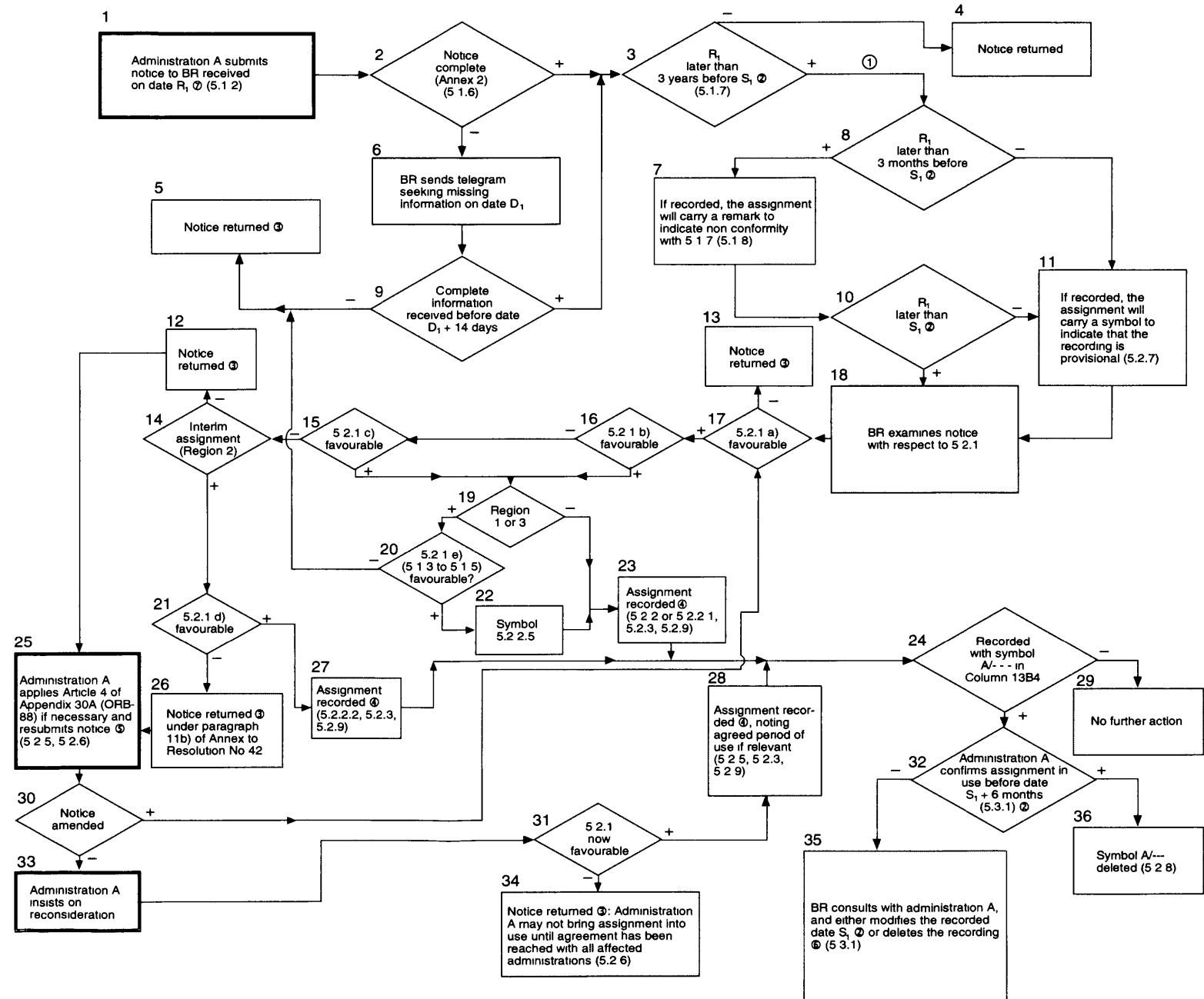
Action by.



+ = Yes
 - = No

NOTES

- ① When a complete notice is received, the particulars are published in Part I of the weekly Circular
- ② S_1 is the date of putting into use as notified by administration A
- ③ When a notice is returned to the administration A, the particulars are published in Part III of the weekly Circular
- ④ When an assignment is recorded in the Master Register, the particulars are published in Part II of the weekly Circular
- ⑤ When a notice is resubmitted the particulars are published in Part I of the weekly Circular
- ⑥ When an assignment is deleted from the Master Register, the particulars are published in Part I of the weekly Circular
- ⑦ When an administration of Region 1 or 3 wants to determine the volume of possible power control it shall request the Bureau's assistance in accordance with 5.1.1



RADIO REGULATIONS

RADIO REGULATIONS

PREAMBLE

- 1** The application of the provisions of these Regulations by the permanent organs of the International Telecommunication Union does not imply the expression of any opinion whatsoever on the part of the Union concerning the sovereignty or the legal status of any country, territory or geographical area.

PART A

CHAPTER I

Terminology

ARTICLE 1

Terms and Definitions

Introduction

- 2** For the purposes of these Regulations, the following terms shall have the meanings defined below. These terms and definitions do not, however, necessarily apply for other purposes. Definitions identical to those contained in the International Telecommunication Convention (Malaga-Torremolinos, 1973) are marked “(CONV.)”.*

Note: If, in the text of a definition below, a term is printed in italics, this means that the term itself is defined in this Article.

Section I. General Terms

- 3** 1.1 *Administration:* Any governmental department or service responsible for discharging the obligations undertaken in the Convention of the International Telecommunication Union and the Regulations (CONV.).

* *Note by the Secretary-General:* The following provisions: **4, 26, 36, 110, 112** and **163** contain definitions identical to those in the International Telecommunication Convention (Nairobi, 1982).

- 4 1.2 *Telecommunication*: Any transmission, *emission* or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, *radio*, optical or other electromagnetic systems (CONV.).
- 5 1.3 *Radio*: A general term applied to the use of *radio waves* (CONV.).
- 6 1.4 *Radio Waves* or *Hertzian Waves*: Electromagnetic waves of frequencies arbitrarily lower than 3 000 GHz, propagated in space without artificial guide.
- 7 1.5 *Radiocommunication*: *Telecommunication* by means of *radio waves* (CONV.).
- 8 1.6 *Terrestrial Radiocommunication*: Any *radiocommunication* other than *space radiocommunication* or *radio astronomy*.
- 9 1.7 *Space Radiocommunication*: Any *radiocommunication* involving the use of one or more *space stations* or the use of one or more *reflecting satellites* or other objects in space.
- 10 1.8 *Radiodetermination*: The determination of the position, velocity and/or other characteristics of an object, or the obtaining of information relating to these parameters, by means of the propagation properties of *radio waves*.
- 11 1.9 *Radionavigation*: *Radiodetermination* used for the purposes of navigation, including obstruction warning.
- 12 1.10 *Radiolocation*: *Radiodetermination* used for purposes other than those of *radionavigation*.
- 13 1.11 *Radio Direction-Finding*: *Radiodetermination* using the reception of *radio waves* for the purpose of determining the direction of a *station* or object.
- 14 1.12 *Radio Astronomy*: Astronomy based on the reception of *radio waves* of cosmic origin.

- 15** 1.13 *Coordinated Universal Time (UTC)*: Time scale, based on the second (SI), as defined and recommended by the CCIR¹, and maintained by the International Time Bureau (BIH).

For most practical purposes associated with the Radio Regulations, UTC is equivalent to mean solar time at the prime meridian (0° longitude), formerly expressed in GMT.

- 15.1** ¹ The full definition is contained in CCIR Recommendation 460-2.

- 16** 1.14 *Industrial, Scientific and Medical (ISM) Applications* (of radio frequency energy): Operation of equipment or appliances designed to generate and use locally radio frequency energy for industrial, scientific, medical, domestic or similar purposes, excluding applications in the field of *telecommunications*.

Section II. Specific Terms Related to Frequency Management

- 17** 2.1 *Allocation* (of a frequency band): Entry in the Table of Frequency Allocations of a given frequency band for the purpose of its use by one or more terrestrial or space *radiocommunication services* or the *radio astronomy service* under specified conditions. This term shall also be applied to the frequency band concerned.
- 18** 2.2 *Allotment* (of a radio frequency or radio frequency channel): Entry of a designated frequency channel in an agreed plan, adopted by a competent conference, for use by one or more administrations for a terrestrial or space *radiocommunication service* in one or more identified countries or geographical areas and under specified conditions.
- 19** 2.3 *Assignment* (of a radio frequency or radio frequency channel): Authorization given by an administration for a radio *station* to use a radio frequency or radio frequency channel under specified conditions.

Section III. Radio Services

- 20 3.1 *Radiocommunication Service:* A service as defined in this Section involving the transmission, *emission* and/or reception of *radio waves* for specific *telecommunication* purposes.

In these Regulations, unless otherwise stated, any radio-communication service relates to *terrestrial radiocommunication*.

- 21 3.2 *Fixed Service:* A *radiocommunication service* between specified fixed points.

- 22 3.3 *Fixed-Satellite Service:* A *radiocommunication service* be-
Orb-88 tween *earth stations* at given positions, when one or more *satellites* are used; the given position may be a specified fixed point or any fixed point within specified areas; in some cases this service includes satellite-to-satellite links, which may also be operated in the *inter-satellite service*; the fixed-satellite service may also include *feeder links* for other *space radiocommunication services*.

- 23 3.4 *Aeronautical Fixed Service:* A *radiocommunication service* between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air transport.

- 24 3.5 *Inter-Satellite Service:* A *radiocommunication service* pro-
WARC-92 viding links between artificial *satellites*.

- 25 3.6 *Space Operation Service:* A *radiocommunication service* concerned exclusively with the operation of *spacecraft*, in particular *space tracking*, *space telemetry* and *space telecommand*.

These functions will normally be provided within the service in which the *space station* is operating.

- 26 3.7 *Mobile Service: A radiocommunication service between mobile and land stations, or between mobile stations (CONV.).*
- 27 3.8 *Mobile-Satellite Service: A radiocommunication service:*
- between *mobile earth stations* and one or more *space stations*, or between *space stations* used by this service; or
 - between *mobile earth stations* by means of one or more *space stations*.
- This service may also include *feeder links* necessary for its operation.
- 28 3.9 *Land Mobile Service: A mobile service between base stations and land mobile stations, or between land mobile stations.*
- 29 3.10 *Land Mobile-Satellite Service: A mobile-satellite service in which mobile earth stations are located on land.*
- 30 3.11 *Maritime Mobile Service: A mobile service between coast stations and ship stations, or between ship stations, or between associated on-board communication stations; survival craft stations and emergency position-indicating radiobeacon stations may also participate in this service.*
- 31 3.12 *Maritime Mobile-Satellite Service: A mobile-satellite service in which mobile earth stations are located on board ships; survival craft stations and emergency position-indicating radiobeacon stations may also participate in this service.*
- 32 3.13 *Port Operations Service: A maritime mobile service in or near a port, between coast stations and ship stations, or between ship stations, in which messages are restricted to those relating to the*

operational handling, the movement and the safety of ships and, in emergency, to the safety of persons.

Messages which are of a *public correspondence* nature shall be excluded from this service.

- 33** 3.14 *Ship Movement Service*: A *safety service* in the *maritime mobile service* other than a *port operations service*, between *coast stations* and *ship stations*, or between *ship stations*, in which messages are restricted to those relating to the movement of ships.

Messages which are of a *public correspondence* nature shall be excluded from this service.

- 34** 3.15 *Aeronautical Mobile Service*: A *mobile service* between *aeronautical stations* and *aircraft stations*, or between *aircraft stations*, in which *survival craft stations* may participate; *emergency position-indicating radiobeacon stations* may also participate in this service on designated distress and emergency frequencies.

- 34A** 3.15A *Aeronautical Mobile (R)* Service*: An *aeronautical mobile*
Mob-87 *service* reserved for communications relating to safety and regularity of flight, primarily along national or international civil air routes.

- 34B** 3.15B *Aeronautical Mobile (OR)** Service*: An *aeronautical mo-*
Mob-87 *bile service* intended for communications, including those relating to flight coordination, primarily outside national or international civil air routes.

- 35** 3.16 *Aeronautical Mobile-Satellite Service*: A *mobile-satellite service* in which *mobile earth stations* are located on board aircraft;

* (R): route.

** (OR): off-route.

survival craft stations and emergency position-indicating radio-beacon stations may also participate in this service.

35A 3.16A *Aeronautical Mobile-Satellite (R)* Service: An aeronautical*
Mob-87 *mobile-satellite service* reserved for communications relating to safety and regularity of flights, primarily along national or international civil air routes.

35B 3.16B *Aeronautical Mobile-Satellite (OR)** Service: An aeronau-*
Mob-87 *tical mobile-satellite service* intended for communications, including those relating to flight coordination, primarily outside national and international civil air routes.

36 3.17 *Broadcasting Service: A radiocommunication service* in which the transmissions are intended for direct reception by the general public. This service may include sound transmissions, *television* transmissions or other types of transmission (CONV.).

37 3.18 *Broadcasting-Satellite Service: A radiocommunication ser-*
vice in which signals transmitted or retransmitted by *space stations* are intended for direct reception by the general public.

In the broadcasting-satellite service, the term “direct reception” shall encompass both *individual reception* and *community reception*.

38 3.19 *Radiodetermination Service: A radiocommunication service* for the purpose of *radiodetermination*.

39 3.20 *Radiodetermination-Satellite Service: A radiocommuni-*
Mob-87 *cation service* for the purpose of *radiodetermination* involving the use of one or more *space stations*.

* (R): route.

** (OR): off-route.

This service may also include *feeder links* necessary for its own operation.

40 3.21 *Radionavigation Service: A radiodetermination service for the purpose of radionavigation.*

41 3.22 *Radionavigation-Satellite Service: A radiodetermination-satellite service used for the purpose of radionavigation.*

This service may also include *feeder links* necessary for its operation.

42 3.23 *Maritime Radionavigation Service: A radionavigation service intended for the benefit and for the safe operation of ships.*

43 3.24 *Maritime Radionavigation-Satellite Service: A radionavigation-satellite service in which earth stations are located on board ships.*

44 3.25 *Aeronautical Radionavigation Service: A radionavigation service intended for the benefit and for the safe operation of aircraft.*

45 3.26 *Aeronautical Radionavigation-Satellite Service: A radionavigation-satellite service in which earth stations are located on board aircraft.*

46 3.27 *Radiolocation Service: A radiodetermination service for the purpose of radiolocation.*

46A 3.27A *Radiolocation-Satellite Service: A radiodetermination-satellite service used for the purpose of radiolocation.*
WARC-92

This service may also include the *feeder links* necessary for its operation.

47 3.28 *Meteorological Aids Service: A radiocommunication service used for meteorological, including hydrological, observations and exploration.*

48 3.29 *Earth Exploration-Satellite Service: A radiocommunication*
WARC-92 *service between earth stations and one or more space stations, which*
may include links between space stations, in which:

- information relating to the characteristics of the Earth and its natural phenomena, including data relating to the state of the environment, is obtained from *active sensors* or *passive sensors* on *Earth satellites*;
- similar information is collected from airborne or Earth-based platforms;
- such information may be distributed to *earth stations* within the system concerned;
- platform interrogation may be included.

This service may also include *feeder links* necessary for its operation.

49 3.30 *Meteorological-Satellite Service: An earth exploration-satellite service* for meteorological purposes.

50 3.31 *Standard Frequency and Time Signal Service: A radio-communication service* for scientific, technical and other purposes, providing the transmission of specified frequencies, time signals, or both, of stated high precision, intended for general reception.

51 3.32 *Standard Frequency and Time Signal-Satellite Service: A radiocommunication service* using *space stations* on *earth satellites* for the same purposes as those of the *standard frequency and time signal service*.

This service may also include *feeder links* necessary for its operation.

- 52 3.33 *Space Research Service: A radiocommunication service in which spacecraft or other objects in space are used for scientific or technological research purposes.*
- 53 3.34 *Amateur Service: A radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, by duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest.*
- 54 3.35 *Amateur-Satellite Service: A radiocommunication service using space stations on earth satellites for the same purposes as those of the amateur service.*
- 55 3.36 *Radio Astronomy Service: A service involving the use of radio astronomy.*
- 56 3.37 *Safety Service: Any radiocommunication service used permanently or temporarily for the safeguarding of human life and property (CONV.).*
- 57 3.38 *Special Service: A radiocommunication service, not otherwise defined in this Section, carried on exclusively for specific needs of general utility, and not open to public correspondence.*

Section IV. Radio Stations and Systems

- 58 4.1 *Station: One or more transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment, necessary at one location for carrying on a radiocommunication service, or the radio astronomy service.*

 Each station shall be classified by the service in which it operates permanently or temporarily.
- 59 4.2 *Terrestrial Station: A station effecting terrestrial radiocommunication.*

In these Regulations, unless otherwise stated, any *station* is a terrestrial station.

- 60 4.3 *Earth Station*: A *station* located either on the Earth's surface or within the major portion of the Earth's atmosphere and intended for communication:
- with one or more *space stations*; or
 - with one or more *stations* of the same kind by means of one or more reflecting *satellites* or other objects in space.
- 61 4.4 *Space Station*: A *station* located on an object which is beyond, is intended to go beyond, or has been beyond, the major portion of the Earth's atmosphere.
- 62 4.5 *Survival Craft Station*: A *mobile station* in the *maritime mobile service* or the *aeronautical mobile service* intended solely for survival purposes and located on any lifeboat, life-raft or other survival equipment.
- 63 4.6 *Fixed Station*: A *station* in the *fixed service*.
- 64 4.7 *Aeronautical Fixed Station*: A *station* in the *aeronautical fixed service*.
- 65 4.8 *Mobile Station*: A *station* in the *mobile service* intended to be used while in motion or during halts at unspecified points.
- 66 4.9 *Mobile Earth Station*: An *earth station* in the *mobile-satellite service* intended to be used while in motion or during halts at unspecified points.
- 67 4.10 *Land Station*: A *station* in the *mobile service* not intended to be used while in motion.
- 67A 4.10A *Land Earth Station*: An *earth station* in the *fixed-satellite*
Mob-87 *service* or, in some cases, in the *mobile-satellite service*, located at a

specified fixed point or within a specified area on land to provide a *feeder link* for the *mobile-satellite service*.

68 4.11 *Base Station: A land station in the land mobile service.*

68A 4.11A *Base Earth Station: An earth station in the fixed-satellite*
Mob-87 *service or, in some cases, in the land mobile-satellite service, located at a specified fixed point or within a specified area on land to provide a feeder link for the land mobile-satellite service.*

69 4.12 *Land Mobile Station: A mobile station in the land mobile service capable of surface movement within the geographical limits of a country or continent.*

69A 4.12A *Land Mobile Earth Station: A mobile earth station in the*
Mob-87 *land mobile-satellite service capable of surface movement within the geographical limits of a country or continent.*

70 4.13 *Coast Station: A land station in the maritime mobile service.*

71 4.14 *Coast Earth Station: An earth station in the fixed-satellite service or, in some cases, in the maritime mobile-satellite service, located at a specified fixed point on land to provide a feeder link for the maritime mobile-satellite service.*

72 4.15 *Ship Station: A mobile station in the maritime mobile service located on board a vessel which is not permanently moored, other than a survival craft station.*

73 4.16 *Ship Earth Station: A mobile earth station in the maritime mobile-satellite service located on board ship.*

74 4.17 *On-Board Communication Station: A low-powered mobile station in the maritime mobile service intended for use for internal communications on board a ship, or between a ship and its lifeboats*

and life-rafts during lifeboat drills or operations, or for communication within a group of vessels being towed or pushed, as well as for line handling and mooring instructions.

- 75 4.18 *Port Station: A coast station in the port operations service.*
 - 76 4.19 *Aeronautical Station: A land station in the aeronautical mobile service.*
- In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea.
- 77 4.20 *Aeronautical Earth Station: An earth station in the fixed-satellite service, or, in some cases, in the aeronautical mobile-satellite service, located at a specified fixed point on land to provide a feeder link for the aeronautical mobile-satellite service.*
 - 78 4.21 *Aircraft Station: A mobile station in the aeronautical mobile service, other than a survival craft station, located on board an aircraft.*
 - 79 4.22 *Aircraft Earth Station: A mobile earth station in the aeronautical mobile-satellite service located on board an aircraft.*
 - 80 4.23 *Broadcasting Station: A station in the broadcasting service.*
 - 81 4.24 *Radiodetermination Station: A station in the radiodetermination service.*
 - 82 4.25 *Radionavigation Mobile Station: A station in the radionavigation service intended to be used while in motion or during halts at unspecified points.*
 - 83 4.26 *Radionavigation Land Station: A station in the radionavigation service not intended to be used while in motion.*

- 84** 4.27 *Radiolocation Mobile Station:* A station in the *radiolocation service* intended to be used while in motion or during halts at unspecified points.
- 85** 4.28 *Radiolocation Land Station:* A station in the *radiolocation service* not intended to be used while in motion.
- 86** 4.29 *Radio Direction-Finding Station:* A *radiodetermination station* using *radio direction-finding*.
- 87** 4.30 *Radiobeacon Station:* A station in the *radionavigation service* the *emissions* of which are intended to enable a *mobile station* to determine its bearing or direction in relation to the radiobeacon station.
- 88** 4.31 *Emergency Position-Indicating Radiobeacon Station:* A station in the *mobile service* the *emissions* of which are intended to facilitate search and rescue operations.
- 88A** 4.31A *Satellite Emergency Position-Indicating Radiobeacon:* An
Mob-83 *earth station* in the *mobile-satellite service* the *emissions* of which are intended to facilitate search and rescue operations.
- 89** 4.32 *Standard Frequency and Time Signal Station:* A station in the *standard frequency and time signal service*.
- 90** 4.33 *Amateur Station:* A station in the *amateur service*.
- 91** 4.34 *Radio Astronomy Station:* A station in the *radio astronomy service*.
- 92** 4.35 *Experimental Station:* A station utilizing *radio waves* in experiments with a view to the development of science or technique.
- This definition does not include *amateur stations*.
- 93** 4.36 *Ship's Emergency Transmitter:* A ship's transmitter to be used exclusively on a distress frequency for distress, urgency or safety purposes.

- 94 4.37 *Radar*: A *radiodetermination* system based on the comparison of reference signals with radio signals reflected, or retransmitted, from the position to be determined.
- 95 4.38 *Primary Radar*: A *radiodetermination* system based on the comparison of reference signals with radio signals reflected from the position to be determined.
- 96 4.39 *Secondary Radar*: A *radiodetermination* system based on the comparison of reference signals with radio signals retransmitted from the position to be determined.
- 97 4.40 *Radar Beacon (racon)*: A transmitter-receiver associated with a fixed navigational mark which, when triggered by a *radar*, automatically returns a distinctive signal which can appear on the display of the triggering *radar*, providing range, bearing and identification information.
- 98 4.41 *Instrument Landing System (ILS)*: A *radionavigation* system which provides aircraft with horizontal and vertical guidance just before and during landing and, at certain fixed points, indicates the distance to the reference point of landing.
- 99 4.42 *Instrument Landing System Localizer*: A system of horizontal guidance embodied in the *instrument landing system* which indicates the horizontal deviation of the aircraft from its optimum path of descent along the axis of the runway.
- 100 4.43 *Instrument Landing System Glide Path*: A system of vertical guidance embodied in the *instrument landing system* which indicates the vertical deviation of the aircraft from its optimum path of descent.
- 101 4.44 *Marker Beacon*: A transmitter in the *aeronautical radio-navigation service* which radiates vertically a distinctive pattern for providing position information to aircraft.
- 102 4.45 *Radio Altimeter*: *Radionavigation* equipment, on board an aircraft or *spacecraft*, used to determine the height of the

aircraft or the *spacecraft* above the Earth's surface or another surface.

103 4.46 *Radiosonde*: An automatic radio transmitter in the *meteorological aids service* usually carried on an aircraft, free balloon, kite or parachute, and which transmits meteorological data.

104 4.47 *Space System*: Any group of cooperating *earth stations* and/or *space stations* employing *space radiocommunication* for specific purposes.

105 4.48 *Satellite System*: A *space system* using one or more artificial earth *satellites*.

106 4.49 *Satellite Network*: A *satellite system* or a part of a *satellite system*, consisting of only one *satellite* and the cooperating *earth stations*.

107 4.50 *Satellite Link*: A radio link between a transmitting *earth station* and a receiving *earth station* through one *satellite*.

A satellite link comprises one up-link and one down-link.

108 4.51 *Multi-Satellite Link*: A radio link between a transmitting *earth station* and a receiving *earth station* through two or more *satellites*, without any intermediate *earth station*.

A multi-satellite link comprises one up-link, one or more satellite-to-satellite links and one down-link.

109 4.52 *Feeder Link*: A radio link from an *earth station* at a given
Orb-88 location to a *space station*, or vice versa, conveying information for a *space radiocommunication service* other than for the *fixed-satellite service*. The given location may be at a specified fixed point, or at any fixed point within specified areas.

Section V. Operational Terms

- 110 5.1 *Public Correspondence*: Any *telecommunication* which the offices and *stations* must, by reason of their being at the disposal of the public, accept for transmission (CONV.).
- 111 5.2 *Telegraphy**: A form of *telecommunication* which is concerned in any process providing transmission and reproduction at a distance of documentary matter, such as written or printed matter or fixed images, or the reproduction at a distance of any kind of information in such a form. For the purposes of the Radio Regulations, unless otherwise specified therein, telegraphy shall mean a form of *telecommunication* for the transmission of written matter by the use of a signal code.
- 112 5.3 *Telegram*: Written matter intended to be transmitted by *telegraphy* for delivery to the addressee. This term also includes *radiotelegrams* unless otherwise specified (CONV.).
- In this definition the term *telegraphy* has the same general meaning as defined in the Convention.
- 113 5.4 *Radiotelegram*: A *telegram*, originating in or intended for a *mobile station* or a *mobile earth station* transmitted on all or part of its route over the *radiocommunication* channels of the *mobile service* or of the *mobile-satellite service*.
- 114 5.5 *Radiotelex Call*: A telex call, originating in or intended for a *mobile station* or a *mobile earth station*, transmitted on all or part of its route over the *radiocommunication* channels of the *mobile service* or the *mobile-satellite service*.

* *Note by the Secretary-General*: This definition is not in alignment with Annex 2 to the Convention. The corresponding definition in that Annex shall prevail to the extent that there are differences between them.

- 115 5.6 *Frequency-Shift Telegraphy*: Telegraphy by frequency modulation in which the telegraph signal shifts the frequency of the carrier between predetermined values.
- 116 5.7 *Facsimile*: A form of *telegraphy* for the transmission of fixed images, with or without half-tones, with a view to their reproduction in a permanent form.

In this definition the term *telegraphy* has the same general meaning as defined in the Convention.

- 117 5.8 *Telephony*^{*}: A form of *telecommunication* set up for the transmission of speech or, in some cases, other sounds.
- 118 5.9 *Radiotelephone Call*: A telephone call, originating in or intended for a *mobile station* or a *mobile earth station*, transmitted on all or part of its route over the *radiocommunication* channels of the *mobile service* or of the *mobile-satellite service*.
- 119 5.10 *Simplex Operation*: Operating method in which transmission is made possible alternately in each direction of a *telecommunication* channel, for example, by means of manual control¹.

- 119.1 ¹ In general, *duplex operation* and *semi-duplex operation* require two frequencies in *radiocommunication*; *simplex operation* may use either one or two.

^{*} *Note by the Secretary-General*: This definition is not in alignment with Annex 2 to the Convention. The corresponding definition in that Annex shall prevail to the extent that there are differences between them.

- 120** 5.11 *Duplex Operation*: Operating method in which transmission is possible simultaneously in both directions of a *telecommunication* channel¹.
- 120.1** ¹ In general, *duplex operation* and *semi-duplex operation* require two frequencies in *radiocommunication*; *simplex operation* may use either one or two.
- 121** 5.12 *Semi-Duplex Operation*: A method which is *simplex operation* at one end of the circuit and *duplex operation* at the other².
- 121.1** ² In general, *duplex operation* and *semi-duplex operation* require two frequencies in *radiocommunication*; *simplex operation* may use either one or two.
- 122** 5.13 *Television*: A form of *telecommunication* for the transmission of transient images of fixed or moving objects.
- 123** 5.14 *Individual Reception* (in the broadcasting-satellite service): The reception of *emissions* from a *space station* in the *broadcasting-satellite service* by simple domestic installations and in particular those possessing small antennae.
- 124** 5.15 *Community Reception* (in the broadcasting-satellite service): The reception of *emissions* from a *space station* in the *broadcasting-satellite service* by receiving equipment, which in some cases may be complex and have antennae larger than those used for *individual reception*, and intended for use:
- by a group of the general public at one location; or
 - through a distribution system covering a limited area.
- 125** 5.16 *Telemetry*: The use of *telecommunication* for automatically indicating or recording measurements at a distance from the measuring instrument.

- 126 5.17 *Radiotelemetry: Telemetry by means of radio waves.*
- 127 5.18 *Space Telemetry:* The use of *telemetry* for the transmission from a *space station* of results of measurements made in a *spacecraft*, including those relating to the functioning of the *spacecraft*.
- 128 5.19 *Telecommand:* The use of *telecommunication* for the transmission of signals to initiate, modify or terminate functions of equipment at a distance.
- 129 5.20 *Space Telecommand:* The use of *radiocommunication* for the transmission of signals to a *space station* to initiate, modify or terminate functions of equipment on an associated space object, including the *space station*.
- 130 5.21 *Space Tracking:* Determination of the *orbit*, velocity or instantaneous position of an object in space by means of *radiodetermination*, excluding *primary radar*, for the purpose of following the movement of the object.

Section VI. Characteristics of Emissions and Radio Equipment

- 131 6.1 *Radiation:* The outward flow of energy from any source in the form of *radio waves*.
- 132 6.2 *Emission: Radiation* produced, or the production of *radiation*, by a radio transmitting *station*.

For example, the energy radiated by the local oscillator of a radio receiver would not be an emission but a *radiation*.

- 133 6.3 *Class of Emission:* The set of characteristics of an *emission*, designated by standard symbols, e.g. type of modulation of the main

carrier, modulating signal, type of information to be transmitted, and also, if appropriate, any additional signal characteristics.

- 134** 6.4 *Single-Sideband Emission*: An amplitude modulated *emission* with one sideband only.
- 135** 6.5 *Full Carrier Single-Sideband Emission*: A *single-sideband emission* without reduction of the carrier.
- 136** 6.6 *Reduced Carrier Single-Sideband Emission*: A *single-sideband emission* in which the degree of carrier suppression enables the carrier to be reconstituted and to be used for demodulation.
- 137** 6.7 *Suppressed Carrier Single-Sideband Emission*: A *single-sideband emission* in which the carrier is virtually suppressed and not intended to be used for demodulation.
- 138** 6.8 *Out-of-band Emission**: *Emission* on a frequency or frequencies immediately outside the *necessary bandwidth* which results from the modulation process, but excluding *spurious emissions*.

* The terms associated with the definitions given by Nos. **138**, **139** and **140** shall be expressed in the working languages as follows:

Numbers	In French	In English	In Spanish
138 (6.8)	Emission hors bande	Out-of-band emission	Emisión fuera de banda
139 (6.9)	Rayonnement non essentiel	Spurious emission	Emisión no esencial
140 (6.10)	Rayonnements non désirés	Unwanted emissions	Emisiones no deseadas

- 139** 6.9 *Spurious Emission**: Emission on a frequency or frequencies which are outside the *necessary bandwidth* and the level of which may be reduced without affecting the corresponding transmission of information. Spurious emissions include harmonic *emissions*, parasitic *emissions*, intermodulation products and frequency conversion products, but exclude *out-of-band emissions*.
- 140** 6.10 *Unwanted Emissions**: Consist of *spurious emissions* and *out-of-band emissions*.
- 141** 6.11 *Assigned Frequency Band*: The frequency band within which the *emission* of a *station* is authorized; the width of the band equals the *necessary bandwidth* plus twice the absolute value of the *frequency tolerance*. Where *space stations* are concerned, the assigned frequency band includes twice the maximum Doppler shift that may occur in relation to any point of the Earth's surface.
- 142** 6.12 *Assigned Frequency*: The centre of the frequency band assigned to a *station*.

* The terms associated with the definitions given by Nos. **138**, **139** and **140** shall be expressed in the working languages as follows:

Numbers	In French	In English	In Spanish
138 (6.8)	Emission hors bande	Out-of-band emission	Emisión fuera de banda
139 (6.9)	Rayonnement non essentiel	Spurious emission	Emisión no esencial
140 (6.10)	Rayonnements non désirés	Unwanted emissions	Emisiones no deseadas

- 143** 6.13 *Characteristic Frequency*: A frequency which can be easily identified and measured in a given *emission*.

A carrier frequency may, for example, be designated as the characteristic frequency.

- 144** 6.14 *Reference Frequency*: A frequency having a fixed and specified position with respect to the *assigned frequency*. The displacement of this frequency with respect to the *assigned frequency* has the same absolute value and sign that the displacement of the *characteristic frequency* has with respect to the centre of the frequency band occupied by the *emission*.

- 145** 6.15 *Frequency Tolerance*: The maximum permissible departure by the centre frequency of the frequency band occupied by an *emission* from the *assigned frequency* or, by the *characteristic frequency* of an *emission* from the *reference frequency*.

The frequency tolerance is expressed in parts in 10^6 or in hertz.

- 146** 6.16 *Necessary Bandwidth*: For a given *class of emission*, the width of the frequency band which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions.

- 147** 6.17 *Occupied Bandwidth*: The width of a frequency band such that, below the lower and above the upper frequency limits, the *mean powers* emitted are each equal to a specified percentage $\beta/2$ of the total *mean power* of a given *emission*.

Unless otherwise specified by the CCIR for the appropriate *class of emission*, the value of $\beta/2$ should be taken as 0.5%.

- 148** 6.18 *Right-Hand (clockwise) Polarized Wave*: An elliptically- or circularly-polarized wave, in which the electric field vector, observed in any fixed plane, normal to the direction of propagation, whilst looking in the direction of propagation, rotates with time in a right-hand or clockwise direction.

149 6.19 *Left-Hand (anticlockwise) Polarized Wave*: An elliptically- or circularly-polarized wave, in which the electric field vector, observed in any fixed plane, normal to the direction of propagation, whilst looking in the direction of propagation, rotates with time in a left-hand or anticlockwise direction.

150 6.20 *Power*: Whenever the power of a radio transmitter, etc. is referred to it shall be expressed in one of the following forms, according to the *class of emission*, using the arbitrary symbols indicated:

- *peak envelope power* (PX or pX);
- *mean power* (PY or pY);
- *carrier power* (PZ or pZ).

For different *classes of emission*, the relationships between *peak envelope power*, *mean power* and *carrier power*, under the conditions of normal operation and of no modulation, are contained in CCIR Recommendations which may be used as a guide.

For use in formulae, the symbol p denotes power expressed in watts and the symbol P denotes power expressed in decibels relative to a reference level.

151 6.21 *Peak Envelope Power* (of a radio transmitter): The average power supplied to the antenna transmission line by a transmitter during one radio frequency cycle at the crest of the modulation envelope taken under normal operating conditions.

152 6.22 *Mean Power* (of a radio transmitter): The average power supplied to the antenna transmission line by a transmitter during an interval of time sufficiently long compared with the lowest frequency encountered in the modulation taken under normal operating conditions.

153 6.23 *Carrier Power* (of a radio transmitter): The average power supplied to the antenna transmission line by a transmitter during one radio frequency cycle taken under the condition of no modulation.

154 6.24 *Gain of an Antenna*: The ratio, usually expressed in decibels, of the power required at the input of a loss-free reference antenna to the power supplied to the input of the given antenna to produce, in a given direction, the same field strength or the same power flux-density at the same distance. When not specified otherwise, the gain refers to the direction of maximum *radiation*. The gain may be considered for a specified polarization.

Depending on the choice of the reference antenna a distinction is made between:

- a) absolute or isotropic gain (G_i), when the reference antenna is an isotropic antenna isolated in space;
- b) gain relative to a half-wave dipole (G_d), when the reference antenna is a half-wave dipole isolated in space whose equatorial plane contains the given direction;
- c) gain relative to a short vertical antenna (G_v), when the reference antenna is a linear conductor, much shorter than one quarter of the wavelength, normal to the surface of a perfectly conducting plane which contains the given direction.

155 6.25 *Equivalent Isotropically Radiated Power (e.i.r.p.)*: The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna (*absolute or isotropic gain*).

156 6.26 *Effective Radiated Power (e.r.p.)* (in a given direction): The product of the power supplied to the antenna and its *gain relative to a half-wave dipole* in a given direction.

- 157 6.27 *Effective Monopole Radiated Power (e.m.r.p.)* (in a given direction): The product of the power supplied to the antenna and its *gain relative to a short vertical antenna* in a given direction.
- 158 6.28 *Tropospheric Scatter*: The propagation of *radio waves* by scattering as a result of irregularities or discontinuities in the physical properties of the troposphere.
- 159 6.29 *Ionospheric Scatter*: The propagation of *radio waves* by scattering as a result of irregularities or discontinuities in the ionization of the ionosphere.

Section VII. Frequency Sharing

- 160 7.1 *Interference*: The effect of unwanted energy due to one or a combination of *emissions, radiations*, or inductions upon reception in a *radiocommunication* system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy.
- 161 7.2 *Permissible Interference*¹: Observed or predicted *interference* which complies with quantitative *interference* and sharing criteria contained in these Regulations or in CCIR Recommendations or in special agreements as provided for in these Regulations.
- 161.1 ¹ The terms “permissible interference” and “accepted interference” are used in the coordination of frequency assignments between administrations.
- 162 7.3 *Accepted Interference*² : *Interference* at a higher level than that defined as *permissible interference* and which has been agreed upon between two or more administrations without prejudice to other administrations.
- 162.1 ² The terms “permissible interference” and “accepted interference” are used in the coordination of frequency assignments between administrations.

- 163** 7.4 *Harmful Interference*: Interference which endangers the functioning of a *radionavigation service* or of other *safety services* or seriously degrades, obstructs, or repeatedly interrupts a *radiocommunication service* operating in accordance with these Regulations.
- 164** 7.5 *Protection Ratio (R.F.)*: The minimum value of the wanted-to-unwanted signal ratio, usually expressed in decibels, at the receiver input, determined under specified conditions such that a specified reception quality of the wanted signal is achieved at the receiver output.
- 165** 7.6 *Coordination Area*: The area associated with an *earth station* outside of which a *terrestrial station* sharing the same frequency band neither causes nor is subject to interfering *emissions* greater than a permissible level.
- 166** 7.7 *Coordination Contour*: The line enclosing the *coordination area*.
- 167** 7.8 *Coordination Distance*: Distance on a given azimuth from an *earth station* beyond which a *terrestrial station* sharing the same frequency band neither causes nor is subject to interfering *emissions* greater than a permissible level.
- 168** 7.9 *Equivalent Satellite Link Noise Temperature*: The noise temperature referred to the output of the receiving antenna of the *earth station* corresponding to the radio frequency noise power which produces the total observed noise at the output of the *satellite link* excluding noise due to *interference* coming from *satellite links* using other *satellites* and from terrestrial systems.
- 168A** 7.10 *Effective Boresight Area* (of a steerable satellite beam): An
Orb-88 area on the surface of the Earth within which the boresight of a *steerable satellite beam* is intended to be pointed.

There may be more than one unconnected effective boresight area to which a single *steerable satellite beam* is intended to be pointed.

- 168B** 7.11 *Effective Antenna Gain Contour* (of a steerable satellite
Orb-88 beam): An envelope of antenna gain contours resulting from moving the boresight of a *steerable satellite beam* along the limits of the *effective boresight area*.

Section VIII. Technical Terms Relating to Space

- 169** 8.1 *Deep Space*: Space at distances from the Earth equal to, or
Orb-88 greater than, 2×10^6 kilometres.
- 170** 8.2 *Spacecraft*: A man-made vehicle which is intended to go beyond the major portion of the Earth's atmosphere.
- 171** 8.3 *Satellite*: A body which revolves around another body of preponderant mass and which has a motion primarily and permanently determined by the force of attraction of that other body.
- 172** 8.4 *Active Satellite*: A *satellite* carrying a *station* intended to transmit or retransmit radiocommunication signals.
- 173** 8.5 *Reflecting Satellite*: A *satellite* intended to reflect radio-communication signals.
- 174** 8.6 *Active Sensor*: A measuring instrument in the *earth exploration-satellite service* or in the *space research service* by means of which information is obtained by transmission and reception of *radio waves*.
- 175** 8.7 *Passive Sensor*: A measuring instrument in the *earth exploration-satellite service* or in the *space research service* by means of which information is obtained by reception of *radio waves* of natural origin.
- 176** 8.8 *Orbit*: The path, relative to a specified frame of reference, described by the centre of mass of a *satellite* or other object in space subjected primarily to natural forces, mainly the force of gravity.

- 177 8.9 *Inclination of an Orbit* (of an earth satellite): The angle determined by the plane containing the *orbit* and the plane of the Earth's equator.
- 178 8.10 *Period* (of a satellite): The time elapsing between two consecutive passages of a *satellite* through a characteristic point on its *orbit*.
- 179 8.11 *Altitude of the Apogee or of the Perigee*: The altitude of the apogee or perigee above a specified reference surface serving to represent the surface of the Earth.
- 180 8.12 *Geosynchronous Satellite*: An earth *satellite* whose period of revolution is equal to the period of rotation of the Earth about its axis.
- 181 8.13 *Geostationary Satellite*: A *geosynchronous satellite* whose circular and direct *orbit* lies in the plane of the Earth's equator and which thus remains fixed relative to the Earth; by extension, a *satellite* which remains approximately fixed relative to the Earth.
- 182 8.14 *Geostationary-Satellite Orbit*: The *orbit* of a *geosynchronous satellite* whose circular and direct *orbit* lies in the plane of the Earth's equator.
- WARC-92
- 183 8.15 *Steerable Satellite Beam*: A *satellite* antenna beam that can be re-pointed.
- Orb-88
- 184 to NOT allocated.
- 207

ARTICLE 2

**Nomenclature of the Frequency and Wavelength Bands
Used in Radiocommunication**

208 § 1. The radio spectrum shall be subdivided into nine frequency bands, which shall be designated by progressive whole numbers in accordance with the following table. As the unit of frequency is the hertz (Hz), frequencies shall be expressed:

- in kilohertz (kHz), up to and including 3 000 kHz;
- in megahertz (MHz), above 3 MHz, up to and including 3 000 MHz;
- in gigahertz (GHz), above 3 GHz, up to and including 3 000 GHz.

For bands above 3 000 GHz, i.e. centimillimetric waves, micrometric waves and decimicrometric waves, it would be appropriate to use terahertz (THz).

However, where adherence to these provisions would introduce serious difficulties, for example in connection with the notification and registration of frequencies, the lists of frequencies and related matters, reasonable departures may be made.

Band Number	Symbols	Frequency Range (lower limit exclusive, upper limit inclusive)	Corresponding Metric Subdivision	Metric Abbreviations for the Bands
4	VLF	3 to 30 kHz	Myriametric waves	B.Mam
5	LF	30 to 300 kHz	Kilometric waves	B.km
6	MF	300 to 3 000 kHz	Hectometric waves	B.hm
7	HF	3 to 30 MHz	Decametric waves	B.dam
8	VHF	30 to 300 MHz	Metric waves	B.m
9	UHF	300 to 3 000 MHz	Decimetric waves	B.dm
10	SHF	3 to 30 GHz	Centimetric waves	B.cm
11	EHF	30 to 300 GHz	Millimetric waves	B.mm
12		300 to 3 000 GHz	Decimillimetric waves	

Note 1: "Band Number N" (N = band number) extends from 0.3×10^N Hz to 3×10^N Hz.

Note 2: Prefix: k = kilo (10^3), M = mega (10^6), G = giga (10^9), T = tera (10^{12}).

209 § 2. In communications between administrations and the
ITU, no names, symbols or abbreviations should be used for the
various frequency bands other than those specified in No. **208**.

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to NOT allocated.
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ARTICLE 3

**Nomenclature of Dates and Times
Used in Radiocommunication**

- 235 § 1. Any date used in relation to radiocommunication shall
be according to the Gregorian Calendar.
- 236 § 2. If in a date the month is not indicated either in full or in
an abbreviated form, it shall be expressed in an all-numeric form
with the fixed sequence of figures, two of each representing the
day, month and year.
- 237 § 3. Whenever a date is used in connection with Coordinated
Universal Time (UTC), this date shall be that of the prime
meridian at the appropriate time, the prime meridian corre-
sponding to zero degrees geographical longitude.
- 238 § 4. Whenever a specified time is used in international
radiocommunication activities, UTC shall be applied, unless other-
wise indicated, and it shall be presented as a four-digit group
(0000-2359). The abbreviation UTC shall be used in all languages.
- 239 to
263 NOT allocated.

ARTICLE 4

Designation of Emissions

264 § 1. (1) Emissions shall be designated according to their necessary bandwidth and their classification.

265 (2) Examples of emissions designated in accordance with this Article are given in Appendix 6, Part B. Further examples may appear in the latest CCIR Recommendations. These examples may also be published in the Preface to the International Frequency List.

Section I. Necessary Bandwidth

266 § 2. (1) The necessary bandwidth, as defined in No. 146 and determined in accordance with Appendix 6, Part B, shall be expressed by three numerals and one letter. The letter occupies the position of the decimal point and represents the unit of bandwidth. The first character shall be neither zero nor K, M or G.

267 (2) Necessary bandwidths ¹:

between 0.001 and 999 Hz shall be expressed in Hz (letter H);
 between 1.00 and 999 kHz shall be expressed in kHz (letter K);
 between 1.00 and 999 MHz shall be expressed in MHz (letter M);
 between 1.00 and 999 GHz shall be expressed in GHz (letter G).

Section II. Classification

268 § 3. The class of emission is a set of characteristics conforming to No. 269.

267.1 ¹ Examples:

0.002 Hz = H002	6 kHz = 6K00	1.25 MHz = 1M25
0.1 Hz = H100	12.5 kHz = 12K5	2 MHz = 2M00
25.3 Hz = 25H3	180.4 kHz = 180K	10 MHz = 10M0
400 Hz = 400H	180.5 kHz = 181K	202 MHz = 202M
2.4 kHz = 2K40	180.7 kHz = 181K	5.65 GHz = 5G65

- 269 § 4. Emissions shall be classified and symbolized according to their basic characteristics as given in No. 270 and any optional additional characteristics as provided for in Appendix 6, Part A.

- 270** § 5. The basic characteristics (see Nos. 271, 272, 273) are:

- (1) first symbol – type of modulation of the main carrier;
- (2) second symbol – nature of signal(s) modulating the main carrier;
- (3) third symbol – type of information to be transmitted.

Modulation used only for short periods and for incidental purposes (such as, in many cases, for identification or calling) may be ignored provided that the necessary bandwidth as indicated is not thereby increased.

- 271** § 6. (1) First symbol – type of modulation of the main carrier

- (1.1) Emission of an unmodulated carrier N

- (1.2) Emission in which the main carrier is amplitude-modulated (including cases where sub-carriers are angle-modulated)

- (1.2.1) Double-sideband
- A

- (1.2.2) Single-sideband, full carrier H

- (1.2.3) Single-sideband, reduced or variable level carrier R

- (1.2.4) Single-sideband, suppressed carrier J

- (1.2.5) Independent sidebands
- B

- (1.2.6) Vestigial sideband C

- (1.3) Emission in which the main carrier is angle-modulated
 - (1.3.1) Frequency modulation F
 - (1.3.2) Phase modulation G
- (1.4) Emission in which the main carrier is amplitude- and angle-modulated either simultaneously or in a pre-established sequence D
- (1.5) Emission of pulses ¹
 - (1.5.1) Sequence of unmodulated pulses P
 - (1.5.2) A sequence of pulses
 - (1.5.2.1) modulated in amplitude K
 - (1.5.2.2) modulated in width/duration L
 - (1.5.2.3) modulated in position/phase M
 - (1.5.2.4) in which the carrier is angle-modulated during the period of the pulse Q
 - (1.5.2.5) which is a combination of the foregoing or is produced by other means V
- (1.6) Cases not covered above, in which an emission consists of the main carrier modulated, either simultaneously or in a pre-established sequence, in a combination of two or more of the following modes: amplitude, angle, pulse W
- (1.7) Cases not otherwise covered X

¹ Emissions where the main carrier is directly modulated by a signal which has been coded into quantized form (e.g. pulse code modulation) should be designated under (1.2) or (1.3).

272	(2) Second symbol — nature of signal(s) modulating the main carrier	
	(2.1) No modulating signal	0
	(2.2) A single channel containing quantized or digital information without the use of a modulating sub-carrier ¹	1
	(2.3) A single channel containing quantized or digital information with the use of a modulating sub-carrier ¹	2
	(2.4) A single channel containing analogue information	3
	(2.5) Two or more channels containing quantized or digital information	7
	(2.6) Two or more channels containing analogue information	8
	(2.7) Composite system with one or more channels containing quantized or digital information, together with one or more channels containing analogue information	9
	(2.8) Cases not otherwise covered	X
273	(3) Third symbol — type of information to be transmitted ²	
	(3.1) No information transmitted	N
	(3.2) Telegraphy — for aural reception	A
	(3.3) Telegraphy — for automatic reception	B
	(3.4) Facsimile	C
	(3.5) Data transmission, telemetry, telecommand	D

272.1

¹ This excludes time-division multiplex.

273.1

² In this context the word “information” does not include information of a constant, unvarying nature such as is provided by standard frequency emissions, continuous wave and pulse radars, etc.

(3.6) Telephony (including sound broadcasting)	E
(3.7) Television (video)	F
(3.8) Combination of the above	W
(3.9) Cases not otherwise covered	X

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to
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NOT allocated.

CHAPTER II

ARTICLE 5

Technical Characteristics of Stations

- 299 § 1. (1) The choice and performance of equipment to be used in
a station and any emissions therefrom shall satisfy the provisions
of these Regulations.
- 300 (2) Also, as far as is compatible with practical considera-
tions, the choice of transmitting, receiving and measuring equip-
ment shall be based on the most recent advances in the technique
as indicated, *inter alia*, in CCIR Recommendations.
- 301 § 2. Transmitting and receiving equipment intended to be
used in a given part of the frequency spectrum should be designed
to take into account the technical characteristics of transmitting
and receiving equipment likely to be employed in neighbouring
and other parts of the spectrum, provided that all technically and
economically justifiable measures have been taken to reduce the
level of unwanted emissions from the latter transmitting equipment
and to reduce the susceptibility to interference of the latter
receiving equipment.
- 302 § 3. To the maximum extent possible, equipment to be used
in a station should apply signal processing methods which enable
the most efficient use of the frequency spectrum in accordance with
the relevant CCIR Recommendations. These methods include, *inter
alia*, certain bandwidth expansion techniques, and in particular, in
amplitude-modulation systems, the use of the single-sideband tech-
nique.
- 303 § 4. (1) Transmitting stations shall conform to the frequency
tolerances specified in Appendix 7.
- 304 (2) Transmitting stations shall conform to the maximum
permitted spurious emission power levels specified in Appendix 8.

305 (3) Transmitting stations shall conform to the maximum permitted power levels for out-of-band emissions specified for certain services and classes of emission in the present Regulations, e.g. Appendices 17 and 27 Aer2 *. In the absence of such specified maximum permitted power levels transmitting stations shall, to the maximum extent possible, satisfy the requirements relating to the limitation of the out-of-band emissions specified in the most recent CCIR Recommendations.

306 (4) Moreover, every effort should be made to keep frequency tolerances and levels of unwanted emissions at the lowest values which the state of the technique and the nature of the service permit.

307 § 5. (1) The bandwidths of emissions also shall be such as to ensure the most efficient utilization of the spectrum; in general this requires that bandwidths be kept at the lowest values which the state of the technique and the nature of the service permit. Appendix 6 is provided as a guide for the determination of the necessary bandwidth.

308 (2) Where bandwidth-expansion techniques are used, the minimum spectral power density consistent with efficient spectrum utilization shall be employed.

309 § 6. (1) Wherever necessary for efficient spectrum use, the receivers used by any service should comply as far as possible with the frequency tolerances of the transmitters of that service, due regard being paid to the Doppler effect where appropriate.

310 (2) Receiving stations should use equipment with technical characteristics appropriate for the class of emission concerned; in particular, selectivity should be appropriate having regard to No. 307 on the bandwidths of emissions.

* *Note by the General Secretariat:* See No. 5189 and Resolution 400.

- 311 (3) The performance characteristics of receivers should be
adequate to ensure that they do not suffer from interference due to
transmitters situated at a reasonable distance and which operate in
accordance with these Regulations.
- 312 § 7. To ensure compliance with these Regulations, adminis-
trations shall arrange for frequent checks to be made of the
emissions of stations under their jurisdiction. For this purpose,
they shall use the means indicated in Article 20, if required. The
technique of measurements and the intervals of measurements to
be employed shall be, as far as is practicable, in accordance with
the most recent CCIR Recommendations.
- 313 § 8. The use of damped wave emissions is forbidden in all
stations.
- 314
to
338 NOT allocated.

CHAPTER III

Frequencies

ARTICLE 6

General Rules for the Assignment and Use of Frequencies

- 339 § 1. Members shall endeavour to limit the number of frequencies and the spectrum space used to the minimum essential to provide in a satisfactory manner the necessary services. To that end they shall endeavour to apply the latest technical advances as soon as possible ¹.
- 340 § 2. Members undertake that in assigning frequencies to stations which are capable of causing harmful interference to the services rendered by the stations of another country, such assignments are to be made in accordance with the Table of Frequency Allocations and other provisions of these Regulations.
- 341 § 3. Any new assignment or any change of frequency or other basic characteristic of an existing assignment (see Appendix 1 or Appendix 3) shall be made in such a way as to avoid causing harmful interference to services rendered by stations using frequencies assigned in accordance with the Table of Frequency Allocations in this Chapter and the other provisions of these Regulations, the characteristics of which assignments are recorded in the Master International Frequency Register.
- 342 § 4. Administrations of the Members shall not assign to a station any frequency in derogation of either the Table of Frequency Allocations given in this Chapter or the other provisions of these Regulations, except on the express condition that harmful interference shall not be caused to services carried on by stations operating in accordance with the provisions of the Convention and of these Regulations.

339.1 ¹ No. 130 of the International Telecommunication Convention (Malaga-Torremolinos, 1973).

- 343** § 5. The frequency assigned to a station of a given service shall be separated from the limits of the band allocated to this service in such a way that, taking account of the frequency band assigned to a station, no harmful interference is caused to services to which frequency bands immediately adjoining are allocated.
- 344** § 6. For the purpose of resolving cases of harmful interference, the radio astronomy service shall be treated as a radiocommunication service. However, protection from services in other bands shall be afforded the radio astronomy service only to the extent that such services are afforded protection from each other.
- 345** § 7. For the purpose of resolving cases of harmful interference, the space research (passive) service and the earth exploration-satellite (passive) service shall be afforded protection from different services in other bands only to the extent that these different services are protected from each other.
- 346** § 8. Where, in adjacent Regions or sub-Regions, a band of frequencies is allocated to different services of the same category (see Sections I and II of Article 8), the basic principle is the equality of right to operate. Accordingly, the stations of each service in one Region or sub-Region must operate so as not to cause harmful interference to services in the other Regions or sub-Regions.
- 347** § 9. No provision of these Regulations prevents the use by a station in distress of any means of radiocommunication at its disposal to attract attention, make known its condition and location, and obtain assistance.
- 348** § 10. No provision of these Regulations prevents the use by a station, in the exceptional circumstances described in No. 347, of any means of radiocommunication at its disposal to assist a station in distress.
- 349**
to
373 NOT allocated.

ARTICLE 7

Special Agreements

- 374 § 1. Two or more Members may, under the provisions for special arrangements in Article 31 of the Convention, conclude special agreements regarding the sub-allocation of bands of frequencies to the appropriate services of the participating countries.
- 375 § 2. Two or more Members may, under the provisions for special arrangements in Article 31 of the Convention, conclude special agreements, as a result of a conference to which all those Members concerned have been invited, regarding the assignment of frequencies to those of their stations which participate in one or more specific services within the frequency bands allocated to these services by Article 8, either below 5 060 kHz or above 27 500 kHz, but not between those limits.
- 376 § 3. Members may, under the provisions for special arrangements in Article 31 of the Convention, conclude, on a worldwide basis, and as a result of a conference to which all Members have been invited, special agreements concerning the assignment of frequencies to those of their stations participating in a specific service, on condition that such assignments are within the frequency bands allocated exclusively to that service in Article 8.
- 377 § 4. Special agreements concluded in accordance with the provisions of Nos. 374 to 376 shall not be in conflict with any of the provisions of these Regulations.
- 378 § 5. The Secretary-General shall be informed, in advance, of any conference to be convened to conclude such an agreement; he shall also be informed of the terms of the agreement when concluded; and he shall inform the Members of the existence of such agreements.

379 § 6. In accordance with the provisions of Article 10, the International Frequency Registration Board may be invited to send representatives to participate in an advisory capacity in the preparation of these agreements and in the proceedings of the conferences, it being recognized that in the majority of cases such participation is desirable.

380 § 7. If, besides the action they may take in accordance with No. 375, two or more Members coordinate the use of individual frequencies in any of the frequency bands covered by Article 8 before notifying the frequency assignments concerned, they shall in all appropriate cases inform the Board of such coordination.

381
to
390 NOT allocated.

ARTICLE 8

Frequency Allocations**Introduction**

391 § 1. In all documents of the Union where the terms *allocation*, *allotment* and *assignment* are to be used, they shall have the meaning given them in Nos. 17 to 19, the terms used in the three working languages being as follows:

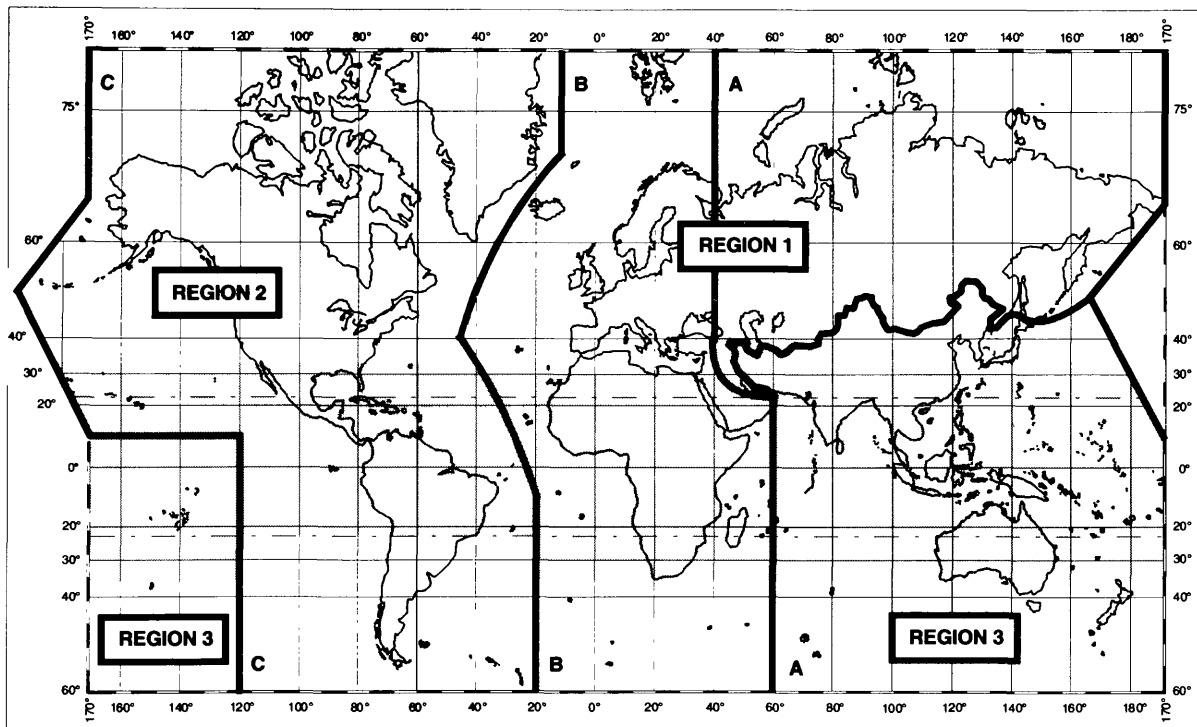
Frequency distribution to:	French	English	Spanish
Services	Attribution (attribuer)	Allocation (to allocate)	Atribución (atribuir)
Areas or countries	Allotissement (allotir)	Allotment (to allot)	Adjudicación (adjudicar)
Stations	Assignment (assigner)	Assignment (to assign)	Asignación (asignar)

Section I. Regions and Areas

392 § 2. For the allocation of frequencies the world has been divided into three Regions¹ as shown on the following map and described in Nos. 393 to 399:

392.1

¹ It should be noted that where the words "regions" or "regional" are without a capital "R" in these Regulations, they do not relate to the three Regions here defined for purposes of frequency allocation.



The shaded part represents the Tropical Zones as defined in Nos. 406 to 410 and 411.

393 *Region 1:*

Region 1 includes the area limited on the east by line A (lines A, B and C are defined below) and on the west by line B, excluding any of the territory of Iran which lies between these limits. It also includes that part of the territory of Turkey and the Union of Soviet Socialist Republics lying outside of these limits, the territory of the Mongolian People's Republic, and the area to the north of the U.S.S.R. which lies between lines A and C.

394 *Region 2:*

Region 2 includes the area limited on the east by line B and on the west by line C.

395 *Region 3:*

Region 3 includes the area limited on the east by line C and on the west by line A, except the territories of the Mongolian People's Republic, Turkey, the territory of the U.S.S.R. and the area to the north of the U.S.S.R. It also includes that part of the territory of Iran lying outside of those limits.

396 The lines A, B and C are defined as follows:

397 *Line A:*

Line A extends from the North Pole along meridian 40° East of Greenwich to parallel 40° North; thence by great circle arc to the intersection of meridian 60° East and the Tropic of Cancer; thence along the meridian 60° East to the South Pole.

398 *Line B:*

Line B extends from the North Pole along meridian 10° West of Greenwich to its intersection with parallel 72° North; thence by great circle arc to the intersection of meridian 50° West and parallel 40° North; thence by great circle arc to the intersection of meridian 20° West and parallel 10° South; thence along meridian 20° West to the South Pole.

399 *Line C:*

Line C extends from the North Pole by great circle arc to the intersection of parallel 65° 30' North with the international boundary in Bering Strait; thence by great circle arc to the intersection of meridian 165° East of Greenwich and parallel 50° North; thence by great circle arc to the intersection of meridian 170° West and parallel 10° North; thence along parallel 10° North to its intersection with meridian 120° West; thence along meridian 120° West to the South Pole.

400 § 3 For the purposes of these Regulations, the term "African Broadcasting Area" means:

401 a) African countries, parts of countries, territories and groups of territories situated between the parallels 40° South and 30° North;

402 b) islands in the Indian Ocean west of meridian 60° East of Greenwich, situated between the parallel 40° South and the great circle arc joining the points 45° East, 11° 30' North and 60° East, 15° North;

403 c) islands in the Atlantic Ocean east of line B defined in No. 398 of these Regulations, situated between the parallels 40° South and 30° North.

404 § 4. The "European Broadcasting Area" is bounded on the west by the western boundary of Region 1, on the east by the meridian 40° East of Greenwich and on the south by the parallel 30° North so as to include the western part of the U.S.S.R., the northern part of Saudi Arabia and that part of those countries bordering the Mediterranean within these limits. In addition, Iraq, Jordan and that

part of the territory of Turkey lying outside the above limits are included in the European Broadcasting Area.

405 § 5. The “European Maritime Area” is bounded to the north by
Mob-87 a line extending along parallel 72° North from its intersection with
 meridian 55° East of Greenwich to its intersection with meridian
 5° West, then along meridian 5° West to its intersection with parallel
 67° North, thence along parallel 67° North to its intersection with
 meridian 32° West; to the west by a line extending along meridian
 32° West to its intersection with parallel 30° North; to the south by a
 line extending along parallel 30° North to its intersection with
 meridian 43° East; to the east by a line extending along meridian
 43° East to its intersection with parallel 60° North, thence along
 parallel 60° North to its intersection with meridian 55° East and
 thence along meridian 55° East to its intersection with parallel
 72° North.

406 § 6. (1) The “Tropical Zone” (see map in No. 392) is defined as:

407 a) the whole of that area in Region 2 between the Tropics of
 Cancer and Capricorn;

408 b) the whole of that area in Regions 1 and 3 contained
 between the parallels 30° North and 35° South with the
 addition of:

409 1) The area contained between the meridians 40° East and
 80° East of Greenwich and the parallels 30° North and
 40° North;

410 2) that part of Libya north of parallel 30° North.

411 (2) In Region 2, the Tropical Zone may be extended to paral-
 lel 33° North, subject to special agreements between the countries
 concerned in that Region (see Article 7).

- 412** § 7. A sub-Region is an area consisting of two or more countries in the same Region.

Section II. Categories of Services and Allocations

413 *Primary, Permitted and Secondary Services*

- 414** § 8. (1) Where, in a box of the Table in Section IV of this Article, a band is indicated as allocated to more than one service, either on a worldwide or Regional basis, such services are listed in the following order:

- 415** a) services the names of which are printed in “capitals” (example: FIXED); these are called “primary” services;
- 416** b) services the names of which are printed in “capitals between oblique strokes” (example: /RADIOLOCATION/); these are called “permitted” services (see No. **419**);
- 417** c) services the names of which are printed in “normal characters” (example: Mobile); these are called “secondary” services (see Nos. **420** to **423**).

- 418** (2) Additional remarks shall be printed in normal characters (example: MOBILE except aeronautical mobile).

- 419** (3) Permitted and primary services have equal rights, except that, in the preparation of frequency plans, the primary service, as compared with the permitted service, shall have prior choice of frequencies.

- 420** (4) Stations of a secondary service:

- 421** a) shall not cause harmful interference to stations of primary or permitted services to which frequencies are already assigned or to which frequencies may be assigned at a later date;

- 422** *b)* cannot claim protection from harmful interference from stations of a primary or permitted service to which frequencies are already assigned or may be assigned at a later date;
- 423** *c)* can claim protection, however, from harmful interference from stations of the same or other secondary service(s) to which frequencies may be assigned at a later date.
- 424** (5) Where a band is indicated in a footnote of the Table as allocated to a service “on a secondary basis” in an area smaller than a Region, or in a particular country, this is a secondary service (see Nos. **420** to **423**).
- 425** (6) Where a band is indicated in a footnote of the Table as allocated to a service “on a primary basis”, or “on a permitted basis” in an area smaller than a Region, or in a particular country, this is a primary service or a permitted service only in that area or country (see No. **419**).
- 426** *Additional Allocations*
- 427** § 9. (1) Where a band is indicated in a footnote of the Table as “also allocated” to a service in an area smaller than a Region, or in a particular country, this is an “additional” allocation, i.e. an allocation which is added in this area or in this country to the service or services which are indicated in the Table (see No. **428**).
- 428** (2) If the footnote does not include any restriction on the service or services concerned apart from the restriction to operate only in a particular area or country, stations of this service or these services shall have equality of right to operate with stations of the other primary service or services indicated in the Table.

429 (3) If restrictions are imposed on an additional allocation in addition to the restriction to operate only in a particular area or country, this is indicated in the footnote of the Table.

430 *Alternative Allocations*

431 § 10. (1) Where a band is indicated in a footnote of the Table as “allocated” to one or more services in an area smaller than a Region, or in a particular country, this is an “alternative” allocation, i.e. an allocation which replaces, in this area or in this country, the allocation indicated in the Table (see No. 432).

432 (2) If the footnote does not include any restriction on stations of the service or services concerned, apart from the restriction to operate only in a particular area or country, these stations of such a service or services shall have an equality of right to operate with stations of the primary service or services, indicated in the Table, to which the band is allocated in other areas or countries.

433 (3) If restrictions are imposed on stations of a service to which an alternative allocation is made, in addition to the restriction to operate only in a particular country or area, this is indicated in the footnote.

434 *Miscellaneous Provisions*

435 § 11. (1) Where it is indicated in these Regulations that a service may operate in a specific frequency band subject to not causing harmful interference, this means also that this service cannot claim protection from harmful interference caused by other services to which the band is allocated under Chapter III of these Regulations.

436 (2) Except if otherwise specified in a footnote, the term “fixed service”, where appearing in Section IV of this Article, does not include systems using ionospheric scatter propagation.

Section III. Description of the Table of Frequency Allocations

- 437 § 12. (1) The heading of the Table in Section IV of this Article
includes three columns, each of which corresponds to one of the
Regions (see No. 392). Where an allocation occupies the whole of the
width of the Table or only one or two of the three columns, this is a
worldwide allocation or a Regional allocation, respectively.
- 438 (2) The frequency band referred to in each allocation is
indicated in the left-hand top corner of the part of the Table con-
cerned.
- 439 (3) Within each of the categories specified in Nos. 415 to 417,
services are listed in alphabetical order according to the French
language. The order of listing does not indicate relative priority
within each category.
- 440 (4) In the case where there is a parenthetical addition to an
allocation in the Table, that service allocation is restricted to the type
of operation so indicated.
- 441 (5) The footnote references which appear in the Table below
the allocated service or services apply to the whole of the allocation
concerned.
- 442 (6) The footnote references which appear to the right of the
name of a service are applicable only to that particular service.
- 443 (7) In certain cases, the names of countries appearing in the
footnotes have been simplified in order to shorten the text.

Section IV. Table of Frequency Allocations
(See No. 208)

kHz
9 – 70

Allocation to Services		
Region 1	Region 2	Region 3
Below 9	(not allocated) 444 445	
9 – 14	RADIONAVIGATION	
14 – 19.95	FIXED MARITIME MOBILE 448 446 447	
19.95 – 20.05	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	
20.05 – 70	FIXED MARITIME MOBILE 448 447 449	

- 444** Administrations authorizing the use of frequencies below 9 kHz shall ensure that no harmful interference is caused thereby to the services to which the bands above 9 kHz are allocated (see No. **1816**).
- 445** Administrations conducting scientific research using frequencies below 9 kHz are urged to advise other administrations that may be concerned in order that such research may be afforded all practicable protection from harmful interference.
- 446** *Additional allocation:* In Bulgaria, the German Democratic Republic, WARC-92 Czechoslovakia and the U.S.S.R., the band 14 - 17 kHz is also allocated to the radionavigation service on a permitted basis.
- 447** The stations of services to which the bands 14 - 19.95 kHz and 20.05 - WARC-92 70 kHz and in Region 1 also the bands 72 - 84 kHz and 86 - 90 kHz are allocated may transmit standard frequency and time signals. Such stations shall be afforded protection from harmful interference. In Bulgaria, Mongolia, Czechoslovakia and the U.S.S.R., the frequencies 25 kHz and 50 kHz will be used for this purpose under the same conditions.
- 448** The use of the bands 14 - 19.95 kHz, 20.05 - 70 kHz and 70 - 90 kHz Mob-87 (72 - 84 kHz and 86 - 90 kHz in Region 1) by the maritime mobile service is limited to coast radiotelegraph stations (A1A and F1B only). Exceptionally, the use of class J2B or J7B emissions is authorized subject to the necessary bandwidth not exceeding that normally used for class A1A or F1B emissions in the band concerned.
- 449** *Additional allocation:* In Bulgaria, Poland, the German Democratic WARC-92 Republic, Czechoslovakia and the U.S.S.R., the band 67 - 70 kHz is also allocated to the radionavigation service on a permitted basis.

kHz
70 – 110

Allocation to Services		
Region 1	Region 2	Region 3
70 – 72 RADIONAVIGATION 451	70 – 90 FIXED MARITIME MOBILE 448 MARITIME RADIO- NAVIGATION 451 Radiolocation	70 – 72 RADIONAVIGATION 451 Fixed Maritime Mobile 448 450
72 – 84 FIXED MARITIME MOBILE 448 RADIONAVIGATION 451 447		72 – 84 FIXED MARITIME MOBILE 448 RADIONAVIGATION 451
84 – 86 RADIONAVIGATION 451		84 – 86 RADIONAVIGATION 451 Fixed Maritime Mobile 448 450
86 – 90 FIXED MARITIME MOBILE 448 RADIONAVIGATION 447		86 – 90 FIXED MARITIME MOBILE 448 RADIONAVIGATION 451
90 – 110 RADIONAVIGATION 453 Fixed 453A 454		

- 450** *Different category of service:* In Bangladesh, Iran and Pakistan, the allocation of the bands 70 - 72 kHz and 84 - 86 kHz to the fixed and maritime mobile service is on a primary basis (see No. **425**).
- 451** In the bands 70 - 90 kHz (70 - 86 kHz in Region 1) and 110 - 130 kHz
Mob-87 (112 - 130 kHz in Region 1), pulsed radionavigation systems may be used on condition that they do not cause harmful interference to other services to which these bands are allocated.
- 452** In Region 2, the establishment and operation of stations in the maritime radionavigation service in the bands 70 - 90 kHz and 110 - 130 kHz shall be subject to agreement obtained under the procedure set forth in Article **14** with administrations whose services, operating in accordance with the Table, may be affected. However, stations of the fixed, maritime mobile and radiolocation services shall not cause harmful interference to stations in the maritime radionavigation service established under such agreements.
- 453** Administrations which operate stations in the radionavigation service in the band 90 - 110 kHz are urged to coordinate technical and operating characteristics in such a way as to avoid harmful interference to the services provided by these stations.
- 453A** In the band 90 - 110 kHz, the United Kingdom may continue to use its
Mob-87 coast radiotelegraph stations in operation on 14 September 1987, on a secondary basis.
- 454** Only classes A1A or F1B, A2C, A3C, F1C or F3C emissions are authorized for stations of the fixed service in the bands allocated to this service between 90 kHz and 160 kHz (148.5 kHz in Region 1) and for stations of the maritime mobile service in the bands allocated to this service between 110 kHz and 160 kHz (148.5 kHz in Region 1). Exceptionally, class J2B or J7B emissions are also authorized in the bands between 110 kHz and 160 kHz (148.5 kHz in Region 1) for stations of the maritime mobile service.

kHz
110 – 130

Allocation to Services		
Region 1	Region 2	Region 3
110 – 112 FIXED MARITIME MOBILE RADIONAVIGATION 454	110 – 130 FIXED MARITIME MOBILE MARITIME RADIO- NAVIGATION 451 Radiolocation	110 – 112 FIXED MARITIME MOBILE RADIONAVIGATION 451 454
112 – 115 RADIONAVIGATION 451		112 – 117.6 RADIONAVIGATION 451 Fixed Maritime Mobile 454 455
115 – 117.6 RADIONAVIGATION 451 Fixed Maritime Mobile 454 456		117.6 – 126 FIXED MARITIME MOBILE RADIONAVIGATION 451 454
126 – 129 RADIONAVIGATION 451		126 – 129 RADIONAVIGATION 451 Fixed Maritime Mobile 454 455
129 – 130 FIXED MARITIME MOBILE RADIONAVIGATION 451 454		129 – 130 FIXED MARITIME MOBILE RADIONAVIGATION 451 454
	452 454	

- 455** *Different category of service:* in Bangladesh, Iran and Pakistan, the allocation of the bands 112 - 117.6 kHz and 126 - 129 kHz to the fixed and maritime mobile services is on a primary basis (see No. **425**).
- 456** *Different category of service:* in the Federal Republic of Germany, the allocation of the band 115 - 117.6 kHz to the fixed and maritime mobile services is on a primary basis (see No. **425**) and to the radionavigation service on a secondary basis (see No. **424**).

kHz
130 – 325

Allocation to Services		
Region 1	Region 2	Region 3
130 – 148.5 MARITIME MOBILE /FIXED/ 454 457	130 – 160 FIXED MARITIME MOBILE 454	130 – 160 FIXED MARITIME MOBILE RADIONAVIGATION 454
148.5 – 255 BROADCASTING 460 461 462	160 – 190 FIXED 459	160 – 190 FIXED Aeronautical Radionavigation
	190 – 200 AERONAUTICAL RADIONAVIGATION	
	200 – 275 AERONAUTICAL RADIONAVIGATION Aeronautical Mobile	200 – 285 AERONAUTICAL RADIONAVIGATION Aeronautical Mobile
255 – 283.5 BROADCASTING /AERONAUTICAL RADIONAVIGATION/ 463 462 464	275 – 285 AERONAUTICAL RADIONAVIGATION Aeronautical Mobile Maritime Radionavigation (radiobeacons)	
283.5 – 315 MARITIME RADIONAVIGATION (radiobeacons) 466 /AERONAUTICAL RADIONAVIGATION/ 465 466A	285 – 315 MARITIME RADIONAVIGATION (radiobeacons) 466 /AERONAUTICAL RADIONAVIGATION/	
315 – 325 AERONAUTICAL RADIONAVIGATION Maritime Radionavigation (radiobeacons) 466 465 467	315 – 325 MARITIME RADIONAVIGATION (radiobeacons) 466 Aeronautical Radionavigation	315 – 325 AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 466

457 *Additional allocation:* in Bulgaria, Mongolia, Poland, the German Democratic Republic, Romania, Czechoslovakia and the U.S.S.R., the band 130 - 148.5 kHz is also allocated to the radionavigation service on a secondary basis. Within and between these countries this service shall have an equal right to operate.

458* SUP

Mob-87

459 In the Region 2 polar areas (north of 60° N and south 60° S), which are subject to auroral disturbances, the aeronautical fixed service is the primary service in the band 160 - 190 kHz.

460 *Alternative allocation:* in Angola, Botswana, Burundi, the Congo, Malawi, Rwanda, South Africa and Zaire, the band 160 - 200 kHz is allocated to the fixed service on a primary basis.

461 *Additional allocation:* In Somalia, the band 200 - 255 kHz is also allocated to the aeronautical radionavigation service on a primary basis.

462 *Alternative allocation:* in Angola, Botswana, Burundi, Cameroon, the Central African Republic, the Congo, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Nigeria, Oman, Rwanda, South Africa, Swaziland, Tanzania, Chad, Zaire, Zambia and Zimbabwe, the band 200 - 283.5 kHz is allocated to the aeronautical radionavigation service on a primary basis.

463 *Different category of service:* in Sudan and Yemen (P.D.R. of), the allocation of the band 255 - 283.5 kHz to the aeronautical radionavigation service is on a primary basis (see No. **425**).

464 *Alternative allocation:* In Tunisia, the band 255 - 283.5 kHz is allocated to the broadcasting service on a primary basis.

464A SUP

WARC-92

465 Norwegian stations of the fixed service situated in northern areas (north of 60° N) subject to auroral disturbances are allowed to continue operation on four frequencies in the bands 283.5 - 490 kHz and 510 - 526.5 kHz.

* *Note by the Secretary-General:* This note has been renumbered **464A**, to preserve the chronological order.

466 In the band 285 - 325 kHz (283.5 - 325 kHz in Region 1), in the maritime radionavigation service, radiobeacon stations may also transmit supplementary navigational information using narrow-band techniques, on condition that the prime function of the beacon is not significantly degraded.

466A *Additional Allocation:* in Region 1, the frequency band 285.3 - 285.7 kHz
Mob-87 is also allocated to the maritime radionavigation service (other than radio-beacons) on a permitted basis.

467 *Different category of service:* in the U.S.S.R. and the Black Sea areas of Bulgaria, Roumania and Turkey, the allocation of the band 315 - 325 kHz to the maritime radionavigation service is on a primary basis (see No. 425) under the following conditions:

- a) in the Black Sea and White Sea areas, the maritime radionavigation service is the primary service and the aeronautical radionavigation service is the permitted service;
- b) in the Baltic Sea area, the assignment of frequencies in this band to new stations in the maritime or aeronautical radionavigation services shall be subject to prior consultation between the administrations concerned.

kHz
325 – 505

Allocation to Services		
Region 1	Region 2	Region 3
325 – 405 AERONAUTICAL RADIONAVIGATION 465	325 – 335 AERONAUTICAL RADIONAVIGATION Aeronautical Mobile Maritime Radionavigation (radiobeacons)	325 – 405 AERONAUTICAL RADIONAVIGATION Aeronautical Mobile
	335 – 405 AERONAUTICAL RADIONAVIGATION Aeronautical Mobile	
405 – 415 RADIONAVIGATION 468 465	405 – 415 RADIONAVIGATION 468 Aeronautical Mobile	
415 – 435 AERONAUTICAL RADIONAVIGATION /MARITIME MOBILE/ 470 465	415 – 495 MARITIME MOBILE 470 Aeronautical Radionavigation 470A 469 469A 471 472A	
435 – 495 MARITIME MOBILE 470 Aeronautical Radionavigation 465 471 472A		
495 – 505 MOBILE (distress and calling) 472		

468 The frequency 410 kHz is designated for radio direction-finding in the maritime radionavigation service. The other radionavigation services to which the band 405 - 415 kHz is allocated shall not cause harmful interference to radio direction-finding in the band 406.5 - 413.5 kHz.

469 *Different category of service:* in Afghanistan, Australia, China, the French Overseas Territories of Region 3, India, Indonesia, the Islamic Republic of Iran, Japan, Pakistan, Papua New Guinea and Sri Lanka, the allocation of the band 415 - 495 kHz to the aeronautical radionavigation service is on a permitted basis. Administrations in these countries shall take all practical steps necessary to ensure that aeronautical radionavigation stations in the band 435 - 495 kHz do not cause interference to reception by coast stations of ship stations transmitting on frequencies designated for ship stations on a world-wide basis (see No. **4237**).

469A *Different category of service:* in Cuba, the United States of America and Mexico the allocation of the band 415 - 435 kHz to the aeronautical radionavigation service is on a primary basis.

470 The use of the bands 415 - 495 kHz and 505 - 526.5 kHz (505 - 510 kHz in Region 2) by the maritime mobile service is limited to radiotelegraphy.

470A In Region 2, the use of the band 435 - 495 kHz by the aeronautical radionavigation service is limited to non-directional beacons not employing voice transmission.

471 The bands 490 - 495 kHz and 505 - 510 kHz shall be subject to the provisions of No. **3018** until the entry into force of the reduced guardband in accordance with Resolution **210 (Mob-87)**.

472 The frequency 500 kHz is an international distress and calling frequency for Morse radiotelegraphy. The conditions for its use are prescribed in Articles **37**, **38**, **N 38** and **60**.

472A In the maritime mobile service, the frequency 490 kHz is, from the date of full implementation of the GMDSS (see Resolution **331 (Mob-87)**), to be used exclusively for the transmission by coast stations of navigational and meteorological warnings and urgent information to ships, by means of narrow-band direct-printing telegraphy. The conditions for use of the frequency 490 kHz are prescribed in Articles **N 38** and **60**, and Resolution **329 (Mob-87)**. In using the band 415 - 495 kHz for the aeronautical radionavigation service, administrations are requested to ensure that no harmful interference is caused to the frequency 490 kHz.

kHz
505 – 1 606.5

Allocation to Services		
Region 1	Region 2	Region 3
505 – 526.5 MARITIME MOBILE 470 /AERONAUTICAL RADIONAVIGATION/ 465 471 474 476	505 – 510 MARITIME MOBILE 470 471	505 – 526.5 MARITIME MOBILE 470 474 /AERONAUTICAL RADIONAVIGATION/ Aeronautical Mobile Land Mobile 471
	510 – 525 MOBILE 474 AERONAUTICAL RADIONAVIGATION	
526.5 – 1 606.5 BROADCASTING 478	525 – 535 BROADCASTING 477 AERONAUTICAL RADIONAVIGATION	526.5 – 535 BROADCASTING Mobile 479
	535 – 1 605 BROADCASTING	535 – 1 606.5 BROADCASTING

473 SUP

Mob-87

474 The conditions for the use of frequency 518 kHz by the maritime mobile
Mob-87 service are prescribed in Articles 38, N 38 and 60 (see Resolution 324
(**Mob-87**) and Article 14A).

475 SUP

WARC-92

476 *Additional allocation:* in the United Kingdom, the band 519.5 -
526.5 kHz is also allocated to the broadcasting service on a secondary basis
for the transmission of public utility information.

477 In Region 2, in the band 525 - 535 kHz the carrier power of broadcasting
stations shall not exceed 1 kW during the day and 250 W at night.

478 *Additional allocation:* in Angola, Botswana, Lesotho, Malawi,
Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the
band 526.5 - 535 kHz is also allocated to the mobile service on a secondary
basis.

479 *Additional allocation:* in China, the band 526.5 - 535 kHz is also
allocated to the aeronautical radionavigation service on a secondary basis.

kHz
1 605 – 1 800

Allocation to Services		
Region 1	Region 2	Region 3
	1 605 – 1 625	
1 606.5 – 1 625 MARITIME MOBILE 480A /FIXED/ /LAND MOBILE/ 483 484	BROADCASTING 480 480A	1 606.5 – 1 800 FIXED MOBILE RADIOLOCATION RADIONAVIGATION
1 625 – 1 635 RADIOLOCATION 487 485 486	1 625 – 1 705 BROADCASTING 480 /FIXED/ /MOBILE/ Radiolocation 480A	
1 635 – 1 800 MARITIME MOBILE 480A /FIXED/ /LAND MOBILE/ 483 484 488	1 705 – 1 800 FIXED MOBILE RADIOLOCATION AERONAUTICAL RADIONAVIGATION	
		482

480 In Region 2, the use of the band 1 605 - 1 705 kHz by stations of the
Orb-88 broadcasting service is subject to the Plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988).

In Region 2, in the band 1 625 - 1 705 kHz, the relationship between the broadcasting, fixed and mobile services is shown in No. 419. However, the examination of frequency assignments to stations of the fixed and mobile services in the band 1 625 - 1 705 kHz under No. 1241 shall take account of the allotments appearing in the Plan established by the Regional Administrative Radio Conference (Rio de Janeiro, 1988).

480A In the band 1 605 - 1 705 kHz, in cases where a broadcasting station of
Mob-87 Region 2 is concerned, the service area of the maritime mobile stations in Region 1 shall be limited to that provided by ground-wave propagation.

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482 *Additional allocation:* in Australia, Indonesia, New Zealand, the Philippines, Singapore, Sri Lanka and Thailand, the band 1 606.5 - 1 705 kHz is also allocated to the broadcasting service on a secondary basis.

483 *Different category of service:* in Bulgaria, Hungary, Mongolia, Nigeria, Poland, the German Democratic Republic, Chad, Czechoslovakia and the U.S.S.R., the allocation of the bands 1 606.5 - 1 625 kHz, 1 635 - 1 800 kHz and 2 107 - 2 160 kHz to the fixed and land mobile services is on a primary basis (see No. 425).

484 Some countries of Region 1 use radiodetermination systems in the bands 1 606.5 - 1 625 kHz, 1 635 - 1 800 kHz, 1 850 - 2 160 kHz, 2 194 - 2 300 kHz, 2 502 - 2 850 kHz and 3 500 - 3 800 kHz. The establishment and operation of such systems are subject to agreement obtained under the procedure set forth in Article 14. The radiated mean power of these stations shall not exceed 50 W.

485 *Additional allocation:* in Angola, Bulgaria, Hungary, Mongolia, Nigeria, Poland, the German Democratic Republic, Chad, Czechoslovakia and the U.S.S.R., the bands 1 625 - 1 635 kHz, 1 800 - 1 810 kHz and 2 160 - 2 170 kHz are also allocated to the fixed and land mobile services on a primary basis subject to agreement obtained under the procedure set forth in Article 14.

- 486** In Region 1, in the bands 1 625 - 1 635 kHz, 1 800 - 1 810 kHz and 2 160 - 2 170 kHz (except in the countries listed in No. **485** and those listed in No. **499** for the band 2 160 - 2 170 kHz), existing stations in the fixed and mobile, except aeronautical mobile, services (and stations of the aeronautical mobile (OR) service in the band 2 160 - 2 170 kHz) may continue to operate on a primary basis until satisfactory replacement assignments have been found and implemented in accordance with Resolution **38**.
- 487** In Region 1, the establishment and operation of stations of the radiolocation service in the bands 1 625 - 1 635 kHz, 1 800 - 1 810 kHz and 2 160 - 2 170 kHz shall be subject to agreement obtained under the procedure set forth in Article **14** (see also No. **486**). The radiated mean power of radiolocation stations shall not exceed 50 W. Pulse systems are prohibited.
- 488** In the Federal Republic of Germany, Denmark, Finland, Hungary, Ireland, Israel, Jordan, Malta, Norway, Poland, The German Democratic Republic, the United Kingdom, Sweden, Czechoslovakia and the U.S.S.R., administrations may allocate up to 200 kHz to their amateur service in the bands 1 715 - 1 800 kHz and 1 850 - 2 000 kHz. However, when allocating the bands within this range to their amateur service, administrations shall, after prior consultation with administrations of neighbouring countries, take such steps as may be necessary to prevent harmful interference from their amateur service to the fixed and mobile services of other countries. The mean power of any amateur station shall not exceed 10 W.

kHz
1 800 – 2 065

Allocation to Services		
Region 1	Region 2	Region 3
1 800 – 1 810 RADIOLOCATION 487 485 486	1 800 – 1 850 AMATEUR	1 800 – 2 000 AMATEUR FIXED MOBILE except aeronautical mobile RADIONAVIGATION Radiolocation
1 810 – 1 850 AMATEUR 490 491 492 493		
1 850 – 2 000 FIXED MOBILE except aeronautical mobile 484 488 495	1 850 – 2 000 AMATEUR FIXED MOBILE except aeronautical mobile RADIOLOCATION RADIONAVIGATION 494	
2 000 – 2 025 FIXED MOBILE except aeronautical mobile (R) 484 495	2 000 – 2 065 FIXED MOBILE	
2 025 – 2 045 FIXED MOBILE except aeronautical mobile (R) Meteorological Aids 496 484 495		

- 489 In Region 3, the Loran system operates either on 1 850 kHz or 1 950 kHz,
 Mob-87 the bands occupied being 1 825 - 1 875 kHz and 1 925 - 1 975 kHz respectively. Other services to which the band 1 800 - 2 000 kHz is allocated may use any frequency therein on condition that no harmful interference is caused to the Loran system operating on 1 850 kHz or 1 950 kHz.
- 490 *Alternative allocation:* in the Federal Republic of Germany, Angola, Austria, Belgium, Bulgaria, Cameroon, the Congo, Denmark, Egypt, Spain, Ethiopia, France, Greece, Italy, the Lebanon, Luxembourg, Malawi, the Netherlands, Portugal, Syria, the German Democratic Republic, Somalia, Tanzania, Tunisia, Turkey and the U.S.S.R., the band 1 810 - 1 830 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 491 *Additional allocation:* In Saudi Arabia, Iraq, Israel, Libya, Poland, Roumania, Chad, Czechoslovakia, Togo and Yugoslavia, the band 1 810 - 1 830 kHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 492 In Region 1, the use of the band 1 810 - 1 850 kHz by the amateur service is subject to the condition that satisfactory replacement assignments have been found and implemented in accordance with Resolution 38, for frequencies to all existing stations of the fixed and mobile, except aeronautical mobile, services operating in this band (except for the stations of the countries listed in Nos. 490, 491 and 493). On completion of satisfactory transfer, the authorization to use the band 1 810 - 1 830 kHz by the amateur service in countries situated totally or partially north of 40° N shall be given only after consultation with the countries mentioned in Nos. 490 and 491 to define the necessary steps to be taken to prevent harmful interference between amateur stations and stations of other services operating in accordance with Nos. 490 and 491.
- 493 *Alternative allocation:* In Burundi and Lesotho, the band 1 810 - 1 850 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 494 *Alternative allocation:* In Argentina, Bolivia, Chile, Mexico, Paraguay, Peru, Uruguay and Venezuela, the band 1 850 - 2 000 kHz is allocated to the fixed, mobile except aeronautical mobile, radiolocation and radionavigation services on a primary basis.
- 495 In Region 1, in making assignments to stations in the fixed and mobile services in the bands 1 850 - 2 045 kHz, 2 194 - 2 498 kHz, 2 502 - 2 625 kHz and 2 650 - 2 850 kHz, administrations should bear in mind the special requirements of the maritime mobile service.

496 In Region 1, the use of the band 2 025 - 2 045 kHz by the meteorological
aids service is limited to oceanographic buoy stations.

kHz
2 045 – 2 501

Allocation to Services		
Region 1	Region 2	Region 3
2 045 – 2 160 MARITIME MOBILE /FIXED/ /LAND MOBILE/ 483 484		
	2 065 – 2 107 MARITIME MOBILE 497 498	
	2 107 – 2 170 FIXED MOBILE	
2 160 – 2 170 RADIOLOCATION 487 485 486 499		
2 170 – 2 173.5 MARITIME MOBILE		
2 173.5 – 2 190.5 MOBILE (distress and calling) 500 500A 500B 501		
2 190.5 – 2 194 MARITIME MOBILE		
2 194 – 2 300 FIXED MOBILE except aeronautical mobile (R) 484 495 502	2 194 – 2 300 FIXED MOBILE 502	
2 300 – 2 498 FIXED MOBILE except aeronautical mobile (R) BROADCASTING 503 495	2 300 – 2 495 FIXED MOBILE BROADCASTING 503	
	2 495 – 2 501 STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	
2 498 – 2 501 STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)		

- 497** In Region 2, except in Greenland, coast stations and ship stations using
Mob-87 radiotelephony in the band 2 065 - 2 107 kHz shall be limited to class R3E or J3E emissions and to a peak envelope power not exceeding 1 kW. Preferably, the following carrier frequencies should be used: 2 065.0 kHz, 2 079.0 kHz, 2 082.5 kHz, 2 086.0 kHz, 2 093.0 kHz, 2 096.5 kHz, 2 100.0 kHz and 2 103.5 kHz. In Argentina, Brazil and Uruguay, the carrier frequencies 2 068.5 kHz and 2 075.5 kHz are also used for this purpose, while the frequencies within the band 2 072 - 2 075.5 kHz are used as provided in No. **4323BD**.
- 498** In Regions 2 and 3, provided no harmful interference is caused to the maritime mobile service, the frequencies between 2 065 kHz and 2 107 kHz may be used by stations of the fixed service communicating only within national borders and whose mean power does not exceed 50 W. In notifying the frequencies, the attention of the International Frequency Registration Board should be drawn to these provisions.
- 499** *Additional allocation:* in Saudi Arabia, Botswana, Ethiopia, Iraq, Lesotho, Libya, Malawi, Somalia, Swaziland and Zambia, the band 2 160 - 2 170 kHz is also allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis. The mean power of stations in these services shall not exceed 50 W.
- 500** The carrier frequency 2 182 kHz is an international distress and calling
Mob-87 frequency for radiotelephony. The conditions for the use of the band 2 173.5 - 2 190.5 kHz are prescribed in Articles **37**, **38**, **N 38** and **60**.
- 500A** The frequencies 2 187.5 kHz, 4 207.5 kHz, 6 312 kHz, 8 414.5 kHz,
Mob-87 12 577 kHz and 16 804.5 kHz are international distress frequencies for digital selective calling. The conditions for the use of these frequencies are prescribed in Article **N 38**.
- 500B** The frequencies 2 174.5 kHz, 4 177.5 kHz, 6 268 kHz, 8 376.5 kHz,
Mob-87 12 520 kHz and 16 695 kHz are international distress frequencies for narrow-band direct-printing telegraphy. The conditions for the use of these frequencies are prescribed in Article **N 38**.
- 501** The carrier frequencies 2 182 kHz, 3 023 kHz, 5 680 kHz, 8 364 kHz and
Mob-87 the frequencies 121.5 MHz, 156.8 MHz and 243 MHz may also be used, in accordance with the procedures in force for terrestrial radiocommunication services, for search and rescue operations concerning manned space vehicles. The conditions for the use of the frequencies are prescribed in Articles **38** and **N 38**.

The same applies to the frequencies 10 003 kHz, 14 993 kHz and 19 993 kHz, but in each of these cases emissions must be confined in a band of ± 3 kHz about the frequency.

502 *Alternative allocation:* in Belgium, Cyprus, Denmark, Spain, France, Greece, Iceland, Italy, Malta, Norway, the Netherlands, Portugal, the United Kingdom, Singapore, Sri Lanka, Sweden, Turkey and Yugoslavia, the band 2 194 - 2 300 kHz is allocated to the maritime mobile service on a primary basis and to the fixed and land mobile services on a permitted basis.

503 For the conditions for the use of the bands 2 300 - 2 495 kHz (2 498 kHz in Region 1), 3 200 - 3 400 kHz, 4 750 - 4 995 kHz and 5 005 - 5 060 kHz by the broadcasting service, see Nos. **406** to **410**, **411** and **2666** to **2673**.

kHz
2 501 – 3 230

Allocation to Services		
Region 1	Region 2	Region 3
2 501 – 2 502	STANDARD FREQUENCY AND TIME SIGNAL Space Research	
2 502 – 2 625 FIXED MOBILE except aeronautical mobile (R) 484 495 504	2 502 – 2 505 STANDARD FREQUENCY AND TIME SIGNAL	
2 625 – 2 650 MARITIME MOBILE MARITIME RADIONAVIGATION 484	2 505 – 2 850 FIXED MOBILE	
2 650 – 2 850 FIXED MOBILE except aeronautical mobile (R) 484 495		
2 850 – 3 025	AERONAUTICAL MOBILE (R) 501 505	
3 025 – 3 155	AERONAUTICAL MOBILE (OR)	
3 155 – 3 200	FIXED MOBILE except aeronautical mobile (R) 506 507	
3 200 – 3 230	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 503 506	

504 *Alternative allocation:* in Belgium, Cyprus, Denmark, Spain, France, Greece, Iraq, Italy, Malta, Norway, the Netherlands, Portugal, the United Kingdom, Sweden, Turkey and Yugoslavia, the band 2 502 - 2 625 kHz is allocated to the maritime mobile service on a primary basis and to the fixed and land mobile services on a permitted basis.

505 The carrier (reference) frequencies 3 023 kHz and 5 680 kHz may also be
Mob-87 used, in accordance with Articles 38 and N 38 by stations of the maritime mobile service engaged in coordinated search and rescue operations.

506 Administrations are urged to authorize the use of the band 3 155 - 3 195 kHz to provide a common worldwide channel for low power wireless hearing aids. Additional channels for these devices may be assigned by administrations in the bands between 3 155 kHz and 3 400 kHz to suit local needs.

It should be noted that frequencies in the range 3 000 kHz to 4 000 kHz are suitable for hearing aid devices which are designed to operate over short distances within the induction field.

507 *Alternative allocation:* in Belgium, Cameroon, Cyprus, the Ivory Coast, Denmark, Egypt, Spain, France, Greece, Iceland, Italy, Liberia, Malta, Norway, the Netherlands, the United Kingdom, Singapore, Sri Lanka, Sweden, Togo, Turkey and Yugoslavia, the band 3 155 - 3 200 kHz is allocated to the maritime mobile service on a primary basis and to the fixed and land mobile services on a permitted basis.

kHz
3 230 – 4 063

Allocation to Services		
Region 1	Region 2	Region 3
3 230 – 3 400 FIXED MOBILE except aeronautical mobile BROADCASTING 503 506 508		
3 400 – 3 500 AERONAUTICAL MOBILE (R)		
3 500 – 3 800 AMATEUR 510 FIXED MOBILE except aeronautical mobile 484	3 500 – 3 750 AMATEUR 510 509 511	3 500 – 3 900 AMATEUR 510 FIXED MOBILE
3 800 – 3 900 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	3 750 – 4 000 AMATEUR 510 FIXED MOBILE except aeronautical mobile (R)	
3 900 – 3 950 AERONAUTICAL MOBILE (OR) 513		3 900 – 3 950 AERONAUTICAL MOBILE BROADCASTING
3 950 – 4 000 FIXED BROADCASTING		3 950 – 4 000 FIXED BROADCASTING 516
4 000 – 4 063 FIXED MARITIME MOBILE 517 516		

- 508 *Additional allocation:* in Australia, Brazil, Canada, the United States, Japan, Mexico, New Zealand, Peru and Uruguay, the band 3 230 - 3 400 kHz is also allocated to the radiolocation service on a secondary basis.
- 509 *Additional allocation:* in Honduras, Mexico, Peru and Venezuela, the band 3 500 - 3 750 kHz is also allocated to the fixed and mobile services on a primary basis.
- 510 For the use of the bands allocated to the amateur service at 3.5 MHz, 7.0 MHz, 10.1 MHz, 14.0 MHz, 18.068 MHz, 21.0 MHz, 24.89 MHz and 144 MHz in the event of natural disasters, see Resolution 640.
- 511 *Additional allocation:* in Brazil, the band 3 700 - 4 000 kHz is also allocated to the radiolocation service on a primary basis.
- 512 *Alternative allocation:* in Argentina, Bolivia, Chile, Ecuador, Paraguay, Peru and Uruguay, the band 3 750 - 4 000 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 513 *Alternative allocation:* in Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the band 3 900 - 3 950 kHz is allocated to the broadcasting service on a primary basis. The use of this band by the broadcasting service is subject to agreement obtained under the procedure set forth in Article 14 with neighbouring countries having services operating in accordance with the Table.
- 514 *Additional allocation:* in Canada, the band 3 950 - 4 000 kHz is also allocated to the broadcasting service on a primary basis. The power of broadcasting stations operating in this band shall not exceed that necessary for a national service within the frontier of this country and shall not cause harmful interference to other services operating in accordance with the Table.
- 515 *Additional allocation:* in Greenland, the band 3 950 - 4 000 kHz is also allocated to the broadcasting service on a primary basis. The power of the broadcasting stations operating in this band shall not exceed that necessary for a national service and shall in no case exceed 5 kW.
- 516 In Region 3, the stations of those services to which the band 3 995 - 4 005 kHz is allocated may transmit standard frequency and time signals.
- 517 The use of the band 4 000 - 4 063 kHz by the maritime mobile service is limited to ship stations using radiotelephony (see No. 4374 and Appendix 16).
- Mob-87

kHz
4 063 – 5 450

Allocation to Services		
Region 1	Region 2	Region 3
4 063 – 4 438	MARITIME MOBILE 500A 500B 520 520A 520B 518 519	
4 438 – 4 650 FIXED MOBILE except aeronautical mobile (R)		4 438 – 4 650 FIXED MOBILE except aeronautical mobile
4 650 – 4 700	AERONAUTICAL MOBILE (R)	
4 700 – 4 750	AERONAUTICAL MOBILE (OR)	
4 750 – 4 850 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 503	4 750 – 4 850 FIXED MOBILE except aeronautical mobile (R) BROADCASTING 503	4 750 – 4 850 FIXED BROADCASTING 503 Land Mobile
4 850 – 4 995	FIXED LAND MOBILE BROADCASTING 503	
4 995 – 5 003	STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	
5 003 – 5 005	STANDARD FREQUENCY AND TIME SIGNAL Space Research	
5 005 – 5 060	FIXED BROADCASTING 503	
5 060 – 5 250	FIXED Mobile except aeronautical mobile 521	
5 250 – 5 450	FIXED MOBILE except aeronautical mobile	

- 518** In Afghanistan, Argentina, Australia, Botswana, Burkina Faso, China, **WARC-92** India, Mali, Niger, Central African Republic, Chad and the U.S.S.R., in the bands 4 063 - 4 123 kHz, 4 130 - 4 133 kHz and 4 408 - 4 438 kHz, stations of limited power in the fixed service which are situated at least 600 km from the coast may operate on condition that harmful interference is not caused to the maritime mobile service.
- 519** On condition that harmful interference is not caused to the maritime mobile service, the frequencies in the bands 4 063 - 4 123 kHz and 4 130 - 4 438 kHz may be used exceptionally by stations in the fixed service communicating only within the boundary of the country in which they are located with a mean power not exceeding 50 W.
- 520** The conditions for the use of the carrier frequencies 4 125 kHz and **Mob-87** 6 215 kHz are prescribed in Articles **37, 38, N 38** and **60**.
- 520A** The frequency 4 209.5 kHz is used exclusively for the transmission by **Mob-87** coast stations of meteorological and navigational warnings and urgent information to ships by means of narrow-band direct-printing techniques (see Resolution **332 (Mob-87)**).
- 520B** The frequencies 4 210 kHz, 6 314 kHz, 8 416.5 kHz, 12 579 kHz, **Mob-87** 16 806.5 kHz, 19 680.5 kHz, 22 376 kHz and 26 100.5 kHz are the international frequencies for the transmission of Maritime Safety Information (MSI) (see Resolution **333 (Mob-87)** and Appendix **31**).
- 521** *Different category of service:* In the U.S.S.R., the allocation of the band 5 130 - 5 250 kHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. **425**).

kHz
5 450 – 7 100

Allocation to Services		
Region 1	Region 2	Region 3
5 450 – 5 480 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	5 450 – 5 480 AERONAUTICAL MOBILE (R)	5 450 – 5 480 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE
5 480 – 5 680	AERONAUTICAL MOBILE (R) 501 505	
5 680 – 5 730	AERONAUTICAL MOBILE (OR) 501 505	
5 730 – 5 900 FIXED LAND MOBILE	5 730 – 5 900 FIXED MOBILE except aeronautical mobile (R)	5 730 – 5 900 FIXED Mobile except aeronautical mobile (R)
5 900 – 5 950	BROADCASTING 521A 521B 521C	
5 950 – 6 200	BROADCASTING	
6 200 – 6 525	MARITIME MOBILE 500A 500B 520 520B 522	
6 525 – 6 685	AERONAUTICAL MOBILE (R)	
6 685 – 6 765	AERONAUTICAL MOBILE (OR)	
6 765 – 7 000	FIXED Land Mobile 525 524	
7 000 – 7 100	AMATEUR 510 AMATEUR-SATELLITE 526 527	

521A The use of the bands 5 900 – 5 950 kHz, 7 300 - 7 350 kHz, 9 400 -
WARC-92 9 500 kHz, 11 600 - 11 650 kHz, 12 050 - 12 100 kHz, 13 570 - 13 600 kHz,
 13 800 - 13 870 kHz, 15 600 - 15 800 kHz, 17 480 - 17 550 kHz and 18 900 -
 19 020 kHz by the broadcasting service is limited to single-sideband
 emissions with the characteristics specified in Appendix 45 to the Radio
 Regulations.

521B The use of the bands 5 900 - 5 950 kHz, 7 300 - 7 350 kHz, 9 400 -
WARC-92 9 500 kHz, 11 600 - 11 650 kHz, 12 050 - 12 100 kHz, 13 570 - 13 600 kHz,
 13 800 - 13 870 kHz, 15 600 - 15 800 kHz, 17 480 - 17 550 kHz and 18 900 -
 19 020 kHz by the broadcasting service shall be subject to the planning
 procedures to be drawn up by a competent world administrative radio
 conference.

521C The band 5 900 - 5 950 kHz is allocated, until 1 April 2007, to the fixed
WARC-92 service on a primary basis, as well as to the following services: in Region 1 to
 the land mobile service on a primary basis, in Region 2 to the mobile except
 aeronautical mobile (R) service on a primary basis, and in Region 3 to the
 mobile except aeronautical mobile (R) service on a secondary basis, subject
 to application of the procedure referred to in Resolution 21 (WARC-92).
 After 1 April 2007, frequencies in this band may be used by stations in the
 above-mentioned services, communicating only within the boundary of the
 country in which they are located, on the condition that harmful interference
 is not caused to the broadcasting service. When using frequencies for these
 services, administrations are urged to use the minimum power required and to
 take account of the seasonal use of frequencies by the broadcasting service
 published in accordance with the Radio Regulations.

522 On condition that harmful interference is not caused to the maritime
 mobile service, the bands 6 200 - 6 213.5 kHz and 6 220.5 - 6 525 kHz may be
 used exceptionally by stations in the fixed service, communicating only
 within the boundary of the country in which they are located, with a mean
 power not exceeding 50 W. At the time of notification of these frequencies,
 the attention of the International Frequency Registration Board will be drawn
 to the above conditions.

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524 The band 6 765 - 6 795 kHz (centre frequency 6 780 kHz) is designated
 for industrial, scientific and medical (ISM) applications. The use of this
 frequency band for ISM applications shall be subject to special authorization
 by the administration concerned, in agreement with other administrations

whose radiocommunication services might be affected. In applying this provision, administrations shall have due regard to the latest relevant CCIR Recommendations.

525 *Different category of service:* in Mongolia and the U.S.S.R., the allocation of the band 6 765 - 7 000 kHz to the land mobile service is on a primary basis (see No. 425).

526 *Additional allocation:* in Angola, Iraq, Kenya, Rwanda, Somalia and Togo, the band 7 000 - 7 050 kHz is also allocated to the fixed service on a primary basis.

527 *Alternative allocation:* in Egypt, Ethiopia, Guinea, Libya, Madagascar, Malawi and Tanzania, the band 7 000 - 7 050 kHz is allocated to the fixed service on a primary basis.

kHz
7 100 – 10 003

Allocation to Services		
Region 1	Region 2	Region 3
7 100 – 7 300 BROADCASTING	7 100 – 7 300 AMATEUR 510 528	7 100 – 7 300 BROADCASTING
7 300 – 7 350	BROADCASTING 521A 521B 528A	
7 350 – 8 100	FIXED Land Mobile 529	
8 100 – 8 195	FIXED MARITIME MOBILE	
8 195 – 8 815	MARITIME MOBILE 500A 500B 520B 529A 501	
8 815 – 8 965	AERONAUTICAL MOBILE (R)	
8 965 – 9 040	AERONAUTICAL MOBILE (OR)	
9 040 – 9 400	FIXED	
9 400 – 9 500	BROADCASTING 521A 521B 529B	
9 500 – 9 900	BROADCASTING 530 531	
9 900 – 9 995	FIXED	
9 995 – 10 003	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 501	

528 The use of the band 7 100 - 7 300 kHz in Region 2 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3.

528A The band 7 300 - 7 350 kHz is allocated, until 1 April 2007, to the fixed
WARC-92 service on a primary basis and to the land mobile service on a secondary basis, subject to application of the procedure referred to in Resolution 21 (WARC-92). After 1 April 2007, frequencies in this band may be used by stations in the above-mentioned services, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

529 In Region 3, the stations of those services to which the band 7 995 - 8 005 kHz is allocated may transmit standard frequency and time signals.

529A The conditions for the use of the carrier frequencies 8 291 kHz,
Mob-87 12 290 kHz and 16 420 kHz are prescribed in Articles 38, N 38 and 60.

529B The bands 9 400 - 9 500 kHz, 11 600 - 11 650 kHz, 12 050 - 12 100 kHz,
WARC-92 15 600 - 15 800 kHz, 17 480 - 17 550 kHz and 18 900 - 19 020 kHz are allocated to the fixed service on a primary basis until 1 April 2007, subject to application of the procedure referred to in Resolution 21 (WARC-92). After 1 April 2007, frequencies in these bands may be used by stations in the fixed service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies in the fixed service, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

530 On condition that harmful interference is not caused to the broadcasting service, frequencies in the bands 9 775 - 9 900 kHz, 11 650 - 11 700 kHz and 11 975 - 12 050 kHz may be used by stations in the fixed service communicating only within the boundary of the country in which they are located, each station using a total radiated power not exceeding 24 dBW.

531 The bands 9 775 - 9 900 kHz, 11 650 - 11 700 kHz, 11 975 - 12 050 kHz,
HFBC-87 13 600 - 13 800 kHz, 15 450 - 15 600 kHz, 17 550 - 17 700 kHz and 21 750 -
21 850 kHz are allocated to the fixed service on a primary basis subject to the
procedure described in Resolution 8. The use of these bands by the broad-
casting service shall be subject to provisions established by the World
Administrative Radio Conference for the Planning of the HF Bands Allocated
to the Broadcasting Service (see Resolution 508). The provisions of Reso-
lution 512 (HFBC-87) also apply. Within these bands, the date of com-
mencement of operations in the broadcasting service on a planned channel
shall not be earlier than the date of completion of satisfactory transfer,
according to the procedures described in Resolution 8, of all assignments to
stations in the fixed service operating in accordance with the Table and other
provisions of the Radio Regulations, which are recorded in the Master
Register and which may be affected by broadcasting operations on that
channel.

kHz
10 003 – 13 410

Allocation to Services		
Region 1	Region 2	Region 3
10 003 – 10 005	STANDARD FREQUENCY AND TIME SIGNAL Space Research 501	
10 005 – 10 100	AERONAUTICAL MOBILE (R) 501	
10 100 – 10 150	FIXED Amateur 510	
10 150 – 11 175	FIXED Mobile except aeronautical mobile (R)	
11 175 – 11 275	AERONAUTICAL MOBILE (OR)	
11 275 – 11 400	AERONAUTICAL MOBILE (R)	
11 400 – 11 600	FIXED	
11 600 – 11 650	BROADCASTING 521A 521B 529B	
11 650 – 12 050	BROADCASTING 530 531	
12 050 – 12 100	BROADCASTING 521A 521B 529B	
12 100 – 12 230	FIXED	
12 230 – 13 200	MARITIME MOBILE 500A 500B 520B 529A	
13 200 – 13 260	AERONAUTICAL MOBILE (OR)	
13 260 – 13 360	AERONAUTICAL MOBILE (R)	
13 360 – 13 410	FIXED RADIO ASTRONOMY 533	

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533 In making assignments to stations of other services to which the band 13 360 - 13 410 kHz is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).

kHz
13 410 – 15 600

Allocation to Services		
Region 1	Region 2	Region 3
13 410 – 13 570	FIXED Mobile except aeronautical mobile (R) 534	
13 570 – 13 600	BROADCASTING 521A 521B 534A	
13 600 – 13 800	BROADCASTING 531	
13 800 – 13 870	BROADCASTING 521A 521B 534A	
13 870 – 14 000	FIXED Mobile except aeronautical mobile (R)	
14 000 – 14 250	AMATEUR 510 AMATEUR-SATELLITE	
14 250 – 14 350	AMATEUR 510 535	
14 350 – 14 990	FIXED Mobile except aeronautical mobile (R)	
14 990 – 15 005	STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 501	
15 005 – 15 010	STANDARD FREQUENCY AND TIME SIGNAL Space Research	
15 010 – 15 100	AERONAUTICAL MOBILE (OR)	
15 100 – 15 600	BROADCASTING 531	

- 534 The band 13 553 - 13 567 kHz (centre frequency 13 560 kHz) is designated for industrial, scientific and medical (ISM) applications. Radio-communication services operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. 1815.
- 534A The bands 13 570 - 13 600 kHz and 13 800 - 13 870 kHz are allocated, WARC-92 until 1 April 2007, to the fixed service on a primary basis and to the mobile except aeronautical mobile (R) service on a secondary basis, subject to application of the procedure referred to in Resolution 21 (WARC-92). After 1 April 2007, frequencies in these bands may be used by stations in the above-mentioned services, communicating only within the boundary of the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service. When using frequencies in these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.
- 535 *Additional allocation:* in Afghanistan, China, the Ivory Coast, Iran and the U.S.S.R., the band 14 250 - 14 350 kHz is also allocated to the fixed service on a primary basis. Stations of the fixed service shall not use a radiated power exceeding 24 dBW.

kHz
15 600 – 19 800

Allocation to Services		
Region 1	Region 2	Region 3
15 600 – 15 800	BROADCASTING 521A 521B 529B	
15 800 – 16 360	FIXED 536	
16 360 – 17 410	MARITIME MOBILE 500A 500B 520B 529A	
17 410 – 17 480	FIXED	
17 480 – 17 550	BROADCASTING 521A 521B 529B	
17 550 – 17 900	BROADCASTING 531	
17 900 – 17 970	AERONAUTICAL MOBILE (R)	
17 970 – 18 030	AERONAUTICAL MOBILE (OR)	
18 030 – 18 052	FIXED	
18 052 – 18 068	FIXED Space Research	
18 068 – 18 168	AMATEUR 510 AMATEUR-SATELLITE 538	
18 168 – 18 780	FIXED Mobile except aeronautical mobile	
18 780 – 18 900	MARITIME MOBILE	
18 900 – 19 020	BROADCASTING 521A 521B 529B	
19 020 – 19 680	FIXED	
19 680 – 19 800	MARITIME MOBILE 520B	

536 In Region 3, the stations of those services to which the band 15 995 - 16 005 kHz is allocated may transmit standard frequency and time signals.

537 SUP

WARC-92

538 *Additional allocation:* in the U.S.S.R., the band 18 068 - 18 168 kHz is also allocated to the fixed service on a primary basis for use within the boundary of the U.S.S.R., with a peak envelope power not exceeding 1 kW.

kHz
19 800 – 23 350

Allocation to Services		
Region 1	Region 2	Region 3
19 800 – 19 990	FIXED	
19 990 – 19 995	STANDARD FREQUENCY AND TIME SIGNAL Space Research 501	
19 995 – 20 010	STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 501	
20 010 – 21 000	FIXED Mobile	
21 000 – 21 450	AMATEUR 510 AMATEUR-SATELLITE	
21 450 – 21 850	BROADCASTING 531	
21 850 – 21 870	FIXED 539	
21 870 – 21 924	AERONAUTICAL FIXED	
21 924 – 22 000	AERONAUTICAL MOBILE (R)	
22 000 – 22 855	MARITIME MOBILE 520B 540	
22 855 – 23 000	FIXED 540	
23 000 – 23 200	FIXED Mobile except aeronautical mobile (R) 540	
23 200 – 23 350	AERONAUTICAL FIXED AERONAUTICAL MOBILE (OR)	

- 539** *Alternative allocation:* in Bulgaria, Hungary, Mongolia, Poland, Czechoslovakia and the U.S.S.R., the band 21 850 - 21 870 kHz is allocated to the aeronautical fixed and the aeronautical mobile (R) services on a primary basis.
- 540** *Additional allocation:* in Nigeria, the band 22 720 - 23 200 kHz is also allocated to the meteorological aids service (radiosondes) on a primary basis.

kHz
23 350 – 27 500

Allocation to Services		
Region 1	Region 2	Region 3
23 350 – 24 000	FIXED MOBILE except aeronautical mobile 541 542	
24 000 – 24 890	FIXED LAND MOBILE 542	
24 890 – 24 990	AMATEUR 510 AMATEUR-SATELLITE 542	
24 990 – 25 005	STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	
25 005 – 25 010	STANDARD FREQUENCY AND TIME SIGNAL Space Research	
25 010 – 25 070	FIXED MOBILE except aeronautical mobile	
25 070 – 25 210	MARITIME MOBILE	
25 210 – 25 550	FIXED MOBILE except aeronautical mobile	
25 550 – 25 670	RADIO ASTRONOMY 545	
25 670 – 26 100	BROADCASTING	
26 100 – 26 175	MARITIME MOBILE 520B	
26 175 – 27 500	FIXED MOBILE except aeronautical mobile 546	

541 The use of the band 23 350 - 24 000 kHz by the maritime mobile service is limited to inter-ship radiotelegraphy.

542 *Additional allocation:* in Kenya, the band 23 600 - 24 900 kHz is also allocated to the meteorological aids service (radiosondes) on a primary basis.

543 and 544 SUP
WARC-92

545 The band 25 550 - 25 600 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis subject to the procedure described in Resolution 8. The use of this band by the radio astronomy service shall be subject to the completion of the satisfactory transfer of all assignments to stations in the fixed and mobile, except aeronautical mobile, services operating in this band and recorded in the Master Register, in accordance with the procedure described in Resolution 8. The band 25 600 - 25 670 kHz is allocated to the broadcasting service on a primary basis, subject to provisions to be established by the world administrative radio conference for the planning of HF bands allocated to the broadcasting service (see Resolution 508). After completion of all the above-mentioned provisions, all emissions capable of causing harmful interference to the radio astronomy service in the band 25 550 - 25 670 kHz shall be avoided. The use of passive sensors by other services will also be authorized.

546 The band 26 957 - 27 283 kHz (centre frequency 27 120 kHz) is designated for industrial, scientific and medical (ISM) applications. Radiocommunication services operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. 1815.

MHz
27.5 – 40.98

Allocation to Services		
Region 1	Region 2	Region 3
27.5 – 28	METEOROLOGICAL AIDS FIXED MOBILE	
28 – 29.7	AMATEUR AMATEUR-SATELLITE	
29.7 – 30.005	FIXED MOBILE	
30.005 – 30.01	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	
30.01 – 37.5	FIXED MOBILE	
37.5 – 38.25	FIXED MOBILE Radio Astronomy 547	
38.25 – 39.986	FIXED MOBILE	
39.986 – 40.02	FIXED MOBILE Space Research	
40.02 – 40.98	FIXED MOBILE 548	

- 547** In making assignments to stations of other services to which the band 37.5 - 38.25 MHz is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).
- 548** The band 40.66 - 40.70 MHz (centre frequency 40.68 MHz) is designated for industrial, scientific and medical (ISM) applications. Radiocommunication services operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. **1815**.

MHz
40.98 – 68

Allocation to Services		
Region 1	Region 2	Region 3
40.98 – 41.015	FIXED MOBILE Space Research 549 550	
41.015 – 44	FIXED MOBILE 549 550	
44 – 47	FIXED MOBILE 552	
47 – 68 BROADCASTING 553 554 555 559 561	47 – 50 FIXED MOBILE	47 – 50 FIXED MOBILE BROADCASTING
	50 – 54 AMATEUR 556 557 558 560	
	54 – 68 BROADCASTING Fixed Mobile 562	54 – 68 FIXED MOBILE BROADCASTING

- 549** *Additional allocation:* in Botswana, Burundi, Lesotho, Malawi, Namibia, Rwanda, South Africa, Swaziland, Zaire, Zambia and Zimbabwe the band 41 - 44 MHz is also allocated to the aeronautical radionavigation service on a primary basis.
- 550** *Additional allocation:* in Iran and Japan, the band 41 - 44 MHz is also allocated to the radiolocation service on a secondary basis.
- 551** SUP
WARC-92
- 552** *Additional allocation:* in Australia and New Zealand, the band 44 - 47 MHz is also allocated to the broadcasting service on a primary basis.
- 553** *Additional allocation:* in Hungary, Kenya, Mongolia, Czechoslovakia and the U.S.S.R., the bands 47 - 48.5 MHz and 56.5 - 58 MHz are also allocated to the fixed and land mobile services on a secondary basis.
- 554** *Additional allocation:* in Albania, the Federal Republic of Germany, Austria, Belgium, Bulgaria, Côte d'Ivoire, Denmark, Spain, Finland, France, Gabon, Greece, Ireland, Israel, Italy, Jordan, Lebanon, Libya, Liechtenstein, Luxembourg, Madagascar, Mali, Malta, Morocco, Mauritania, Monaco, Nigeria, Norway, the Netherlands, Poland, the German Democratic Republic, the United Kingdom, Senegal, Sweden, Switzerland, Swaziland, Syria, Togo, Tunisia, Turkey and Yugoslavia, the band 47 - 68 MHz and in Romania, the band 47 - 58 MHz, are also allocated to the land mobile service on a permitted basis. However, stations of the land mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations of countries other than those mentioned in connection with the band.
- 555** *Additional allocation:* in Angola, Cameroon, the Congo, Madagascar, Mozambique, Somalia, Sudan, Tanzania and Chad, the band 47 - 68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a permitted basis.
- 556** *Alternative allocation:* in New Zealand, the band 50 - 51 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis; the band 53 - 54 MHz is allocated to the fixed and mobile services on a primary basis.
- 557** *Alternative allocation:* in Afghanistan, Bangladesh, Brunei, India, Indonesia, Iran, Malaysia, Pakistan, Singapore and Thailand, the band 50 - 54 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis.

- 558** *Additional allocation:* in Australia, China and the Democratic People's Republic of Korea, the band 50 - 54 MHz is also allocated to the broadcasting service on a primary basis.
- 559** *Alternative allocation:* in Botswana, Burundi, Lesotho, Malawi, Namibia, Rwanda, South Africa, Swaziland, Zaire, Zambia and Zimbabwe, the band 50 - 54 MHz is allocated to the amateur service on a primary basis.
- 560** *Additional allocation:* in New Zealand, the band 51 - 53 MHz is also allocated to the fixed and mobile services on a primary basis.
- 561** *Additional allocation:* in Botswana, Burundi, Lesotho, Malawi, Mali, Namibia, Rwanda, South Africa, Swaziland, Zaire, Zambia and Zimbabwe, the band 54 - 68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 562** *Different category of service:* in the French Overseas Departments in Region 2, Guyana, Jamaica and Mexico, the allocation of the band 54 - 68 MHz to the fixed and mobile services is on a primary basis (see No. 425).

- 563** *Different category of service:* in Cuba, the French Overseas Departments in Region 2, Guyana, Jamaica and Mexico, the allocation of the band 68 - 72 MHz to the fixed and mobile services is on a primary basis (see No. 425).
- 564** *Alternative allocation:* in Bulgaria, Hungary, Poland, Roumania and Czechoslovakia, the band 68 - 73 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions in the Final Acts of the Special Regional Conference, Geneva, 1960.
- 565** *Alternative allocation:* in Mongolia and the U.S.S.R., the bands 68 - 73 MHz and 76 - 87.5 MHz are allocated to the broadcasting service on a primary basis. The services to which these bands are allocated in other countries and the broadcasting service in Mongolia and the U.S.S.R. are subject to agreements with the neighbouring countries concerned.
- 566** *Additional allocation:* in Australia, China, the Republic of Korea, the Philippines, the Democratic People's Republic of Korea and Western Samoa, the band 68 - 74 MHz is also allocated to the broadcasting service on a primary basis.
- 567** *Additional allocation:* in Bulgaria, Hungary, Mongolia, Poland, Czechoslovakia and the U.S.S.R., the band 73 - 74 MHz is also allocated to the broadcasting service on a primary basis. The use of this band by the broadcasting service in Bulgaria, Hungary, Mongolia, Poland, Czechoslovakia and the U.S.S.R. is subject to agreement obtained under the procedure set forth in Article 14.
- 568** In making assignments to stations of other services to which the band 73 - 74.6 MHz is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).
- 569** SUP
WARC-92
- 570** *Additional allocation:* in Colombia, Costa Rica, Cuba, El Salvador, Ecuador, Guatemala, Guyana, Honduras and Nicaragua, the band 73 - 74.6 MHz is also allocated to the fixed and mobile services on a secondary basis.
- 571** *Additional allocation:* in Bulgaria, China, Mongolia, Poland, Czechoslovakia and the U.S.S.R., the bands 74.6 - 74.8 MHz and 75.2 - 75.4 MHz are also allocated to the aeronautical radionavigation service, on a primary basis, for ground-based transmitters only.

572 The frequency 75 MHz is assigned to marker beacons. Administrations
WARC-92 shall refrain from assigning frequencies close to the limits of the guardband to stations of other services which, because of their power or geographical position, might cause harmful interference or otherwise place a constraint on marker beacons.

Every effort should be made to improve further the characteristics of airborne receivers and to limit the power of transmitting stations close to the limits 74.8 MHz and 75.2 MHz.

572A *Additional allocation:* in Afghanistan, the Federal Republic of Germany,
Mob-87 Austria, Belgium, Cyprus, Denmark, Egypt, Spain, France, Greece, Israel, Italy, Japan, Jordan, Lebanon, Malta, Morocco, Monaco, Norway, the Netherlands, Portugal, the United Kingdom, Sweden, Switzerland, Syria and Turkey, the band 74.8 - 75.2 MHz is also allocated to the mobile service on a secondary basis subject to agreement obtained under the procedure set forth in Article 14. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of Article 14.

MHz
75.2 – 137

Allocation to Services		
Region 1	Region 2	Region 3
75.2 – 87.5 FIXED MOBILE except aeronautical mobile 565 571 575 578	75.2 – 75.4 FIXED MOBILE 571	
	75.4 – 76 FIXED MOBILE	75.4 – 87 FIXED MOBILE
	76 – 88 BROADCASTING Fixed	573 574 577 579
	Mobile 576	87 – 100 FIXED MOBILE BROADCASTING
87.5 – 100 BROADCASTING 581	88 – 100 BROADCASTING	580
100 – 108	BROADCASTING 584 585 586 587 588 589	
108 – 117.975	AERONAUTICAL RADIONAVIGATION 590A	
117.975 – 136	AERONAUTICAL MOBILE (R) 501 591 592 593 594	
136 – 137	AERONAUTICAL MOBILE (R) Fixed Mobile except aeronautical mobile (R) 591 594A 595	

- 573 *Additional allocation:* in Western Samoa, the band 75.4 - 87 MHz is also allocated to the broadcasting service on a primary basis.
- 574 *Additional allocation:* in China, the Republic of Korea, Japan, the Philippines and the Democratic People's Republic of Korea, the band 76 - 87 MHz is also allocated to the broadcasting service on a primary basis.
- 575 *Additional allocation:* in Bulgaria, Hungary, Poland, Roumania and Czechoslovakia, the band 76 - 87.5 MHz is also allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference, Geneva, 1960.
- 576 *Different category of service:* in the United States, the French Overseas Departments in Region 2, Guyana, Jamaica, Mexico and Paraguay, the allocation of the band 76 - 88 MHz to the fixed and mobile services is on a primary basis (see No. 425).
- 577 In Region 3 (except in the Republic of Korea, India, Japan, Malaysia, the Philippines, Singapore and Thailand), the band 79.75 - 80.25 MHz is also allocated to the radio astronomy service on a primary basis. In making assignments to stations of other services, administrations are urged to take all practicable steps in the band to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).
- 578 *Alternative allocation:* in Albania, the band 81 - 87.5 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference, Geneva, 1960.
- 579 *Additional allocation:* in Afghanistan and Australia, the band 85 - 87 MHz is also allocated to the broadcasting service on a primary basis. The introduction of the broadcasting service in these countries is subject to special agreements between the administrations concerned.
- 580 *Alternative allocation:* in New Zealand, the band 87 - 88 MHz is allocated to the land mobile service on a primary basis.
- 581 *Additional allocation:* in the Federal Republic of Germany, France, WARC-92 Ireland, Israel, Italy, Liechtenstein, Monaco, the United Kingdom and Switzerland, the band 87.5 - 88 MHz is also allocated to the land mobile service on a permitted basis and subject to agreement obtained under the procedure set forth in Article 14.

582 SUP
WARC-92

583 SUP
Mob-87

584 Broadcasting stations in the band 100 - 108 MHz in Region 1 shall be established and operated in accordance with an agreement and associated plan for the band 87.5 - 108 MHz to be drawn up by a regional broadcasting conference (see Resolution **510**). Prior to the date of entry into force of this agreement, broadcasting stations may be introduced subject to agreement between administrations concerned, on the understanding that such an operation shall in no case prejudice the establishment of the plan.

585 *Additional allocation:* in China, the Republic of Korea, the Philippines and Singapore, the band 100 - 108 MHz is also allocated to the fixed and mobile services on a permitted basis.

586 *Alternative allocation:* in New Zealand, the band 100 - 108 MHz is allocated to the land mobile service on a primary basis and to the broadcasting service on a secondary basis.

587 *Additional allocation:* in Bulgaria, Israel, Kenya, Lebanon, Mongolia, the **WARC-92** German Democratic Republic, the United Kingdom, Somalia, Syria, Czechoslovakia, Turkey and the USSR, the band 104 - 108 MHz is also allocated to the mobile, except aeronautical mobile (R), service on a permitted basis until 31 December 1995 and, thereafter, on a secondary basis.

588 *Additional allocation:* in Finland and Yugoslavia, the band 104 - 108 MHz is also allocated to the fixed service on a permitted basis, until 31 December 1995. The effective radiated power of any station shall not exceed 25 W.

589 *Additional allocation:* in France, Romania, Sweden and Yugoslavia, the **Mob-87** band 104 - 108 MHz is also allocated to the mobile, except aeronautical mobile (R), service on a permitted basis until 31 December 1995.

590 SUP
Mob-87

590A *Additional allocation:* in Afghanistan, the Federal Republic of Germany, **Mob-87** Austria, Cyprus, Denmark, Egypt, Spain, France, Israel, Italy, Japan, Jordan, Lebanon, Malta, Morocco, Monaco, Norway, Pakistan, Portugal, the United Kingdom, Sweden, Switzerland, Syria and Turkey, the band 108 - 111.975 MHz is also allocated to the mobile service on a secondary basis

subject to agreement obtained under the procedure set forth in Article 14. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of Article 14.

591 Subject to agreement obtained under the procedure set forth in Article 14, the band 117.975 - 137 MHz is also allocated to the aeronautical mobile-satellite (R) service on a secondary basis and on the condition that harmful interference is not caused to the aeronautical mobile (R) service.

592 The bands 121.45 - 121.55 MHz and 242.95 - 243.05 MHz are also allocated to the mobile-satellite service for the reception on board satellites of emissions from emergency position-indicating radiobeacons transmitting at 121.5 MHz and 243 MHz (see Nos. 3259 and 3267).

593 In the band 117.975 - 136 MHz, the frequency 121.5 MHz is the aeronautical emergency frequency and, where required, the frequency 123.1 MHz is the aeronautical frequency auxiliary to 121.5 MHz. Mobile stations of the maritime mobile service may communicate on these frequencies under the conditions laid down in Articles 38 and N 38 for distress and safety purposes with stations of the aeronautical mobile service.

594 *Additional allocation:* in Angola, Bulgaria, Hungary, Iran, Iraq, Japan, Mongolia, Mozambique, Papua New Guinea, Poland, the German Democratic Republic, Roumania, Czechoslovakia and the U.S.S.R., the band 132 - 136 MHz is also allocated to the aeronautical mobile (OR) service on a permitted basis.

594A *Different category of service:* as from 1 January 1990, in Bulgaria, Poland, the German Democratic Republic, Romania, Czechoslovakia, Turkey and the USSR, the allocation of the band 136 - 137 MHz to the aeronautical mobile (OR) service is on a permitted basis.

595 Until 1 January 1990, the band 136 - 137 MHz is also allocated to the space operation service (space-to-Earth), meteorological-satellite service (space-to-Earth) and the space research service (space-to-Earth) on a primary basis. The introduction of stations of the aeronautical mobile (R) service shall only occur after that date. After 1 January 1990, the band 136 - 137 MHz will also be allocated to the above-mentioned space radiocommunication services on a secondary basis (see Resolution 408 (Mob-87)).

MHz
137 – 138

Allocation to Services		
Region 1	Region 2	Region 3
137 – 137.025	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 599B SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 596 597 598 599 599A	
137.025 – 137.175	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-Satellite (space-to-Earth) 599B Mobile except aeronautical mobile (R) 596 597 598 599 599A	
137.175 – 137.825	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 599B SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 596 597 598 599 599A	
137.825 – 138	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-Satellite (space-to-Earth) 599B Mobile except aeronautical mobile (R) 596 597 598 599 599A	

596 *Different category of service:* in Afghanistan, Saudi Arabia, Bahrain, WARC-92 Bangladesh, Brunei, Darussalam, China, Cuba, the United Arab Emirates, India, Indonesia, Iran, Iraq, Malaysia, Oman, Pakistan, Philippines, Qatar, Singapore, Sri Lanka, Thailand, Yemen and Yugoslavia, the band 137 - 138 MHz is allocated to the fixed and mobile, except aeronautical mobile (R), services is on a primary basis (see No. 425).

597 *Different category of service:* in Israel and Jordan, the allocation of the WARC-92 band 137 - 138 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. 425).

598 *Different category of service:* in Austria, Bulgaria, Egypt, Finland, WARC-92 France, Greece, Hungary, the Lebanon, Mongolia, Poland, the German Democratic Republic, Romania, Syria, Czechoslovakia and the U.S.S.R., the allocation of the band 137 - 138 MHz to the aeronautical mobile (OR) service is on a primary basis (see No. 425).

599 *Additional allocation:* in Australia, the band 137 - 144 MHz is also allocated to the broadcasting service on a primary basis until that service can be accommodated within regional broadcasting allocations.

599A The use of the band 137 - 138 MHz by the mobile-satellite service is WARC-92 subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC-92). However, coordination of a space station of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds $-125 \text{ dB(W/m}^2/4 \text{ kHz)}$ at the Earth's surface. The above power flux-density limit shall apply until such time as a competent world administrative radio conference revises it. In making assignments to the space stations in the mobile-satellite service in the above band, administrations shall take all practicable steps to protect the radio astronomy service in the 150.05 - 153 MHz band from harmful interference from unwanted emissions.

599B The use of the bands 137 - 138 MHz, 148 - 149.9 MHz and 400.15 - WARC-92 401 MHz by the mobile-satellite service and the band 149.9 - 150.05 MHz by the land mobile-satellite service is limited to non-geostationary-satellite systems.

MHz
138 – 148

Allocation to Services		
Region 1	Region 2	Region 3
138 – 143.6 AERONAUTICAL MOBILE (OR) 600 601 602 604	138 – 143.6 FIXED MOBILE /RADIOLOCATION/ Space Research (space-to-Earth)	138 – 143.6 FIXED MOBILE Space Research (space-to-Earth) 599 603
143.6 – 143.65 AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-to-Earth) 601 602 604	143.6 – 143.65 FIXED MOBILE SPACE RESEARCH (space-to-Earth) /RADIOLOCATION/	143.6 – 143.65 FIXED MOBILE SPACE RESEARCH (space-to-Earth) 599 603
143.65 – 144 AERONAUTICAL MOBILE (OR) 600 601 602 604	143.65 – 144 FIXED MOBILE /RADIOLOCATION/ Space Research (space-to-Earth)	143.65 – 144 FIXED MOBILE Space Research (space-to-Earth) 599 603
144 – 146 AMATEUR 510 AMATEUR-SATELLITE 605 606		
146 – 148 FIXED MOBILE except aeronautical mobile (R)	146 – 148 AMATEUR 607	146 – 148 AMATEUR FIXED MOBILE 607

- 600 *Additional allocation:* in the Federal Republic of Germany, Austria, Belgium, France, Israel, Italy, Liechtenstein, Luxembourg, the United Kingdom, Sweden, Switzerland and Czechoslovakia, the bands 138 - 143.6 MHz and 143.65 - 144 MHz are also allocated to the space research service (space-to-Earth) on a secondary basis.
- 601 *Additional allocation:* in the Federal Republic of Germany, Saudi Arabia, Austria, Bahrain, Belgium, Denmark, The United Arab Emirates, Spain, Finland, Greece, Ireland, Israel, Kenya, Kuwait, Liechtenstein, Luxembourg, Mali, Malta, Norway, the Netherlands, Qatar, the United Kingdom, Somalia, Sweden, Switzerland, Tanzania, Tunisia, Turkey and Yugoslavia, the band 138 - 144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis.
- 602 *Alternative allocation:* in Angola, Botswana, Burundi, Cameroon, the Central African Republic, the Congo, Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Lesotho, Liberia, Libya, Malawi, Mozambique, Namibia, Nigeria, Oman, Rwanda, Sierra Leone, South Africa, Swaziland, Chad, Togo, Zaire, Zambia and Zimbabwe, the band 138 - 144 MHz is allocated to the fixed and mobile services on a primary basis.
- 603 *Additional allocation:* in China, the band 138 - 144 MHz is also allocated to the radiolocation service on a primary basis.
- 604 *Additional allocation:* in Ethiopia, Finland, Kenya, Malta, Somalia, WARC-92 Sudan, Tanzania and Yugoslavia, the band 138 - 144 MHz is also allocated to the fixed service on a primary basis.
- 605 *Additional allocation:* in Singapore, the band 144 - 145 MHz is also allocated to the fixed and mobile services on a primary basis. Such use is limited to systems in operation on or before 1 January 1980, which in any case shall cease by 31 December 1995.
- 606 *Additional allocation:* in China, the band 144 - 146 MHz is also allocated to the aeronautical mobile (OR) service on a secondary basis.
- 607 *Alternative allocation:* in Afghanistan, Bangladesh, Cuba, Guyana and India, the band 146 - 148 MHz is allocated to the fixed and mobile services on a primary basis.

MHz
148 – 156.8375

Allocation to Services		
Region 1	Region 2	Region 3
148 – 149.9 FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 599B 608 608A 608C	148 – 149.9 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 599B 608 608A 608C	
149.9 – 150.05	LAND MOBILE-SATELLITE (Earth-to-space) 599B 609B RADIONAVIGATION-SATELLITE 608B 609 609A	
150.05 – 153 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 610	150.05 – 156.7625 FIXED MOBILE 611 613 613A	
153 – 154 FIXED MOBILE except aeronautical mobile (R) Meteorological Aids		
154 – 156.7625 FIXED MOBILE except aeronautical mobile (R) 613 613A		
156.7625 – 156.8375	MARITIME MOBILE (distress and calling) 501 613	

608 Subject to agreement obtained under the procedure set forth in Article 14, the band 148 - 149.9 MHz may be used by the space operation service (Earth-to-space). The bandwidth of an individual transmission shall not exceed ± 25 kHz.

608A The use of the band 148 - 149.9 MHz by the mobile-satellite service is
WARC-92 subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC-92). The mobile-satellite service shall not constrain the development and use of fixed, mobile and space operation services in the band 148 - 149.9 MHz. Mobile earth stations in the mobile-satellite service shall not produce a power flux-density in excess of -150 dB(W/m²/4 kHz) outside national boundaries.

608B The use of the band 149.9 - 150.05 MHz by the land mobile-satellite
WARC-92 service is subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC-92). The land mobile-satellite service shall not constrain the development and use of the radionavigation-satellite service in the band 149.9 - 150.05 MHz. Land mobile earth stations of the land mobile-satellite service shall not produce power flux-density in excess of -150 dB(W/m²/4 kHz) outside national boundaries.

608C Stations of the mobile-satellite service in the band 148 - 149.9 MHz shall
WARC-92 not cause harmful interference to, or claim protection from stations of the fixed or mobile services in the following countries: Algeria, the Federal Republic of Germany, Saudi Arabia, Australia, Austria, Bangladesh, Belarus, Belgium, Brunei Darussalam, Bulgaria, Cameroon, Canada, Cyprus, Colombia, Congo, Cuba, Denmark, Egypt, the United Arab Emirates, Ecuador, Spain, Ethiopia, the Russian Federation, Finland, France, Ghana, Greece, Honduras, Hungary, Iran, Ireland, Iceland, Israel, Italy, Japan, Jordan, Kenya, Libya, Liechtenstein, Luxembourg, Malaysia, Mali, Malta, Mauritania, Mozambique, Namibia, Norway, New Zealand, Oman, Pakistan, Panama, Papua New Guinea, the Netherlands, Philippines, Poland, Portugal, Qatar, Syria, Romania, the United Kingdom, Singapore, Sri Lanka, Sweden, Switzerland, Suriname, Swaziland, Tanzania, Chad, the Czech and Slovak Federal Republic, Thailand, Tunisia, Turkey, Ukraine, Yemen and Yugoslavia that operate in accordance with the Table of Frequency Allocations.

609 Emissions of the radionavigation-satellite service in the bands 149.9 - 150.05 MHz and 399.9 - 400.05 MHz may also be used by receiving earth stations of the space research service.

609A Recognizing that the use of the band 149.9 - 150.05 MHz by the fixed
Mob-87 and mobile services may cause harmful interference to the radionavigation-satellite service, administrations are urged not to authorize such use in application of No. 342.

609B In the band 149.9 - 150.05 MHz, the allocation to the land mobile-
WARC-92 satellite service shall be on a secondary basis until 1 January 1997.

610 In making assignments to stations of other services to which the band
 150.05 - 153 MHz is allocated, administrations are urged to take all
 practicable steps to protect the radio astronomy service from harmful inter-
 ference. Emissions from space or airborne stations can be particularly serious
 sources of interference to the radio astronomy service (see Nos. **343** and **344**
 and Article **36**).

611 *Additional allocation:* in Australia and India, the band 150.05 - 153 MHz
 is also allocated to the radio astronomy service on a primary basis.

612 SUP
WARC-92

613 The frequency 156.8 MHz is the international distress, safety and calling
Mob-87 frequency for the maritime mobile VHF radiotelephone service. The con-
 ditions for the use of this frequency are contained in Articles **38** and **N 38**.

In the bands 156 - 156.7625 MHz, 156.8375 - 157.45 MHz, 160.6 -
 160.975 MHz and 161.475 - 162.05 MHz, each administration shall give
 priority to the maritime mobile service on only such frequencies as are
 assigned to stations of the maritime mobile service by the administration (see
 Articles **38**, **N 38** and **60**).

Any use of frequencies in these bands by stations of other services to
 which they are allocated should be avoided in areas where such use might
 cause harmful interference to the maritime mobile VHF radiocommunication
 service.

However, the frequency 156.8 MHz and the frequency bands in which
 priority is given to the maritime mobile service may be used for radio-
 communications on inland waterways subject to agreement between inter-
 ested and affected administrations and taking into account current frequency
 usage and existing agreements.

613A In the maritime mobile VHF service the frequency 156.525 MHz is to be
Mob-87 used exclusively for digital selective calling for distress, safety and calling
 (see Resolution **323 (Mob-87)**). The conditions for the use of this frequency
 are prescribed in Articles **38**, **N 38** and **60** and in Appendix **18**.

MHz
156.8375 – 235

Allocation to Services		
Region 1	Region 2	Region 3
156.8375 – 174 FIXED MOBILE except aeronautical mobile 613 613B 615	156.8375 – 174 FIXED MOBILE 613 616 617 618	
174 – 223 BROADCASTING 621 623 628 629	174 – 216 BROADCASTING Fixed Mobile 620	174 – 223 FIXED MOBILE BROADCASTING 619 624 625 626 630
	216 – 220 FIXED MARITIME MOBILE Radiolocation 627 627A	
	220 – 225 AMATEUR FIXED MOBILE Radiolocation 627	
223 – 230 BROADCASTING Fixed Mobile 622 628 629 631 632 635	225 – 235 FIXED MOBILE	223 – 230 FIXED MOBILE BROADCASTING AERONAUTICAL RADIONAVIGATION Radiolocation 636 637
230 – 235 FIXED MOBILE 629 632 635 638 639		230 – 235 FIXED MOBILE AERONAUTICAL RADIONAVIGATION 637

613B *Additional allocation:* in Ireland and in the United Kingdom, the band
Mob-87 161.3875 - 161.4125 MHz is also allocated to the maritime radionavigation service on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.

614 SUP

WARC-92

615 *Alternative allocation:* in Morocco, the band 162 - 174 MHz is allocated to the broadcasting service on a primary basis. The use of this band shall be subject to agreement with administrations having services, operating or planned, in accordance with the Table which are likely to be affected. Stations in existence on 1 January 1981, with their technical characteristics as of that date, are not affected by such agreement.

616 *Additional allocation:* in China, the band 163 - 167 MHz is also allocated to the space operation service (space-to-Earth) on a primary basis subject to agreement obtained under the procedure set forth in Article 14.

617 *Additional allocation:* in Afghanistan, China and Pakistan, the band 167 - 174 MHz is also allocated to the broadcasting service on a primary basis. The introduction of the broadcasting service into this band shall be subject to agreement with the neighbouring countries in Region 3 whose services are likely to be affected.

618 *Additional allocation:* in Japan, the band 170 - 174 MHz is also allocated to the broadcasting service on a primary basis.

619 *Additional allocation:* in China, the band 174 - 184 MHz is also allocated to the space research (space-to-Earth) and the space operation (space-to-Earth) services on a primary basis subject to agreement obtained under the procedure set forth in Article 14. These services shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations.

620 *Different category of service:* in Mexico, the allocation of the band 174 - 216 MHz to the fixed and mobile services is on a primary basis (see No. 425).

621 *Additional allocation:* in the Federal Republic of Germany, Austria,
WARC-92 Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Malta, Monaco, Norway, the Netherlands, the United Kingdom, Sweden, and Switzerland, the band 174 - 223 MHz is also allocated to the land mobile service on a permitted basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, broadcasting stations, existing or planned, in countries other than those listed in this footnote.

- 622** *Different category of service:* In the Federal Republic of Germany, WARC-92 Austria, Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Luxembourg, Malta, Monaco, Norway, the Netherlands, Portugal, the United Kingdom, Sweden and Switzerland, the band 223 - 230 MHz is allocated to the land mobile service on a permitted basis (see No. 425). However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, broadcasting stations, existing or planned, in countries other than those listed in this footnote.
- 623** *Additional allocation:* in the Congo, Ethiopia, Gambia, Guinea, Kenya, Libya, Malawi, Mali, Uganda, Senegal, Sierra Leone, Somalia, Tanzania and Zimbabwe, the band 174 - 223 MHz is also allocated to the fixed and mobile services on a secondary basis.
- 624** *Additional allocation:* in Bangladesh, India, Pakistan and the Philippines, the band 200 - 216 MHz is also allocated to the aeronautical radionavigation service on a primary basis.
- 625** *Additional allocation:* in Australia and Papua New Guinea, the bands 204 - 208 MHz and 222 - 223 MHz are also allocated to the aeronautical radionavigation service on a primary basis.
- 626** *Additional allocation:* In China, India and Thailand, the band 216 - 223 MHz is also allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis.
- 627** In Region 2, no new stations in the radiolocation service may be authorized in the band 216 - 225 MHz. Stations authorized prior to 1 January WARC-92 1990 may continue to operate on a secondary basis.
- 627A** *Additional allocation:* in Canada, the band 216 - 220 MHz is also allocated to the land mobile service on a primary basis. Mob-87
- 628** *Additional allocation:* in Somalia, the band 216 - 225 MHz is also allocated to the aeronautical radionavigation service on a primary basis, subject to not causing harmful interference to existing or planned broadcasting services in other countries.
- 629** *Additional allocation:* in Oman, the United Kingdom and Turkey, the band 216 - 235 MHz is also allocated to the radiolocation service on a secondary basis.
- 630** *Additional allocation:* in Japan, the band 222 - 223 MHz is also allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis.

- 631** *Different category of service:* in Spain and Portugal, the band 223 - 230 MHz is allocated to the fixed service on a permitted basis (see No. 425). Stations of this service shall not cause harmful interference to, or claim protection from, broadcasting stations of other countries, whether existing or planned, that operate in accordance with the Table.
- 632** *Additional allocation:* in Saudi Arabia, Bahrain, the United Arab Emirates, Israel, Jordan, Oman, Qatar and Syria, the band 223 - 235 MHz is also allocated to the aeronautical radionavigation service on a permitted basis.
- 633 and 634** SUP
WARC-92
- 635** *Alternative allocation:* in Botswana, Lesotho, Malawi, Mozambique, WARC-92 Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the bands 223 - 238 MHz and 246 - 254 MHz are allocated to the broadcasting service on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.
- 636** *Alternative allocation:* in New Zealand, Western Samoa and the Niue and Cook Islands, the band 225 - 230 MHz is allocated to the fixed, mobile and aeronautical radionavigation services on a primary basis.
- 637** *Additional allocation:* in China, the band 225 - 235 MHz is also allocated to the radio astronomy service on a secondary basis.
- 638** *Additional allocation:* in Nigeria, the band 230 - 235 MHz is also allocated to the aeronautical radionavigation service on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.
- 639** *Additional allocation:* in Yugoslavia, the band 230 - 235 MHz is also allocated to the aeronautical radionavigation service on a primary basis, until 1 January 1995. The use of this band by the aeronautical radionavigation service in Yugoslavia is restricted to the stations in operation by 1 January 1980.

MHz
235 – 335.4

Allocation to Services		
Region 1	Region 2	Region 3
235 – 267	FIXED MOBILE 501 592 635 640 641 642	
267 – 272	FIXED MOBILE Space Operation (space-to-Earth) 641 643	
272 – 273	SPACE OPERATION (space-to-Earth) FIXED MOBILE 641	
273 – 312	FIXED MOBILE 641	
312 – 315	FIXED MOBILE Mobile-Satellite (Earth-to-space) 641 641A	
315 – 322	FIXED MOBILE 641	
322 – 328.6	FIXED MOBILE RADIO ASTRONOMY 644	
328.6 – 335.4	AERONAUTICAL RADIONAVIGATION 645 645A	

- 640** *Additional allocation:* in New Zealand, the band 235 - 239.5 MHz is also allocated to the aeronautical radionavigation service on a primary basis.
- 641** Subject to agreement obtained under the procedure set forth in Article 14, the bands 235 - 322 MHz and 335.4 - 399.9 MHz may be used by the mobile-satellite service, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table.
- 641A** The bands 312 - 315 MHz (Earth-to-space) and 387 - 390 MHz (space-to-
WARC-92 Earth) in the mobile-satellite service may also be used by non-geostationary-satellite systems. Such use is subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC-92).
- 642** The frequency 243 MHz is the frequency in this band for use by survival
Mob-87 craft stations and equipment used for survival purposes (see Article 38).
- 643** Subject to agreement obtained under the procedure set forth in Article 14, the band 267 - 272 MHz may be used by administrations for space telemetry in their countries on a primary basis.
- 644** In making assignments to stations of other services to which the band 322 - 328.6 MHz is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).
- 645** Limited to Instrument Landing Systems (glide path).
- 645A** *Additional allocation:* in Afghanistan, the Federal Republic of Germany,
Mob-87 Austria, Belgium, Cyprus, Denmark, Egypt, Spain, France, Greece, Israel, Italy, Japan, Jordan, Malta, Morocco, Monaco, Norway, the Netherlands, Portugal, the United Kingdom, Sweden, Switzerland, Syria and Turkey, the band 328.6 - 335.4 MHz is also allocated to the mobile service on a secondary basis subject to agreement obtained under the procedure set forth in Article 14. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of Article 14.

MHz
335.4 – 402

Allocation to Services		
Region 1	Region 2	Region 3
335.4 – 387	FIXED MOBILE 641	
387 – 390	FIXED MOBILE Mobile-Satellite (space-to-Earth) 641 641A	
390 – 399.9	FIXED MOBILE 641	
399.9 – 400.05	RADIONAVIGATION-SATELLITE 609 645B	
400.05 – 400.15	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 646 647	
400.15 – 401	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 599B SPACE RESEARCH (space-to-Earth) 647A Space Operation (space-to-Earth) 647 647B	
401 – 402	METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) Earth Exploration-Satellite (Earth-to-space) Fixed Meteorological-Satellite (Earth-to-space) Mobile except aeronautical mobile	

645B Recognizing that the use of the band 399.9 - 400.05 MHz by the fixed
Mob-87 and mobile services may cause harmful interference to the radionavigation satellite service, administrations are urged not to authorize such use in application of No. 342.

646 Emissions shall be confined in a band of ± 25 kHz about the standard frequency 400.1 MHz.

647 *Additional allocation:* in Afghanistan, Saudi Arabia, Bahrain, Bulgaria,
WARC-92 Colombia, Costa Rica, Cuba, Egypt, the United Arab Emirates, Ecuador, Hungary, Indonesia, Iran, Iraq, Israel, Jordan, Kuwait, Liberia, Malaysia, Nigeria, Oman, Pakistan, the Philippines, Poland, Qatar, Syria, the German Democratic Republic, Romania, Singapore, Somalia, Sri Lanka, Czechoslovakia, Thailand, the U.S.S.R. and Yugoslavia, the band 400.05 - 401 MHz is also allocated to the fixed and mobile services on a primary basis.

647A The band 400.15 - 401 MHz is also allocated to the space research service
WARC-92 in the space-to-space direction for communications with manned space vehicles. In this application, the space research service will not be regarded as a safety service.

647B The use of the band 400.15 - 401 MHz by the mobile-satellite service is
WARC-92 subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC-92). However, coordination of a space station of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds -125 dB(W/m²/4 kHz) at the Earth's surface. The above power flux-density limit shall apply until such time as a competent world administrative radio conference revises it. In making assignments to the space stations in the mobile-satellite service in the above band, administrations shall take all practicable steps to protect the radio astronomy service in the band 406.1 - 410 MHz from harmful interference from unwanted emissions.

MHz
402 – 430

Allocation to Services		
Region 1	Region 2	Region 3
402 – 403	METEOROLOGICAL AIDS Earth Exploration-Satellite (Earth-to-space) Fixed Meteorological-Satellite (Earth-to-space) Mobile except aeronautical mobile	
403 – 406	METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile 648	
406 – 406.1	MOBILE-SATELLITE (Earth-to-space) 649 649A	
406.1 – 410	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 648 650	
410 – 420	FIXED MOBILE except aeronautical mobile Space Research (space-to-space) 651A	
420 – 430	FIXED MOBILE except aeronautical mobile Radiolocation 651 652 653	

- 648** *Additional allocation:* in Canada, the bands 405.5 - 406 MHz and 406.1 - 410 MHz are also allocated to the mobile-satellite, except aeronautical mobile-satellite, service (Earth-to-space), on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.
- 649** The use of the band 406 - 406.1 MHz by the mobile-satellite service is
Mob-87 limited to low power satellite emergency position-indicating radiobeacons (see also Articles 38 and N 38).
- 649A** Any emission capable of causing harmful interference to the authorized
Mob-87 uses of the band 406 - 406.1 MHz is prohibited.
- 650** In making assignments to stations of other services to which the band 406.1 - 410 MHz is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).
- 651** *Different category of service:* in Australia, the United States, India, Japan and the United Kingdom, the allocation of the bands 420 - 430 MHz and 440 - 450 MHz to the radiolocation service is on a primary basis (see No. 425).
- 651A** Use of the band 410 - 420 MHz by the space research service is limited to
WARC-92 communications within 5 km of an orbiting, manned space vehicle.
- 652** *Additional allocation:* in Australia, the United States, Jamaica and the Philippines, the bands 420 - 430 MHz and 440 - 450 MHz are also allocated to the amateur service on a secondary basis.
- 653** *Additional allocation:* in China, India, the German Democratic Republic, the United Kingdom and the U.S.S.R., the band 420 - 460 MHz is also allocated to the aeronautical radionavigation service (radio altimeters) on a secondary basis.

MHz
430 – 470

Allocation to Services		
Region 1	Region 2	Region 3
430 – 440 AMATEUR RADIOLOCATION 653 654 655 656 657 658 659 661 662 663 664 665	430 – 440 RADIOLOCATION Amateur 653 658 659 660 660A 663 664	
440 – 450	FIXED MOBILE except aeronautical mobile Radiolocation 651 652 653 666 667 668	
450 – 460	FIXED MOBILE 653 668 669 670	
460 – 470	FIXED MOBILE Meteorological-Satellite (space-to-Earth) 669 670 671 672	

- 654** *Different category of service:* in France, the allocation of the band 430 - 434 MHz to the amateur service is on a secondary basis (see No. 424).
- 655** *Different category of service:* in Denmark, Libya, Norway and Sweden, the allocation of the bands 430 - 432 MHz and 438 - 440 MHz to the radio-location service is on a secondary basis (see No. 424).
- 656** *Alternative allocation:* in Denmark, Norway and Sweden, the bands 430 - 432 MHz and 438 - 440 MHz are allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 657** *Additional allocation:* in Finland, Libya and Yugoslavia, the bands 430 - 432 MHz and 438 - 440 MHz are also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 658** *Additional allocation:* in Afghanistan, Algeria, Saudi Arabia, Bahrain, WARC-92 Bangladesh, Brunei Darussalam, Burkina Faso, Burundi, Egypt, the United Arab Emirates, Ecuador, Ethiopia, Greece, Guinea, India, Indonesia, Iran, Iraq, Israel, Italy, Jordan, Kenya, Kuwait, the Lebanon, Libya, Liechtenstein, Malaysia, Malta, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Singapore, Somalia, Switzerland, Tanzania, Thailand, Togo, Turkey and Yemen, the band 430 - 440 MHz is also allocated to the fixed service on a primary basis and the bands 430 - 435 MHz and 438 - 440 MHz are also allocated to the mobile, except aeronautical mobile, service on a primary basis.
- 659** *Additional allocation:* in Angola, Bulgaria, Cameroon, the Congo, WARC-92 Djibouti, Gabon, Hungary, Malawi, Mali, Mongolia, Niger, Pakistan, Poland, the German Democratic Republic, Dem. People's Rep. of Korea, Romania, Rwanda, Chad, Czechoslovakia and the U.S.S.R., the band 430 - 440 MHz is also allocated to the fixed service on a primary basis.
- 660** *Different category of service:* in Argentina, Colombia, Costa Rica, Cuba, Guyana, Honduras, Panama and Venezuela, the allocation of the band 430 - 440 MHz to the amateur service is on a primary basis (see No. 425).
- 660A** *Additional allocation:* in Mexico, the bands 430 - 435 MHz and 438 - Mob-87 440 MHz are also allocated on a primary basis to the land mobile service, subject to agreement obtained under the procedure set forth in Article 14.

- 661** In Region 1, except in the countries mentioned in No. 662, the band 433.05 - 434.79 MHz (centre frequency 433.92 MHz) is designated for industrial, scientific and medical (ISM) applications. The use of this frequency band for ISM applications shall be subject to special authorization by the administration concerned, in agreement with other administrations whose radiocommunication services might be affected. In applying this provision, administrations shall have due regard to the latest relevant CCIR Recommendations.
- 662** In the Federal Republic of Germany, Austria, Liechtenstein, Portugal, Switzerland and Yugoslavia, the band 433.05 - 434.79 MHz (centre frequency 433.92 MHz) is designated for industrial, scientific and medical (ISM) applications. Radiocommunication services of these countries operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. 1815.
- 663** *Additional allocation:* in the French Overseas Departments in Region 2 and India, the band 433.75 - 434.25 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis. In France and in Brazil, the band is allocated to the same service on a secondary basis.
- 664** In the bands 435 - 438 MHz, 1 260 - 1 270 MHz, 2 400 - 2 450 MHz, 3 400 - 3 410 MHz (in Regions 2 and 3 only) and 5 650 - 5 670 MHz, the amateur-satellite service may operate subject to not causing harmful interference to other services operating in accordance with the Table (see No. 435). Administrations authorizing such use shall ensure that any harmful interference caused by emissions from a station in the amateur-satellite service is immediately eliminated in accordance with the provisions of No. 2741. The use of the bands 1 260 - 1 270 MHz and 5 650 - 5 670 MHz by the amateur-satellite service is limited to the Earth-to-space direction.
- 665** *Additional allocation:* in Austria, the band 438 - 440 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 666** *Additional allocation:* in Canada, New Zealand and Papua New Guinea, the band 440 - 450 MHz is also allocated to the amateur service on a secondary basis.
- 667** *Different category of service:* in Canada, the allocation of the band 440 - 450 MHz to the radiolocation service is on a primary basis (see No. 425).

- 668** Subject to agreement obtained under the procedure set forth in Article 14, the band 449.75 - 450.25 MHz may be used for the space operation service (Earth-to-space) and the space research service (Earth-to-space).
- 669** In the maritime mobile service, the frequencies 457.525 MHz, 457.550 MHz, 457.575 MHz, 467.525 MHz, 467.550 MHz and 467.575 MHz may be used by on-board communication stations. The use of these frequencies in territorial waters may be subject to the national regulations of the administration concerned. The characteristics of the equipment used shall conform to those specified in Appendix 20.
- 670** In the territorial waters of Canada, the United States and the Philippines, the preferred frequencies for use by on-board communication stations shall be 457.525 MHz, 457.550 MHz, 457.575 MHz and 457.600 MHz paired, respectively, with 467.750 MHz, 467.775 MHz, 467.800 MHz and 467.825 MHz. The characteristics of the equipment used shall conform to those specified in Appendix 20.
- 671** Earth exploration-satellite service applications, other than the meteorological-satellite service, may also be used in the bands 460 - 470 MHz and 1 690 - 1 710 MHz for space-to-Earth transmissions subject to not causing harmful interference to stations operating in accordance with the Table.
- 672** *Different category of service:* in Afghanistan, Bulgaria, China, Cuba, Japan, Mongolia, Poland, Czechoslovakia and the U.S.S.R., the allocation of the band 460 - 470 MHz to the meteorological-satellite service (space-to-Earth) is on a primary basis (see No. 425) and is subject to agreement obtained under the procedure set forth in Article 14.

WARC-92

MHz
470 – 890

Allocation to Services		
Region 1	Region 2	Region 3
470 – 790 BROADCASTING 676 677A 683 684 685 686 686A 687 689 693 694	470 – 512 BROADCASTING Fixed Mobile 674 675	470 – 585 FIXED MOBILE BROADCASTING 673 677 679
	512 – 608 BROADCASTING 678	585 – 610 FIXED MOBILE BROADCASTING RADIONAVIGATION 688 689 690
	608 – 614 RADIO ASTRONOMY Mobile-Satellite except aeronautical mobile- satellite (Earth-to-space)	610 – 890 FIXED MOBILE BROADCASTING
	614 – 806 BROADCASTING Fixed Mobile 675 692 692A 693	
790 – 862 FIXED BROADCASTING 694 695 695A 696 697 700B 702	806 – 890 FIXED MOBILE BROADCASTING	
862 – 890 FIXED MOBILE except aeronautical mobile BROADCASTING 703 700B 704	692A 700 700A	677 688 689 690 691 693 701

- 673** *Additional allocation:* in China, the band 470 - 485 MHz is also allocated to the space research (space-to-Earth) and the space operation (space-to-Earth) services on a primary basis subject to agreement obtained under the procedure set forth in Article 14, subject to not causing harmful interference to existing and planned broadcasting stations.
- 674** *Different category of service:* in Mexico and Venezuela, the allocation of the band 470 - 512 MHz to the fixed and mobile services, and in Argentina and Uruguay to the mobile service, is on a primary basis (see No. 425), subject to agreement obtained under the procedure set forth in Article 14.
- 675** *Different category of service:* in Chile, Colombia, Cuba, Ecuador, the WARC-92 United States, Guyana, Honduras, Jamaica, Mexico and Panama, the allocation of the bands 470 - 512 MHz and 614 - 806 MHz to the fixed and mobile services is on a primary basis (see No. 425), subject to agreement obtained under the procedure set forth in Article 14.
- 676** *Additional allocation:* in Burundi, Cameroon, the Congo, Ethiopia, Israel, WARC-92 Kenya, Lebanon, Libya, Malawi, Senegal, Sudan, Syria, and Yemen, the band 470 - 582 MHz is also allocated to the fixed service on a secondary basis.
- 677** *Alternative allocation:* in Pakistan, the bands 470 - 582 MHz and 610 - 890 MHz are allocated to the broadcasting service on a primary basis.
- 677A** *Additional allocation:* in the Federal Republic of Germany, Austria, Mob-87 Belgium, Cyprus, Denmark, Spain, Finland, France, Ireland, Israel, Italy, Libya, Malta, Morocco, Monaco, Norway, the Netherlands, Portugal, the United Kingdom, Sweden, Switzerland, Swaziland, Syria, Tunisia and Turkey, the band 470 - 790 MHz is also allocated on a secondary basis to the land mobile service, intended for applications ancillary to broadcasting. Stations of the land mobile service in the countries mentioned in this footnote, shall not cause harmful interference to existing or planned stations operating in accordance with the Table of Frequency Allocations in countries other than those listed in this footnote.
- 678** *Additional allocation:* in Costa Rica, Cuba, El Salvador, Ecuador, the WARC-92 United States, Guatemala, Guyana, Honduras, Jamaica, Mexico and Venezuela, the band 512 - 608 MHz is also allocated to the fixed and mobile services on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.
- 679** *Additional allocation:* in India, the band 549.75 - 550.25 MHz is also allocated to the space operation service (space-to-Earth) on a secondary basis.

680* and 681 SUP
Mob-87

682 SUP
WARC-92

683 - *Additional allocation:* in Oman, the band 582 - 606 MHz is also allocated to the radionavigation service on a secondary basis.

684 *Additional allocation:* in Israel, Libya, Syria and Sudan, the band 582 - 790 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis.

685 *Additional allocation:* in Denmark and Kuwait, the band 590 - 598 MHz is also allocated to the aeronautical radionavigation service on a primary basis until 1 January 1995.

686 *Additional allocation:* in the United Kingdom, the band 590 - 598 MHz is also allocated to the aeronautical radionavigation service on a primary basis. All new assignments to stations in the aeronautical radionavigation service, including those transferred from the adjacent bands, shall be subject to coordination with the Administrations of the following countries: the Federal Republic of Germany, Belgium, Denmark, Spain, France, Ireland, Luxembourg, Morocco, Norway and the Netherlands.

686A *Additional allocation:* in the United Kingdom, the band 598 - 606 MHz is also allocated to the aeronautical radionavigation service on a primary basis until 31 December 1994. All new assignments to stations in the aeronautical radionavigation service in this band are subject to the agreement of the Administrations of the following countries: the Federal Republic of Germany, Belgium, Denmark, Spain, France, Ireland, Luxembourg, Morocco, Norway and the Netherlands.

687 *Additional allocation:* in the African Broadcasting Area (see Nos. **400** to **403**), the band 606 - 614 MHz is also allocated to the radio astronomy service on a permitted basis.

688 *Additional allocation:* in China, the band 606 - 614 MHz is also allocated to the radio astronomy service on a primary basis.

* *Note by the Secretary-General:* This note has been renumbered **686A**, to preserve the chronological order.

- 689** In Region 1, except in the African Broadcasting Area (see Nos. 400 to 403), and in Region 3, the band 608 - 614 MHz is also allocated to the radio astronomy service on a secondary basis. In making assignments to stations of other services to which the band is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).
- 690** *Additional allocation:* in India, the band 608 - 614 MHz is also allocated to the radio astronomy service on a primary basis.
- 691** *Additional allocation:* in New Zealand, the band 610 - 620 MHz is also allocated to the amateur service on a secondary basis.
- 692** *Different category of service:* in Costa Rica, El Salvador and Honduras, the allocation of the band 614 - 806 MHz to the fixed service is on a primary basis (see No. 425), subject to agreement obtained under the procedure set forth in Article 14.
- 692A** *Additional allocation:* in Cuba, the band 614 - 890 MHz is also allocated
Mob-87 to the radionavigation service on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.
- 693** Within the frequency band 620 - 790 MHz, assignments may be made to television stations using frequency modulation in the broadcasting-satellite service subject to agreement between the administrations concerned and those having services, operating in accordance with the Table, which may be affected (see Resolutions 33 and 507). Such stations shall not produce a power flux-density in excess of the value $-129 \text{ dB(W/m}^2\text{)}$ for angles of arrival less than 20° (see Recommendation 705) within the territories of other countries without the consent of the administrations of those countries.
- 694** *Additional allocation:* in Bulgaria, Hungary, Mongolia, Poland, the German Democratic Republic, Roumania, Czechoslovakia and the U.S.S.R., the band 645 - 862 MHz is also allocated to the aeronautical radionavigation service on a permitted basis.
- 695** *Alternative allocation:* in Spain and France, the band 790 - 830 MHz is allocated to the broadcasting service on a primary basis.
- 695A** *Additional allocation:* in Austria, Italy, the United Kingdom and
Mob-87 Swaziland, the band 790 - 862 MHz is also allocated to the land mobile service on a secondary basis.

696 *Alternative allocation:* in Greece, Italy, Morocco and Tunisia, the band 790 - 838 MHz is allocated to the broadcasting service on a primary basis.

697 *Additional allocation:* in the Federal Republic of Germany, Burkina Faso, WARC-92 Cameroon, Côte d'Ivoire, Denmark, Egypt, Finland, Israel, Kenya, Libya, Liechtenstein, Monaco, Norway, the Netherlands, Portugal, Sweden, Switzerland and Yugoslavia, the band 790 - 830 MHz, and in these same countries and in Spain, France, Malta, the Gabonese Republic and Syria, the band 830 - 862 MHz, are also allocated to the mobile, except aeronautical mobile, service on a primary basis. However, stations of the mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, stations of services operating in accordance with the Table in countries other than those mentioned in connection with the band.

698 and 699 SUP
Mob-87

700 *Additional allocation:* in Region 2, the band 806 - 890 MHz is also allocated to the mobile-satellite service on a primary basis. The use of this service is intended for operation within national boundaries and subject to agreement obtained under the procedure set forth in Article 14.
Mob-87

700A *Additional allocation:* in Canada, the United States and Mexico, the WARC-92 bands 849 - 851 MHz and 894 - 896 MHz are also allocated to the aeronautical mobile service on a primary basis, for public correspondence with aircraft. The use of the band 849 - 851 MHz is limited to transmissions from aeronautical stations and the use of the band 894 - 896 MHz is limited to transmissions from aircraft stations.

700B *Additional allocation:* in Belarus, the Russian Federation and Ukraine, WARC-92 the bands 806 - 840 MHz (Earth-to-space) and 856 - 890 MHz (space-to-Earth) are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service. The use of these bands by this service shall not cause harmful interference to, or claim protection from, services in other countries operating in accordance with the Table of Frequency Allocations and is subject to special agreements between the administrations concerned.

- 701** *Additional allocation:* in Region 3, the bands 806 - 890 MHz and 942 - 960 MHz are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service on a primary basis. The use of this service is limited to operation within national boundaries and subject to agreement obtained under the procedure set forth in Article 14. In seeking such agreement, appropriate protection shall be afforded to services operating in accordance with the Table, to ensure that no harmful interference is caused to such services.
- 702** *Alternative allocation:* in Italy, the band 838 - 854 MHz is allocated to the broadcasting service on a primary basis as from 1 January 1995.
- 703** In Region 1, in the band 862 - 960 MHz, stations of the broadcasting service shall be operated only in the African Broadcasting Area (see Nos. 400 to 403) excluding Algeria, Egypt, Spain, Libya and Morocco, subject to agreement obtained under the procedure set forth in Article 14.
- 704** *Additional allocation:* in Bulgaria, Hungary, Mongolia, Poland, the German Democratic Republic, Roumania, Czechoslovakia and the U.S.S.R., the band 862 - 960 MHz is also allocated to the aeronautical radionavigation service on a permitted basis until 1 January 1998. Up to this date, the aeronautical radionavigation service may use the band, subject to agreement obtained under the procedure set forth in Article 14. After this date, the aeronautical radionavigation service may continue to operate on a secondary basis.

MHz
890 – 1 240

Allocation to Services		
Region 1	Region 2	Region 3
890 – 942 FIXED MOBILE except aeronautical mobile BROADCASTING 703 Radiolocation 704	890 – 902 FIXED MOBILE except aeronautical mobile Radiolocation 700A 704A 705	890 – 942 FIXED MOBILE BROADCASTING Radiolocation 706
	902 – 928 FIXED Amateur Mobile except aeronautical mobile Radiolocation 705 707 707A	
	928 – 942 FIXED MOBILE except aeronautical mobile Radiolocation 705	
942 – 960 FIXED MOBILE except aeronautical mobile BROADCASTING 703 704	942 – 960 FIXED MOBILE	942 – 960 FIXED MOBILE BROADCASTING 701
960 – 1 215 AERONAUTICAL RADIONAVIGATION 709		
1 215 – 1 240 RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) 710 711 712 712A 713		

- 704A** *Additional allocation:* in Brazil, Canada and the United States of
Mob-87 America, the band 890 - 896 MHz is also allocated to the mobile-satellite
service on a primary basis. The use of this service is intended for operation
within national boundaries and subject to agreement obtained under the
procedure set forth in Article 14. In seeking such agreement, appropriate
protection shall be afforded to services operating in accordance with the
Table.
- 705** *Different category of service:* in the United States, the allocation of the
band 890 - 942 MHz to the radiolocation service is on a primary basis (see
No. 425) and subject to agreement obtained under the procedure set forth in
Article 14.
- 706** *Different category of service:* in Australia, the allocation of the band
890 - 942 MHz to the radiolocation service is on a primary basis (see
No. 425).
- 707** In Region 2, the band 902 - 928 MHz (centre frequency 915 MHz) is
designated for industrial, scientific and medical (ISM) applications. Radio-
communication services operating within this band must accept harmful inter-
ference which may be caused by these applications. ISM equipment operating
in this band is subject to the provisions of No. 1815.
- 707A** *Different category of service:* in Chile, the band 903 - 905 MHz is
Mob-87 allocated to the mobile, except aeronautical mobile, service on a primary
basis and is subject to agreement obtained under the procedure set forth in
Article 14.
- 708** SUP
WARC-92
- 709** The band 960 - 1 215 MHz is reserved on a worldwide basis for the use
and development of airborne electronic aids to air navigation and any directly
associated ground-based facilities.
- 710** Use of the radionavigation-satellite service in the band 1 215 - 1 260 MHz
shall be subject to the condition that no harmful interference is caused to the
radionavigation service authorized under No. 712.
- 711** *Additional allocation:* in Afghanistan, Angola, Saudi Arabia, Bahrain,
Bangladesh, Cameroon, China, the United Arab Emirates, Ethiopia, Guinea,
Guyana, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kuwait, the
Lebanon, Libya, Malawi, Morocco, Mozambique, Nepal, Nigeria, Oman,
Pakistan, the Philippines, Qatar, Syria, Somalia, Sudan, Sri Lanka, Chad,
Thailand, Togo and Yemen (P.D.R. of), the band 1 215 - 1 300 MHz is also
allocated to the fixed and mobile services on a primary basis.

712 *Additional allocation:* in Algeria, the Federal Republic of Germany, Austria, Bahrain, Belgium, Benin, Burundi, Cameroon, China, Denmark, the United Arab Emirates, France, Greece, India, Iran, Iraq, Kenya, Liechtenstein, Luxembourg, Mali, Mauritania, Norway, Oman, Pakistan, the Netherlands, Portugal, Qatar, Senegal, Somalia, Sudan, Sri Lanka, Sweden, Switzerland, Tanzania, Turkey and Yugoslavia, the band 1 215 - 1 300 MHz is also allocated to the radionavigation service on a primary basis.

712A *Additional allocation:* in Cuba, the band 1 215 - 1 300 MHz is also allocated to the radionavigation service on a primary basis subject to the agreement obtained under the procedure set forth in Article 14.
Mob-87

713 In the bands 1 215 - 1 300 MHz, 3 100 - 3 300 MHz, 5 250 - 5 350 MHz, 8 550 - 8 650 MHz, 9 500 - 9 800 MHz and 13.4 - 14.0 GHz, radiolocation stations installed on spacecraft may also be employed for the earth exploration-satellite and space research services on a secondary basis.

MHz
1 240 – 1 452

Allocation to Services		
Region 1	Region 2	Region 3
1 240 – 1 260	RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) 710 Amateur 711 712 712A 713 714	
1 260 – 1 300	RADIOLOCATION Amateur 664 711 712 712A 713 714	
1 300 – 1 350	AERONAUTICAL RADIONAVIGATION 717 Radiolocation 715 716 718	
1 350 – 1 400 FIXED MOBILE RADIOLOCATION 718 719 720	1 350 – 1 400 RADIOLOCATION 714 718 720	
1 400 – 1 427	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 721 722	
1 427 – 1 429	SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 722	
1 429 – 1 452 FIXED MOBILE except aeronautical mobile 722 723B	1 429 – 1 452 FIXED MOBILE 723 722	

MHz
1 452 – 1 530

Allocation to Services		
Region 1	Region 2	Region 3
1 452 – 1 492 FIXED MOBILE except aeronautical mobile BROADCASTING 722A 722B BROADCASTING-SATELLITE 722A 722B 722 723B	1 452 – 1 492 FIXED MOBILE 723 BROADCASTING 722A 722B BROADCASTING-SATELLITE 722A 722B 722 722C	
1 492 – 1 525 FIXED MOBILE except aeronautical mobile 722 723B	1 492 – 1 525 FIXED MOBILE 723 MOBILE-SATELLITE (space-to-Earth) 722 722C 723C	1 492 – 1 525 FIXED MOBILE 723 722
1 525 – 1 530 SPACE OPERATION (space-to-Earth) FIXED MARITIME MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Land Mobile-Satellite (space-to-Earth) 726B Mobile except aeronautical mobile 724 722 723B 725 726A 726D	1 525 – 1 530 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile 723 722 723A 726A 726D	1 525 – 1 530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Mobile 723 724 722 726A 726D

MHz
1 530 – 1 545

Allocation to Services		
Region 1	Region 2	Region 3
1 530 – 1 533 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) LAND MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile except aeronautical mobile 722 723B 726A 726D	1 530 – 1 533 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) LAND MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile 723 722 726A 726C 726D	
1 533 – 1 535 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile except aeronautical mobile Land Mobile-Satellite (space-to-Earth) 726B 722 723B 726A 726D	1 533 – 1 535 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile 723 Land Mobile-Satellite (space-to-Earth) 726B 722 726A 726C 726D	
1 535 – 1 544	MARITIME MOBILE-SATELLITE (space-to-Earth) Land Mobile-Satellite (space-to-Earth) 726B 722 726A 726C 726D 727	
1 544 – 1 545	MOBILE-SATELLITE (space-to-Earth) 722 726D 727 727A	

- 714** *Additional allocation:* in Canada and the United States, the bands 1 240 - 1 300 MHz and 1 350 - 1 370 MHz are also allocated to the aeronautical radionavigation service on a primary basis.
- 715** *Additional allocation:* in Indonesia, the band 1 300 - 1 350 MHz is also allocated to the fixed and mobile services on a primary basis.
- 716** *Alternative allocation:* in Ireland and the United Kingdom, the band 1 300 - 1 350 MHz is allocated to the radiolocation service on a primary basis.
- 717** The use of the bands 1 300 - 1 350 MHz, 2 700 - 2 900 MHz and 9 000 - 9 200 MHz by the aeronautical radionavigation service is restricted to ground-based radars and to associated airborne transponders which transmit only on frequencies in these bands and only when actuated by radars operating in the same band.
- 718** In making assignments to stations of other services, administrations are urged to take all practicable steps to protect the spectral line observations of the radio astronomy service from harmful interference in the band 1 330 - 1 400 MHz. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).
- 719** In Bulgaria, Mongolia, Poland, the German Democratic Republic, **WARC-92** Romania, Czechoslovakia and the U.S.S.R., the existing installations of the radionavigation service may continue to operate in the band 1 350 - 1 400 MHz.
- 720** The bands 1 370 - 1 400 MHz, 2 640 - 2 655 MHz, 4 950 - 4 990 MHz and 15.20 - 15.35 GHz are also allocated to the space research (passive) and earth exploration-satellite (passive) services on a secondary basis.
- 721** All emissions in the band 1 400 - 1 427 MHz are prohibited.
- 722** In the bands 1 400 - 1 727 MHz, 101 - 120 GHz and 197 - 220 GHz, passive research is being conducted by some countries in a programme for the search for intentional emissions of extra-terrestrial origin.
- 722A** Use of the band 1 452 - 1 492 MHz by the broadcasting-satellite service, **WARC-92** and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (WARC-92)**.

722B *Different category of service:* in the Federal Republic of Germany, Bangladesh, Botswana, Bulgaria, Burkina Faso, Colombia, Cuba, Denmark, WARC-92 Egypt, Ecuador, Spain, Greece, Hungary, Ireland, Italy, Jordan, Kenya, Malawi, Mozambique, Panama, Poland, Portugal, United Kingdom, Sri Lanka, Sweden, Swaziland, Czech and Slovak Federal Republic, Yemen, Yugoslavia and Zimbabwe, the allocation of the band 1 452 - 1 492 MHz to the broadcasting-satellite service and the broadcasting service is on a secondary basis until 1 April 2007.

722C *Alternative allocation:* in the United States, the band 1 452 - 1 525 MHz WARC-92 is allocated to the fixed and mobile services on a primary basis. (See also No. 723.)

723 In Region 2, in Australia and Papua New Guinea, the use of the band 1 435 - 1 535 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service.

723A *Different category of service:* in Cuba, the band 1 525 - 1 530 MHz is Mob-87 allocated to the aeronautical mobile service on a primary basis, under the conditions specified in No. 723.

723B *Additional allocation:* in Belarus, the Russian Federation and Ukraine, WARC-92 the band 1 429 - 1 535 MHz is also allocated to the aeronautical mobile service on a primary basis exclusively for the purposes of aeronautical telemetry within the national territory. As of 1 April 2007, the use of the band 1 452 - 1 492 MHz is subject to agreement between the administrations concerned.

723C The use of the band 1 492 - 1 525 MHz by the mobile-satellite service is WARC-92 subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC-92). However, with the exception of the situation referred to in No. 723, on a provisional basis, coordination of space stations of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced at the Earth's surface exceeds the limits in No. 2566. In respect of assignments operating in this band, the provisions of Section II, paragraph 2.2 of Resolution 46 (WARC-92) shall also be applied to geostationary transmitting space stations with respect to terrestrial stations.

724 *Different category of service:* in Afghanistan, Saudi Arabia, Bahrain, WARC-92 Bulgaria, Cameroon, Egypt, the United Arab Emirates, France, Iran, Iraq, Israel, Kuwait, the Lebanon, Morocco, Mongolia, Oman, Poland, Qatar, Syria, the German Democratic Republic, Romania, Czechoslovakia, the U.S.S.R., Yemen and Yugoslavia, the allocation of the band 1 525 - 1 530 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. 425).

725 *Additional allocation:* in the U.S.S.R., the band 1 525 - 1 530 MHz is also allocated to the aeronautical mobile service on a primary basis.

726 SUP
WARC-92

726A The bands 1 525 - 1 544 MHz, 1 545 - 1 559 MHz, 1 626.5 - 1 645.5 MHz
WARC-92 and 1 646.5 - 1 660.5 MHz shall not be used for feeder links of any service. In exceptional circumstances, however, an earth station at a specified fixed point in any of the mobile-satellite services may be authorized by an administration to communicate via space stations using these bands.

726B The use of the bands 1 525 - 1 530 MHz, 1 533 - 1 544 MHz, 1 626.5 -
WARC-92 1 631.5 MHz and 1 634.5 - 1 645.5 MHz by the land mobile-satellite service is limited to non-speech low bit-rate data transmissions.

726C *Additional allocation:* in Argentina, Australia, Brazil, Canada, the United
WARC-92 States, Malaysia and Mexico, the band 1 530 - 1 544 MHz is also allocated to the mobile-satellite (space-to-Earth) service, and the band 1 626.5 - 1 645.5 MHz is also allocated to the mobile-satellite (Earth-to-space) service, on a primary basis subject to the following conditions: maritime mobile-satellite distress and safety communications shall have priority access and immediate availability over all other mobile-satellite communications operating under this provision. Communications of mobile-satellite system stations not participating in the global maritime distress and safety system (GMDSS) shall operate on a secondary basis to distress and safety communications of stations operating in the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

726D The use of the bands 1 525 - 1 559 MHz and 1 626.5 - 1 660.5 MHz by the
WARC-92 mobile-satellite services are subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC-92). In Regions 1 and 3 in the band 1 525 - 1 530 MHz coordination of space stations of the mobile-satellite services with respect to terrestrial services is required only if the power flux-density produced at the Earth's surface exceeds the limits in No. 2566. In respect of assignments operating in the band 1 525 - 1 530 MHz, the provisions of Section II, paragraph 2.2 of Resolution 46 (WARC-92) shall also be applied to geostationary transmitting space stations with respect to terrestrial stations.

727 *Additional allocation:* In Afghanistan, Saudi Arabia, Bahrain, Bangladesh, the Congo, Egypt, the United Arab Emirates, Ethiopia, Iran, Iraq, Israel, Jordan, Kuwait, the Lebanon, Malta, Morocco, Niger, Oman, Pakistan, Qatar, Syria, Somalia, Sudan, Sri Lanka, Chad, Thailand, Togo, Yemen (P.D.R. of) and Zambia, the bands 1 540 - 1 645.5 MHz and 1 646.5 - 1 660 MHz are also allocated to the fixed service on a secondary basis.

727A The use of the band 1 544 - 1 545 MHz by the mobile-satellite service
Mob-87 (space-to-Earth) is limited to distress and safety communications (see Article N 38).

728* SUP
Mob-87

* *Note by the Secretary-General:* This note has been renumbered **734B**, to preserve the chronological order.

MHz
1 545 – 1 613.8

Allocation to Services		
Region 1	Region 2	Region 3
1 545 – 1 555	AERONAUTICAL MOBILE-SATELLITE (R) (space-to-Earth) 722 726A 726D 727 729 729A 730	
1 555 – 1 559	LAND MOBILE-SATELLITE (space-to-Earth) 722 726A 726D 727 730 730A 730B 730C	
1 559 – 1 610	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) 722 727 730 731	
1 610 – 1 610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION 722 727 730 731 731E 732 733 733A 733B 733E 733F	1 610 – 1 610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) 722 731E 732 733 733A 733C 733D 733E	1 610 – 1 610.6 MOBILE-SATELLITE (Earth-to-space) AERONAUTICAL RADIONAVIGATION Radiodetermination-Satellite (Earth-to-space) 722 727 730 731E 732 733 733A 733B 733E
1 610.6 – 1 613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 722 727 730 731 731E 732 733 733A 733B 733E 733F 734	1 610.6 – 1 613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) 722 731E 732 733 733A 733C 733D 733E 734	1 610.6 – 1 613.8 MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION Radiodetermination-Satellite (Earth-to-space) 722 727 730 731E 732 733 733A 733B 733E 734

729 Transmissions in the band 1 545 - 1 555 MHz from terrestrial aeronautical
Mob-87 stations directly to aircraft stations, or between aircraft stations, in the aeronautical mobile (R) service are also authorized when such transmissions are used to extend or supplement the satellite-to-aircraft links.

729A Notwithstanding any other provisions of the Radio Regulations relating to
Mob-87 restrictions in the use of the bands allocated to the aeronautical mobile-satellite (R) service for public correspondence, the bands 1 545 - 1 555 MHz and 1 646.5 - 1 656.5 MHz may be authorized by administrations for public correspondence with aircraft earth stations. Such communications must cease immediately, if necessary, to permit transmission of messages with priority 1 to 6 in Article 51.

730 *Additional allocation:* in the Federal Republic of Germany, Austria,
WARC-92 Bulgaria, Cameroon, Spain, France, Guinea, Hungary, Indonesia, Libya, Mali, Mongolia, Nigeria, Poland, the German Democratic Republic, Romania, Senegal, Tanzania, Czechoslovakia and the U.S.S.R., the bands 1 550 - 1 645.5 MHz and 1 646.5 - 1 660 MHz are also allocated to the fixed service on a primary basis.

730A In the bands 1 555 - 1 559 MHz and 1 656.5 - 1 660.5 MHz admin-
Mob-87 istrations may also authorize aircraft earth stations and ship earth stations to communicate with space stations in the land mobile-satellite service (see Resolution 208 (**Mob-87**)).

730B *Alternative allocation:* in Australia, Canada and Mexico, the band 1 555 -
WARC-92 1 559 MHz is allocated to the mobile-satellite (space-to-Earth) service, the band 1 656.5 - 1 660 MHz is allocated to the mobile-satellite (Earth-to-space) service, and the band 1 660 - 1 660.5 MHz is allocated to the mobile-satellite (Earth-to-space) and the radio astronomy services, on a primary basis.

730C *Alternative allocation:* in Argentina and the United States, the band
WARC-92 1 555 - 1 559 MHz is allocated to the mobile-satellite (space-to-Earth) service, the band 1 656.5 - 1 660 MHz is allocated to the mobile-satellite (Earth-to-space) service, and the band 1 660 - 1 660.5 MHz is allocated to the mobile-satellite (Earth-to-space) and radio astronomy services, on a primary basis subject to the following conditions: the aeronautical mobile-satellite (R) service shall have priority access and immediate availability over all other mobile-satellite communications within a network operating under this provision; mobile-satellite systems shall be interoperable with the aeronautical mobile-satellite (R) service; account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

731 *Alternative allocation:* in Sweden, the band 1 590 - 1 626.5 MHz is allocated to the aeronautical radionavigation service on a primary basis.
Mob-87

731A to 731D SUP
WARC-92

731E The use of the band 1 610 - 1 626.5 MHz by the mobile-satellite service
WARC-92 (Earth-to-space) and by the radiodetermination-satellite service (Earth-to-space) is subject to the application of the coordination and notification procedures set forth in Resolution **46 (WARC-92)**. A mobile earth station operating in either of the services in this band shall not produce an e.i.r.p. density in excess of -15 dB(W/4 kHz) in the part of the band used by systems operating in accordance with the provisions of No. **732**, unless otherwise agreed by the affected administrations. In the part of the band where such systems are not operating, a value of -3 dB(W/4 kHz) is applicable. Stations of the mobile-satellite service shall not cause harmful interference to, or claim protection from, stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. **732** and stations in the fixed service operating in accordance with the provisions of No. **730**.

731F The use of the band 1 613.8 - 1 626.5 MHz by the mobile-satellite service
WARC-92 (space-to-Earth) is subject to the application of the coordination and notification procedures set forth in Resolution **46 (WARC-92)**

732 The band 1 610 - 1 626.5 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities. Such satellite use is a subject to agreement obtained under the procedure set forth in Article **14**.

733 The bands 1 610 - 1 626.5 MHz, 5 000 - 5 250 MHz and 15.4 - 15.7 GHz are also allocated to the aeronautical mobile-satellite (R) service on a primary basis. Such use is subject to agreement obtained under the procedure set forth in Article **14**.

733A With respect to the radiodetermination-satellite and mobile-satellite services the provisions of No. **953** do not apply in the band 1 610 - 1 626.5 MHz.
WARC-92

733B *Different category of service:* in Angola, Australia, Burundi, Côte d'Ivoire, Ethiopia, India, the Islamic Republic of Iran, Israel, Italy, Jordan, Kenya, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New
Mob-87

Guinea, Senegal, Sudan, Swaziland, Syria, Tanzania, Thailand, Togo, Zaire and Zambia the allocation of the band 1 610 - 1 626.5 MHz to the radio-determination-satellite service (Earth-to-space) is on a primary basis (see No. 425) subject to agreement obtained under the procedure set forth in Article 14 with other countries not listed in this provision.

733C *Different category of service:* in Venezuela, the allocation to the radio-determination-satellite service in the band 1 610 - 1 626.5 MHz (Earth-to-space) is on a secondary basis.
Mob-87

733D *Alternative allocation:* in Cuba, the band 1 610 - 1 626.5 MHz is allocated exclusively to the aeronautical radionavigation service on a primary basis.
Mob-87

733E Harmful interference shall not be caused to stations of the radio astronomy service using the band 1 610.6 - 1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services. (No. 2904 applies.)
WARC-92

733F In Region 1, the bands 1 610 - 1 626.5 MHz (Earth-to-space) and 2 483.5 - 2 500 MHz (space-to-Earth) are also allocated to the radiodetermination-satellite service on a secondary basis.
Mob-87

734 In making assignments to stations of other services, administrations are urged to take all practicable steps to protect the radio astronomy service in the band 1 610.6 - 1 613.8 MHz from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).
WARC-92

734A Land earth stations and ship earth stations in the mobile-satellite service operating in the bands 1 631.5 - 1 634.5 MHz and 1 656.5 - 1 660 MHz shall not cause harmful interference to the stations in the fixed service operating in the countries listed in No. 730.
Mob-87

734B The use of the band 1 645.5 - 1 646.5 MHz by the mobile-satellite service (Earth-to-space) and for inter-satellite links is limited to distress and safety communications (see Article N 38).
Mob-87

735 Transmissions in the band 1 646.5 - 1 656.5 MHz from aircraft stations in the aeronautical mobile (R) service directly to terrestrial aeronautical stations, or between aircraft stations, are also authorized when such transmissions are used to extend or supplement the aircraft-to-satellite links.
Mob-87

MHz
1 656.5 – 1 675

Allocation to Services		
Region 1	Region 2	Region 3
1 656.5 – 1 660	LAND MOBILE-SATELLITE (Earth-to-space) 722 726A 726D 727 730 730A 730B 730C 734A	
1 660 – 1 660.5	LAND MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY 722 726A 726D 730A 730B 730C 736	
1 660.5 – 1 668.4	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 722 736 737 738 739	
1 668.4 – 1 670	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 722 736	
1 670 – 1 675	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE 740A 722	

MHz
1 675 – 1 930

Allocation to Services		
Region 1	Region 2	Region 3
1 675 – 1 690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 722	1 675 – 1 690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 722 735A	1 675 – 1 690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 722
1 690 – 1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 671 722 741	1 690 – 1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (Earth-to-space) 671 722 735A 740	1 690 – 1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) 671 722 740 742
1 700 – 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 671 722	1 700 – 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 671 722 735A	1 700 – 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 671 722 743
1 710 – 1 930 FIXED MOBILE 740A 722 744 745 746 746A		

735A In the band 1675 - 1710 MHz, stations in the mobile-satellite service shall not cause harmful interference to, nor constrain the development of, the meteorological-satellite and meteorological aids services (see Resolution **213 (WARC-92)**) and the use of this band shall be subject to the provisions of Resolution **46 (WARC-92)**.

736 In making assignments to stations of other services to which the band 1660 - 1670 MHz is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article 36).

737 *Different category of service:* in Afghanistan, Saudi Arabia, Bahrain, Benin, Bulgaria, Cameroon, the Central African Republic, the Congo, Cuba, Egypt, the United Arab Emirates, Ethiopia, Hungary, India, Indonesia, Iran, Israel, Kenya, Kuwait, the Lebanon, Malaysia, Mongolia, Oman, Uganda, Pakistan, Poland, Qatar, Syria, the German Democratic Republic, Singapore, Somalia, Sri Lanka, Chad, Czechoslovakia, Thailand, Tunisia, the U.S.S.R., Yemen A.R., Yemen (P.D.R. of) and Yugoslavia, the allocation of the band 1660.5 - 1668.4 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis until 1 January 1990 (see No. **425**).

738 *Additional allocation:* in Bangladesh, India, Indonesia, Nigeria, Pakistan, Sri Lanka and Thailand, the band 1660.5 - 1668.4 MHz is also allocated to the meteorological aids service on a secondary basis.

739 In view of the successful detection by radio astronomers of two hydroxyl spectral lines in the region of 1665 MHz and 1667 MHz, administrations are urged to give all practicable protection in the band 1660.5 - 1668.4 MHz for future research in radio astronomy, particularly by eliminating air-to-ground transmissions in the meteorological aids service in the band 1664.4 - 1668.4 MHz as soon as practicable.

740 *Additional allocation:* in Afghanistan, Costa Rica, Cuba, India, Iran, Malaysia, Pakistan, Singapore, Sri Lanka and Thailand, the band 1690 - 1700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

740A The bands 1670 - 1675 MHz and 1800 - 1805 MHz are intended for use, **WARC-92** on a worldwide basis, by administrations wishing to implement aeronautical

public correspondence. The use of the band 1 670 - 1 675 MHz by stations in the systems for public correspondence with aircraft is limited to transmissions from aeronautical stations and the use of the band 1 800 - 1 805 MHz is limited to transmissions from aircraft stations.

- 741** *Different category of service:* in Saudi Arabia, Austria, Bahrain, Bulgaria, the Congo, Egypt, the United Arab Emirates, Ethiopia, Guinea, Hungary, Iraq, Israel, Jordan, Kenya, Kuwait, the Lebanon, Mauritania, Mongolia, Oman, Poland, Qatar, Syria, the German Democratic Republic, Roumania, Somalia, Tanzania, Czechoslovakia, the U.S.S.R., Yemen A.R., Yemen (P.D.R. of) and Yugoslavia, the allocation of the band 1 690 - 1 700 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. 425).
- 742** *Additional allocation:* in Australia and Indonesia, the band 1 690 - 1 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis.
- 743** *Additional allocation:* in India, Indonesia, Japan and Thailand, the band 1 700 - 1 710 MHz is also allocated to the space research service (space-to-Earth) on a primary basis.
- 743A** SUP
WARC-92
- 744** The band 1 718.8 - 1 722.2 MHz is also allocated to the radio astronomy service on a secondary basis for spectral line observations. In making assignments to stations of other services to which the band is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).
- 745** Subject to agreement obtained under the procedure set forth in Article 14 and having particular regard to tropospheric scatter systems, the band 1 750 - 1 850 MHz may also be used for space operation (Earth-to-space) and space research (Earth-to-space) services in Region 2, in Afghanistan, Australia, India, Indonesia, Japan and Thailand.
- 746** *Additional allocation:* in Bulgaria, Cuba, Mali, Mongolia, Poland, the
WARC-92 German Democratic Republic, Romania, Czechoslovakia and the U.S.S.R., the band 1 770 - 1 790 MHz is also allocated to the meteorological-satellite service on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.

746A The bands 1 885 - 2 025 MHz and 2 110 - 2 200 MHz are intended for use,
WARC-92 on a worldwide basis, by administrations wishing to implement the future public land mobile telecommunication systems (FPLMTS). Such use does not preclude the use of these bands by other services to which these bands are allocated. The bands should be made available for FPLMTS in accordance with Resolution **212 (WARC-92)**.

MHz
1 930 – 2 110

Allocation to Services		
Region 1	Region 2	Region 3
1 930 – 1 970 FIXED MOBILE 746A	1 930 – 1 970 FIXED MOBILE Mobile-Satellite (Earth-to-space) 746A	1 930 – 1 970 FIXED MOBILE 746A
1 970 – 1 980 FIXED MOBILE 746A	1 970 – 1 980 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 746A 746B 746C	1 970 – 1 980 FIXED MOBILE 746A
1 980 – 2 010	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 746A 746B 746C	
2 010 – 2 025	FIXED MOBILE 746A	
2 025 – 2 110	SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE 747A SPACE RESEARCH (Earth-to-space) (space-to-space) 750A	

746B The use of the bands 1 970 - 2 010 MHz and 2 160 - 2 200 MHz by the
WARC-92 mobile-satellite service shall not commence before 1 January 2005 and is
subject to the application of the coordination and notification procedures set
forth in Resolution 46 (WARC-92). In the band 2 160 - 2 200 MHz coordina-
tion of space stations of the mobile-satellite service with respect to terrestrial
services is required only if the power flux-density produced at the Earth's
surface exceeds the limits in No. 2566. In respect of assignments operating in
this band, the provisions of Section II, paragraph 2.2 of Resolution 46
(WARC-92) shall also be applied to geostationary transmitting space stations
with respect to terrestrial stations.

746C In the United States, the use of the bands 1 970 - 2 010 MHz and 2 160 -
WARC-92 2 200 MHz by the mobile-satellite service shall not commence before
1 January 1996.

747 SUP
WARC-92

747A In making assignments to the mobile service in the bands 2 025 -
WARC-92 2 110 MHz and 2 200 - 2 290 MHz, administrations shall take into account
Resolution 211 (WARC-92).

748 to 750 SUP
WARC-92

750A Administrations are urged to take all practicable measures to ensure that
WARC-92 space-to-space transmissions between two or more non-geostationary satel-
lites, in the space research, space operations and Earth exploration-satellite
services in the bands 2 025 - 2 110 MHz and 2 200 - 2 290 MHz, shall not
impose any constraints on Earth-to-space, space-to-Earth and other space-to-
space transmissions of those services and in those bands between geosta-
tionary and non-geostationary satellites.

MHz
2 110 – 2 290

Allocation to Services		
Region 1	Region 2	Region 3
2 110 – 2 120	FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) 746A	
2 120 – 2 160 FIXED MOBILE 746A	2 120 – 2 160 FIXED MOBILE Mobile-Satellite (space-to-Earth) 746A	2 120 – 2 160 FIXED MOBILE 746A
2 160 – 2 170 FIXED MOBILE 746A	2 160 – 2 170 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 746A 746B 746C	2 160 – 2 170 FIXED MOBILE 746A
2 170 – 2 200	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 746A 746B 746C	
2 200 – 2 290	SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE 747A SPACE RESEARCH (space-to-Earth) (space-to-space) 750A	

MHz
2 290 – 2 500

Allocation to Services		
Region 1	Region 2	Region 3
2 290 – 2 300 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)		
2 300 – 2 450 FIXED MOBILE Amateur Radiolocation 664 751A 752	2 300 – 2 450 FIXED MOBILE RADIOLOCATION Amateur 664 750B 751 751B 752	
2 450 – 2 483.5 FIXED MOBILE Radiolocation 752 753	2 450 – 2 483.5 FIXED MOBILE RADIOLOCATION 751 752	
2 483.5 – 2 500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) Radiolocation 733F 752 753 753A 753B 753C 753F	2 483.5 – 2 500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) RADIOLOCATION RADIODETERMINATION- SATELLITE (space-to-Earth) 753A 752 753D 753F	2 483.5 – 2 500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) RADIOLOCATION Radiodetermination-Satellite (space-to-Earth) 753A 752 753C 753F

- 750B** *Additional allocation:* in the United States and India, the band 2310 - 2360 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial sound broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (WARC-92)**.
- 751** In Australia, the United States and Papua New Guinea, the use of the band 2300 - 2390 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services. In Canada, the use of the band 2300 - 2483.5 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services.
- 751A** In France, the use of the band 2310 - 2360 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service.
- 751B** Space stations of the broadcasting-satellite service in the band 2310 - 2360 MHz operating in accordance with No. **750B** that may affect the services to which this band is allocated in other countries shall be coordinated and notified in accordance with Resolution **33 (WARC-79)**. Complementary terrestrial broadcasting stations shall be subject to bilateral coordination with neighbouring countries prior to their bringing into use.
- 752** The band 2400 - 2500 MHz (centre frequency 2450 MHz) is designated for industrial, scientific and medical (ISM) applications. Radio services operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. **1815**.
- 753** *Different category of service:* in France, the band 2450 - 2500 MHz is allocated on a primary basis to the radiolocation service (see No. **425**). Such use is subject to agreement with administrations having services operating or planned to operate in accordance with the Table of Frequency Allocations which may be affected.
- 753A** In respect of the radiodetermination-satellite service in the band 2483.5 - 2500 MHz, the provisions of No. **953** do not apply.
- 753B** In Region 1, in countries other than those listed in No. **753C**, harmful interference shall not be caused to, or protection shall not be claimed from, stations of the radiolocation service by stations of the radiodetermination satellite service.

753C *Different category of service:* in Angola, Australia, Bangladesh, Burundi, WARC-92 China, Côte d'Ivoire, Ethiopia, India, the Islamic Republic of Iran, Israel, Italy, Jordan, Kenya, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Senegal, Sudan, Swaziland, Syria, Tanzania, Thailand, Togo, Zaire and Zambia, the allocation of the band 2483.5 - 2 500 MHz to the radiodetermination-satellite service (space-to-Earth) is on a primary basis (see No. 425) subject to agreement obtained under the procedure of Article 14 with other countries not listed in this provision.

753D *Alternative allocation:* in Cuba, the band 2483.5 - 2 500 MHz is allocated Mob-87 only to the fixed, mobile and radiolocation services on a primary basis.

753E SUP
WARC-92

753F The use of the band 2483.5 - 2 500 MHz by the mobile-satellite and the WARC-92 radiodetermination-satellite services is subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC-92). Coordination of space stations of the mobile-satellite and radiodetermination-satellite services with respect to terrestrial services is required only if the power flux-density produced at the Earth's surface exceeds the limits in No. 2566. In respect of assignments operating in this band, the provisions of Section II, paragraph 2.2 of Resolution 46 (WARC-92) shall also be applied to geostationary transmitting space stations with respect to terrestrial stations.

MHz
2 500 – 2 655

Allocation to Services		
Region 1	Region 2	Region 3
2 500 – 2 520 FIXED 762 763 764 MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) 754 754B 755A 756 759 760A	2 500 – 2 520 FIXED 762 764 FIXED-SATELLITE (space-to-Earth) 761 MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) 754 754A 755 755A 760A	
2 520 – 2 655 FIXED 762 763 764 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 720 754 754B 756 757A 758 759	2 520 – 2 655 FIXED 762 764 FIXED-SATELLITE (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 720 754 755	2 520 – 2 535 FIXED 762 764 FIXED-SATELLITE (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 754
		2 535 – 2 655 FIXED 762 764 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 720 757A

754 Subject to agreement obtained under the procedure set forth in Article 14,
WARC-92 the band 2520 - 2535 MHz (until 1 January 2005 the band 2500 - 2535 MHz) may also be used for the mobile-satellite (space-to-Earth), except aeronautical mobile-satellite, service for operation limited to within national boundaries. The coordination and notification procedures set forth in Resolution 46 (WARC-92) apply. However, coordination of space stations of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds the limits in No. 2566.

754A *Additional allocation:* subject to agreement obtained under the procedure
Mob-87 set forth in Article 14, the band 2500 - 2516.5 MHz may also be used in India, the Islamic Republic of Iran, Papua New Guinea and Thailand for the radiodetermination-satellite service (space-to-Earth) for operation limited to within national boundaries.

754B *Additional allocation:* in France, the band 2500 - 2550 MHz is also
WARC-92 allocated to the radiolocation service on a primary basis. Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.

755 *Additional allocation:* in Canada, the band 2500 - 2550 MHz is also allocated to the radiolocation service on a primary basis.

755A In the band 2500 - 2520 MHz, the power flux-density at the surface of
WARC-92 the Earth from space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed $-152 \text{ dB(W/m}^2/4 \text{ kHz)}$ in Argentina, unless otherwise agreed by the administrations concerned.

756 *Additional allocation:* in the United Kingdom, the band 2500 - 2600 MHz is also allocated to the radiolocation service on a secondary basis.

757 The use of the band 2520 - 2670 MHz by the broadcasting-satellite
WARC-92 service is limited to national and regional systems for community reception and such use shall be subject to agreement obtained under the procedure set forth in Article 14. The power flux-density at the Earth's surface shall not exceed the values given in Nos. 2561 to 2564.

757A *Additional allocation:* in Bangladesh, Belarus, China, the Republic of
WARC-92 Korea, the Russian Federation, India, Japan, Pakistan, Singapore, Sri Lanka, Thailand and Ukraine, the band 2535 - 2655 MHz is also allocated to the

broadcasting-satellite service (sound) and complementary terrestrial broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to provisions of Resolution 528 (WARC-92). The provisions of Nos. 757 and 2561 to 2564 do not apply to this additional allocation.

758 *Alternative allocation:* in the Federal Republic of Germany and Greece,
WARC-92 the band 2 520 - 2 670 MHz is allocated to the fixed service on a primary basis.

759 *Alternative allocation:* in Bulgaria and the U.S.S.R., the band 2 500 - 2 690 MHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

760 In the design of systems in the broadcasting-satellite service in the bands between 2 500 MHz and 2 690 MHz, administrations are urged to take all necessary steps to protect the radio astronomy service in the band 2 690 - 2 700 MHz.

760A The allocation of the frequency band 2 500 - 2 520 MHz to the mobile-
WARC-92 satellite service (space-to-Earth) shall be effective on 1 January 2005 and is subject to the application of the coordination and notification procedures set forth in Resolution 46 (WARC-92). Coordination of space stations of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced at the Earth's surface exceeds the limits in No. 2566. In respect of assignments operating in this band, the provisions of Section II, paragraph 2.2 of Resolution 46 (WARC-92) shall also be applied to geostationary transmitting space stations with respect to terrestrial stations.

761 The use of the bands 2 500 - 2 690 MHz in Region 2 and 2 500 - 2 535 MHz and 2 655 - 2 690 MHz in Region 3 by the fixed-satellite service is limited to national and regional systems; such use shall be subject to agreement obtained under the procedure set forth in Article 14, giving particular attention to the broadcasting-satellite service in Region 1. In the direction space-to-Earth, the power flux-density at the Earth's surface shall not exceed the values given in Nos. 2561 to 2564.

762 Administrations shall make all practicable efforts to avoid developing new tropospheric scatter systems in the band 2 500 - 2 690 MHz.

- 763** Subject to agreement obtained under the procedure set forth in Article 14, the band 2 500 - 2 690 MHz may be used for tropospheric scatter systems in Region 1.
- 764** When planning new tropospheric scatter radio-relay links in the band 2 500 - 2 690 MHz, all possible measures shall be taken to avoid directing the antennae of these links towards the geostationary-satellite orbit.

MHz
2 655 – 2 690

Allocation to Services		
Region 1	Region 2	Region 3
2 655 – 2 670 FIXED 762 763 764 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 758 759 765 766	2 655 – 2 670 FIXED 762 764 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 765 766	2 655 – 2 670 FIXED 762 764 FIXED-SATELLITE (Earth-to-space) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 765 766
2 670 – 2 690 FIXED 762 763 764 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 764A 765 766	2 670 – 2 690 FIXED 762 764 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 761 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 764A 765 766	2 670 – 2 690 FIXED 762 764 FIXED-SATELLITE (Earth-to-space) 761 MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 764A 765 766

764A The allocation of the frequency band 2 670 - 2 690 MHz to the mobile-satellite service shall be effective from 1 January 2005. When introducing mobile-satellite systems in this band administrations shall take all necessary steps to protect the satellite systems operating in this band prior to 3 March 1992. The coordination of mobile-satellite systems in the band shall be in accordance with Resolution **46 (WARC-92)**.

765 In making assignments to stations of other services, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference in the band 2 655 - 2 690 MHz. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).

766 Subject to agreement obtained under the procedure set forth in Article **14**, the band 2 655 - 2 670 MHz (until 1 January 2005 the band 2 655 - 2 690 MHz) may also be used for the mobile-satellite (Earth-to-space), except aeronautical mobile-satellite, service for operation limited to within national boundaries. The coordination and notification procedures set forth in Resolution **46 (WARC-92)** apply.

MHz
2 690 – 3 400

Allocation to Services		
Region 1	Region 2	Region 3
2 690 – 2 700	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 767 768 769	
2 700 – 2 900	AERONAUTICAL RADIONAVIGATION 717 Radiolocation 770 771	
2 900 – 3 100	RADIONAVIGATION 773 Radiolocation 772 775A	
3 100 – 3 300	RADIOLOCATION 713 777 778	
3 300 – 3 400 RADIOLOCATION 778 779 780	3 300 – 3 400 RADIOLOCATION Amateur Fixed Mobile 778 780	3 300 – 3 400 RADIOLOCATION Amateur 778 779

767 *Additional allocation:* in the Federal Republic of Germany and Austria, the band 2 690 - 2 695 MHz is also allocated to the fixed service on a primary basis. Such use is limited to equipment in operation by 1 January 1985.

768 All emissions in the band 2 690 - 2 700 MHz are prohibited, except those provided for by Nos. **767** and **769**.

769 *Additional allocation:* in Afghanistan, Saudi Arabia, Bahrain, Brunei
WARC-92 Darussalam, Bulgaria, Cameroon, the Central African Republic, the Congo, Côte d'Ivoire, Cuba, Egypt, the United Arab Emirates, Ethiopia, Gabon, Guinea, Guinea-Bissau, Iran, Iraq, Israel, Jordan, the Lebanon, Malaysia, Malawi, Mali, Morocco, Mauritania, Mongolia, Nigeria, Oman, Pakistan, the Philippines, Poland, Qatar, Syria, the German Democratic Republic, Romania, Singapore, Somalia, Sri Lanka, Czechoslovakia, Thailand, Tunisia, the U.S.S.R., Yemen, Yugoslavia, Zaire and Zambia, the band 2 690 - 2 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985.

770 In the band 2 700 - 2 900 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the aeronautical radionavigation service.

771 *Additional allocation:* in Canada, the band 2850 - 2900 MHz is also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars.

772 In the band 2900 - 3 100 MHz, the use of the shipborne interrogator-transponder system (SIT) shall be confined to the sub-band 2930 - 2950 MHz.
Mob-87

773 The use of the band 2900 - 3 100 MHz by the aeronautical radionavigation service is limited to ground-based radars.

774 and 775 SUP
Mob-87

775A In the bands 2900 - 3 100 MHz and 9 300 - 9 500 MHz, the response from
Mob-87 radar transponders shall not be capable of being confused with the response from radar beacons (racons) and shall not cause interference to ship or aeronautical radars in the radionavigation service, having regard, however, to No. **347** of these Regulations.

776 SUP
Mob-87

777 *Additional allocation:* in Bulgaria, Canada, Cuba, Mongolia, Poland, the
WARC-92 German Democratic Republic, Romania, Czechoslovakia and the U.S.S.R.,
 the band 3 100 - 3 300 MHz is also allocated to the radionavigation service on
 a primary basis.

778 In making assignments to stations of other services, administrations are
 urged to take all practicable steps to protect the spectral line observations of
 the radio astronomy service from harmful interference in the bands 3 260 -
 3 267 MHz, 3 332 - 3 339 MHz, 3 345.8 - 3 352.5 MHz and 4 825 -
 4 835 MHz. Emissions from space or airborne stations can be particularly
 serious sources of interference to the radio astronomy service (see Nos. 343
 and 344 and Article 36).

779 *Additional allocation:* in Afghanistan, Saudi Arabia, Bahrain,
WARC-92 Bangladesh, Brunei Darussalam, China, the Congo, the United Arab
 Emirates, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kuwait, the
 Lebanon, Libya, Malaysia, Oman, Pakistan, Qatar, Dem. People's Rep. of
 Korea, Syria, Singapore, Sri Lanka, Thailand and Yemen, the band 3 300 -
 3 400 MHz is also allocated to the fixed and mobile services on a primary
 basis. The countries bordering the Mediterranean shall not claim protection
 for their fixed and mobile services from the radiolocation service.

780 *Additional allocation:* in Bulgaria, Cuba, Mongolia, Poland, the German
WARC-92 Democratic Republic, Romania, Czechoslovakia and the U.S.S.R., the band
 3 300 - 3 400 MHz is also allocated to the radionavigation service on a
 primary basis.

MHz
3 400 – 4 800

Allocation to Services		
Region 1	Region 2	Region 3
3 400 – 3 600 FIXED FIXED-SATELLITE (space-to-Earth) Mobile Radiolocation 781 785	3 400 – 3 500 FIXED FIXED-SATELLITE (space-to-Earth) Amateur Mobile Radiolocation 784 664 783	
	3 500 – 3 700 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation 784 786	
3 600 – 4 200 FIXED FIXED-SATELLITE (space-to-Earth) Mobile	3 700 – 4 200 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 787	
	4 200 – 4 400 AERONAUTICAL RADIONAVIGATION 789 788 790 791	
4 400 – 4 500	FIXED MOBILE	
4 500 – 4 800	FIXED FIXED-SATELLITE (space-to-Earth) 792A MOBILE	

- 781 *Additional allocation:* in the Federal Republic of Germany, Israel, Nigeria and the United Kingdom, the band 3 400 - 3 475 MHz is also allocated to the amateur service on a secondary basis.
- 782 SUP
WARC-92
- 783 *Different category of service:* in Indonesia, Japan, Pakistan and Thailand, the allocation of the band 3 400 - 3 500 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. 425).
- 784 In Regions 2 and 3, in the band 3 400 - 3 600 MHz the radiolocation service is allocated on a primary basis. However, all administrations operating radiolocation systems in this band are urged to cease operations by 1985. Thereafter, administrations shall take all practicable steps to protect the fixed-satellite service and coordination requirements shall not be imposed on the fixed-satellite service.
- 785 In Denmark, Norway and the United Kingdom, the fixed, radiolocation and fixed-satellite services operate on a basis of equality of rights in the band 3 400 - 3 600 MHz. However, these Administrations operating radiolocation systems in this band are urged to cease operations by 1985. After this date, these Administrations shall take all practicable steps to protect the fixed-satellite service and coordination requirements shall not be imposed on the fixed-satellite service.
- 786 In Japan, in the band 3 620 - 3 700 MHz, the radiolocation service is excluded.
- 787 *Additional allocation:* in New Zealand, the band 3 700 - 3 770 MHz is also allocated to the radiolocation service on a secondary basis.
- 788 *Additional allocation:* in the Federal Republic of Germany, Denmark, Norway and Sweden, the band 4 200 - 4 210 MHz is also allocated to the fixed service on a secondary basis.
- 789 Use of the band 4 200 - 4 400 MHz by the aeronautical radionavigation service is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground. However, passive sensing in the earth exploration-satellite and space research services may be authorized in this band on a secondary basis (no protection is provided by the radio altimeters).
- 790 *Additional allocation:* in China, Iran, Libya, the Philippines and Sri Lanka, the band 4 200 - 4 400 MHz is also allocated to the fixed service on a secondary basis.

791 The standard frequency and time signal-satellite service may be authorized to use the frequency 4 202 MHz for space-to-Earth transmissions and the frequency 6 427 MHz for Earth-to-space transmissions. Such transmissions shall be confined within the limits of ± 2 MHz of these frequencies and shall be subject to agreement obtained under the procedure set forth in Article 14.

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792A The use of the bands 4 500 - 4 800 MHz, 6 725 - 7 025 MHz, 10.7 -
Orb-88 10.95 GHz, 11.2 - 11.45 GHz and 12.75 - 13.25 GHz by the fixed-satellite service shall be in accordance with the provisions of Appendix **30B**.

MHz
4 800 – 5 725

Allocation to Services		
Region 1	Region 2	Region 3
4 800 – 4 990	FIXED MOBILE 793 Radio Astronomy 720 778 794	
4 990 – 5 000	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space Research (passive) 795	
5 000 – 5 250	AERONAUTICAL RADIONAVIGATION 733 796 797 797A 797B	
5 250 – 5 255	RADIOLOCATION Space Research 713 798	
5 255 – 5 350	RADIOLOCATION 713 798	
5 350 – 5 460	AERONAUTICAL RADIONAVIGATION 799 Radiolocation	
5 460 – 5 470	RADIONAVIGATION 799 Radiolocation	
5 470 – 5 650	MARITIME RADIONAVIGATION Radiolocation 800 801 802	
5 650 – 5 725	RADIOLOCATION Amateur Space Research (deep space) 664 801 803 804 805	

- 793** In the bands 4 825 - 4 835 MHz and 4 950- 4 990 MHz, the allocation to the mobile service is restricted to the mobile, except aeronautical mobile, service.
- 794** *Different category of service:* in Argentina, Australia and Canada, the allocation of the bands 4 825 - 4 835 MHz and 4 950 - 4 990 MHz to the radio astronomy service is on a primary basis (see No. **425**). In making assignments to stations of other services to which these bands are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).
- 795** In making assignments to stations of other services to which the band 4 990 - 5 000 MHz is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).
- 796** The band 5 000 - 5 250 MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. The requirements of this system shall take precedence over other uses of this band.
- 797** The bands 5 000 - 5 250 MHz and 15.4 - 15.7 GHz are also allocated to the fixed-satellite service and the inter-satellite service, for connection between one or more earth stations at specified fixed points on the Earth and space stations, when these services are used in conjunction with the aeronautical radionavigation and/or aeronautical mobile (R) service. Such use shall be subject to agreement obtained under the procedure set forth in Article **14**.
- 797A** *Additional allocation:* in the countries listed in Nos. **733B** and **753C**, and
Mob-87 subject to agreement obtained under the procedure set forth in Article **14**, the band 5 150 - 5 216 MHz is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis. In Region 2, the band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis. In Regions 1 and 3, except those countries listed in Nos. **733B** and **753C**, the band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a secondary basis. The use by the radiodetermination-

satellite service is limited to feeder links in conjunction with the radio-determination-satellite service operating in the bands 1 610 - 1 626.5 MHz and/or 2 483.5 - 2 500 MHz. The total power flux-density at the Earth's surface shall in no case exceed -159 dBW/m² in any 4 kHz band for all angles of arrival.

797B *Additional allocation:* in the Federal Republic of Germany, Austria, **WARC-92** Belgium, Denmark, Spain, Finland, France, Greece, Israel, Italy, Japan, Jordan, Lebanon, Liechtenstein, Luxembourg, Malta, Morocco, Norway, Pakistan, the Netherlands, Portugal, the United Kingdom, Sweden, Switzerland, Syria and Tunisia, the band 5 150 - 5 250 MHz is also allocated to the mobile service, on a primary basis, subject to the agreement obtained under the procedure set forth in Article 14.

798 *Additional allocation:* in Austria, Bulgaria, Libya, Mongolia, Poland, the **WARC-92** German Democratic Republic, Romania, Czechoslovakia and the U.S.S.R., the band 5 250 - 5 350 MHz is also allocated to the radionavigation service on a primary basis.

799 The use of the band 5 350 - 5 470 MHz by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.

800 *Additional allocation:* in Afghanistan, Austria, Bulgaria, Iran, Mongolia, **WARC-92** Poland, the German Democratic Republic, Romania, Czechoslovakia and the U.S.S.R., the band 5 470 - 5 650 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

801 *Additional allocation:* in the United Kingdom, the band 5 470 - 5 850 MHz is also allocated to the land mobile service on a secondary basis. The power limits specified in Nos. **2502**, **2505**, **2506** and **2507** shall apply in the band 5 725 - 5 850 MHz.

802 Between 5 600 MHz and 5 650 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the maritime radionavigation service.

803 *Additional allocation:* in Afghanistan, Saudi Arabia, Bahrain, **WARC-92** Bangladesh, Brunei Darussalam, Cameroon, the Central African Republic, China, the Congo, the Republic of Korea, Egypt, the United Arab Emirates, Gabon, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kuwait, the Lebanon, Libya, Madagascar, Malaysia, Malawi, Niger, Nigeria, Oman, Pakistan, the Philippines, Qatar, Dem. People's Rep. of Korea, Syria, Singapore, Sri Lanka, Swaziland, Tanzania, Chad, Thailand and Yemen, the band 5 650 - 5 850 MHz is also allocated to the fixed and mobile services on a primary basis.

804 *Different category of service:* in Bulgaria, Cuba, Mongolia, Poland, the
WARC-92 German Democratic Republic, Czechoslovakia and the U.S.S.R., the allocation of the band 5 670 - 5 725 MHz to the space research service is on a primary basis (see No. **425**).

805 *Additional allocation:* in Bulgaria, Cuba, Hungary, Mongolia, Poland, the German Democratic Republic, Czechoslovakia and the U.S.S.R., the band 5 670 - 5 850 MHz is also allocated to the fixed service on a primary basis.

MHz
5 725 – 7 300

Allocation to Services		
Region 1	Region 2	Region 3
5 725 – 5 850 FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 801 803 805 806 807 808	5 725 – 5 850 RADIOLOCATION Amateur 803 805 806 808	
5 850 – 5 925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 806	5 850 – 5 925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Amateur Radiolocation 806	5 850 – 5 925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Radiolocation 806
5 925 – 7 075	FIXED FIXED-SATELLITE (Earth-to-space) 792A MOBILE 791 809	
7 075 – 7 250	FIXED MOBILE 809 810 811	
7 250 – 7 300	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 812	

- 806** The band 5 725 - 5 875 MHz (centre frequency 5 800 MHz) is designated for industrial, scientific and medical (ISM) applications. Radiocommunication services operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. 1815.
- 807** *Additional allocation:* in the Federal Republic of Germany and in Cameroon, the band 5 755 - 5 850 MHz is also allocated to the fixed service on a primary basis.
- 808** The band 5 830 - 5 850 MHz is also allocated to the amateur-satellite service (space-to-Earth) on a secondary basis.
- 809** In the band 6 425 - 7 075 MHz, passive microwave sensor measurements are carried out over the oceans. In the band 7 075 - 7 250 MHz, passive microwave sensor measurements are carried out. Administrations should bear in mind the needs of the earth exploration-satellite (passive) and space research (passive) services in their future planning of this band.
- 810** Subject to agreement obtained under the procedure set forth in Article 14, in Region 2, the band 7 125 - 7 155 MHz may be used for Earth-to-space transmissions in the space operation service.
- 811** Subject to agreement obtained under the procedure set forth in Article 14, the band 7 145 - 7 235 MHz may be used for Earth-to-space transmissions in the space research service. The use of the band 7 145 - 7 190 MHz is restricted to deep space; no emissions to deep space shall be effected in the band 7 190 - 7 235 MHz.
- 812** The bands 7 250 - 7 375 MHz (space-to-Earth) and 7 900 - 8 025 MHz (Earth-to-space) may also be used by the mobile-satellite service. The use of these bands by this service shall be subject to agreement obtained under the procedure set forth in Article 14.

MHz
7 300 – 8 175

Allocation to Services		
Region 1	Region 2	Region 3
7 300 – 7 450	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 812	
7 450 – 7 550	FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	
7 550 – 7 750	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	
7 750 – 7 900	FIXED MOBILE except aeronautical mobile	
7 900 – 8 025	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 812	
8 025 – 8 175 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Earth Exploration-Satellite (space-to-Earth) 813 815	8 025 – 8 175 EARTH EXPLORATION- SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 814	8 025 – 8 175 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Earth Exploration-Satellite (space-to-Earth) 813 815

- 813** In the band 8 025 - 8 400 MHz, the power flux-density limits specified in No. **2570** shall apply in Regions 1 and 3 to the earth exploration-satellite service.
- 814** In Region 2, aircraft stations are not permitted to transmit in the band 8 025 - 8 400 MHz.
- 815** Subject to agreement obtained under the procedure set forth in Article 14, the band 8 025 - 8 400 MHz may be used for the earth exploration-satellite service (space-to-Earth) in Bangladesh, Benin, Cameroon, China, the Central African Republic, the Ivory Coast, Egypt, France, Guinea, Upper Volta, India, Iran, Israel, Italy, Japan, Kenya, Libya, Mali, Niger, Pakistan, Senegal, Somalia, Sudan, Sweden, Tanzania, Zaire and Zambia, on a primary basis.

MHz
8 175 – 8 750

Allocation to Services		
Region 1	Region 2	Region 3
8 175 – 8 215 FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE Earth Exploration-Satellite (space-to-Earth) 813 815	8 175 – 8 215 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 814	8 175 – 8 215 FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE Earth Exploration-Satellite (space-to-Earth) 813 815
8 215 – 8 400 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Earth Exploration-Satellite (space-to-Earth) 813 815	8 215 – 8 400 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 814	8 215 – 8 400 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Earth Exploration-Satellite (space-to-Earth) 813 815
8 400 – 8 500	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 816 817 818	
8 500 – 8 750	RADIOLOCATION 713 819 820	

- 816** In the space research service, the use of the band 8 400 - 8 450 MHz is limited to deep space.
- 817** *Different category of service:* in Belgium, Israel, Luxembourg, Malaysia, Singapore and Sri Lanka, the allocation of the band 8 400 - 8 500 MHz to the space research service is on a secondary basis (see No. 424).
- 818** *Alternative allocation:* in the United Kingdom, the band 8 400 - 8 500 MHz is allocated to the radiolocation and space research services on a primary basis.
- 819** *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Brunei
WARC-92 Darussalam, Burundi, Cameroon, China, the Congo, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guinea, Guyana, Indonesia, Iran, Iraq, Israel, Jamaica, Jordan, Kuwait, Lebanon, Libya, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Nigeria, Oman, Pakistan, Qatar, Dem. People's Rep. of Korea, Syria, Senegal, Singapore, Somalia, Sri Lanka, Swaziland, Tanzania, Chad, Thailand, Togo, Tunisia and Yemen, the band 8 500 - 8 750 MHz is also allocated to the fixed and mobile services on a primary basis.
- 820** *Additional allocation:* in Bulgaria, Hungary, Mongolia, Poland, the German Democratic Republic, Roumania, Czechoslovakia and the U.S.S.R., the band 8 500 - 8 750 MHz is also allocated to the land mobile and radionavigation services on a primary basis.

MHz
8 750 – 10 000

Allocation to Services		
Region 1	Region 2	Region 3
8 750 – 8 850	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 821 822	
8 850 – 9 000	RADIOLOCATION MARITIME RADIONAVIGATION 823 824	
9 000 – 9 200	AERONAUTICAL RADIONAVIGATION 717 Radiolocation 822	
9 200 – 9 300	RADIOLOCATION MARITIME RADIONAVIGATION 823 824 824A	
9 300 – 9 500	RADIONAVIGATION 825A Radiolocation 775A 824A 825	
9 500 – 9 800	RADIOLOCATION RADIONAVIGATION 713	
9 800 – 10 000	RADIOLOCATION Fixed 826 827 828	

821 The use of the band 8 750 - 8 850 MHz by the aeronautical radionavigation service is limited to airborne Doppler navigation aids on a centre frequency of 8 800 MHz.

822 *Additional allocation:* in Algeria, the Federal Republic of Germany, Bahrain, Belgium, China, the United Arab Emirates, France, Greece, Indonesia, Iran, Libya, the Netherlands, Qatar, Sudan and Thailand, the bands 8 825 - 8 850 MHz and 9 000 - 9 200 MHz are also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars only.

823 In the bands 8 850 - 9 000 MHz and 9 200 - 9 225 MHz, the maritime radionavigation service is limited to shore-based radars.

824 *Additional allocation:* in Austria, Bulgaria, Cuba, Hungary, Mongolia, Poland, the German Democratic Republic, Roumania, Czechoslovakia and the U.S.S.R., the bands 8 850 - 9 000 MHz and 9 200 - 9 300 MHz are also allocated to the radionavigation service on a primary basis.

824A In the band 9 200 - 9 500 MHz, search and rescue transponders (SART) may be used, having due regard to the appropriate CCIR Recommendation (see also Article N 38).

825 The use of the band 9 300 - 9 500 MHz by the aeronautical radionavigation service is limited to airborne weather radars and ground-based radars. In addition, ground-based radar beacons in the aeronautical radionavigation service are permitted in the band 9 300 - 9 320 MHz on condition that harmful interference is not caused to the maritime radionavigation service. In the band 9 300 - 9 500 MHz, ground-based radars used for meteorological purposes have priority over other radiolocation devices.

825A In the band 9 300 - 9 320 MHz in the radionavigation service, the use of shipborne radars, other than those existing on 1 January 1976, is not permitted until 1 January 2001.

826 *Different category of service:* in Afghanistan, Algeria, Saudi Arabia, WARC-92 Austria, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, the Republic of Korea, Egypt, the United Arab Emirates, Ethiopia, Guyana, India, Indonesia, Iran, Iraq, Israel, Jamaica, Japan, Jordan, Kuwait, the Lebanon, Liberia, Malaysia, Nigeria, Oman, Pakistan, Qatar, Singapore, Somalia, Sudan, Sri Lanka, Sweden, Thailand, Trinidad and Tobago, and Yemen, the allocation of the band 9 800 - 10 000 MHz to the fixed service is on a primary basis (see No. 425).

827 *Additional allocation:* in Bulgaria, Hungary, Mongolia, Poland, the German Democratic Republic, Roumania, Czechoslovakia and the U.S.S.R., the band 9 800 - 10 000 MHz is also allocated to the radionavigation service on a primary basis.

828 The band 9 975 - 10 025 MHz is also allocated to the meteorological-satellite service on a secondary basis for use by weather radars.

GHz
10 – 10.7

Allocation to Services		
Region 1	Region 2	Region 3
10 – 10.45 FIXED MOBILE RADIOLOCATION Amateur 828	10 – 10.45 RADIOLOCATION Amateur 828 829	10 – 10.45 FIXED MOBILE RADIOLOCATION Amateur 828
10.45 – 10.5	RADIOLOCATION Amateur Amateur-Satellite 830	
10.5 – 10.55 FIXED MOBILE Radiolocation	10.5 – 10.55 FIXED MOBILE RADIOLOCATION	
10.55 – 10.6	FIXED MOBILE except aeronautical mobile Radiolocation	
10.6 – 10.68	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 831 832	
10.68 – 10.7	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 833 834	

- 829** *Additional allocation:* in Costa Rica, Ecuador, Guatemala and Honduras, the band 10 - 10.45 GHz is also allocated to the fixed and mobile services on a primary basis.
- 830** *Additional allocation:* in the Federal Republic of Germany, Angola, WARC-92 China, Ecuador, Spain, Japan, Kenya, Morocco, Nigeria, Oman, Dem. People's Rep. of Korea, Sweden, Tanzania and Thailand, the band 10.45 - 10.5 GHz is also allocated to the fixed and mobile services on a primary basis.
- 831** In the band 10.6 - 10.68 GHz, stations of the fixed and mobile, except aeronautical mobile, services shall be limited to a maximum equivalent isotropically radiated power of 40 dBW and the power delivered to the antenna shall not exceed -3 dBW. These limits may be exceeded subject to agreement obtained under the procedure set forth in Article 14. However, in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, China, the United Arab Emirates, Finland, India, Indonesia, Iran, Iraq, Japan, Kuwait, the Lebanon, Nigeria, Pakistan, the Philippines, Qatar, Syria and the U.S.S.R., the restrictions on the fixed and mobile, except aeronautical mobile, services are not applicable.
- 832** In making assignments to stations of other services to which the band 10.6 - 10.68 GHz is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).
- 833** All emissions in the band 10.68 - 10.7 GHz are prohibited, except for those provided for by No. 834.
- 834** *Additional allocation:* in Saudi Arabia, Bahrain, Bulgaria, Cameroon, WARC-92 China, Colombia, the Republic of Korea, Costa Rica, Cuba, Egypt, the United Arab Emirates, Ecuador, Iran, Iraq, Israel, Japan, Jordan, Kuwait, the Lebanon, Mongolia, Pakistan, Poland, Qatar, the German Democratic Republic, Dem. People's Rep. of Korea, Romania, Czechoslovakia, the U.S.S.R., Yemen and Yugoslavia, the band 10.68 - 10.7 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985.

GHz
10.7 – 12.75

Allocation to Services		
Region 1	Region 2	Region 3
10.7 – 11.7 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 792A 835 MOBILE except aeronautical mobile	10.7 – 11.7 FIXED FIXED-SATELLITE (space-to-Earth) 792A MOBILE except aeronautical mobile	
11.7 – 12.5 FIXED BROADCASTING BROADCASTING-SATELLITE MOBILE except aeronautical mobile 838	11.7 – 12.1 FIXED 837 FIXED-SATELLITE (space-to-Earth) Mobile except aeronautical mobile 836 839	11.7 – 12.2 FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 838
	12.1 – 12.2 FIXED-SATELLITE (space-to-Earth) 836 839 842	
	12.2 – 12.7 FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 839 844 846	12.2 – 12.5 FIXED MOBILE except aeronautical mobile BROADCASTING 838 845
12.5 – 12.75 FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 848 849 850	12.7 – 12.75 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE except aeronautical mobile	12.5 – 12.75 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile BROADCASTING-SATELLITE 847

- 835** In Region 1, the use of the band 10.7 - 11.7 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.
- 836** In Region 2, in the band 11.7 - 12.2 GHz, transponders on space stations
Orb-85 in the fixed-satellite service may be used additionally for transmissions in the broadcasting-satellite service, provided that such transmissions do not have a maximum e.i.r.p. greater than 53 dBW per television channel and do not cause greater interference or require more protection from interference than the coordinated fixed-satellite service frequency assignments. With respect to the space services, this band shall be used principally for the fixed-satellite service.
- 837** *Different category of service:* in Canada, Mexico and the United States,
Orb-85 the allocation of the band 11.7 - 12.1 GHz to the fixed service is on a secondary basis (see No. 424).
- 838** In the band 11.7 - 12.5 GHz in Regions 1 and 3, the fixed, fixed-satellite, mobile, except aeronautical mobile, and broadcasting services, in accordance with their respective allocations, shall not cause harmful interference to broadcasting-satellite stations operating in accordance with the provisions of Appendix 30*.
- 839** The use of the bands 11.7 - 12.2 GHz by the fixed-satellite service in
Orb-85 Region 2 and 12.2 - 12.7 GHz by the broadcasting-satellite service in Region 2 is limited to national and subregional systems. The use of the band 11.7 - 12.2 GHz by the fixed-satellite service in Region 2 is subject to previous agreement between the administrations concerned and those having services, operating or planned to operate in accordance with the Table, which may be affected (see Articles 11, 13 and 14). For the use of the band 12.2 - 12.7 GHz by the broadcasting-satellite service in Region 2, see Article 15.
- 840 and 841** SUP
Orb-85
- 842** *Additional allocation:* the band 12.1 - 12.2 GHz in Brazil and Peru, is
Orb-85 also allocated to the fixed service on a primary basis.

* *Note by the Secretary-General:* Appendix 30 has been revised by the First Session of the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It, Geneva, 1985, and becomes Appendix 30 (Orb-85).

843 SUP**Orb-85**

844 In Region 2, in the band 12.2 - 12.7 GHz, existing and future terrestrial
Orb-85 radiocommunication services shall not cause harmful interference to the space services operating in conformity with the Broadcasting-Satellite Plan for Region 2 contained in Appendix 30 (**Orb-85**).

845 In Region 3, the band 12.2 - 12.5 GHz is also allocated to the fixed-satellite (space-to-Earth) service limited to national and sub-regional systems. The power flux-density limits in No. 2574 shall apply to this frequency band. The introduction of the service in relation to the broadcasting-satellite service in Region 1 shall follow the procedures specified in Article 7 of Appendix 30*, with the applicable frequency band extended to cover 12.2 - 12.5 GHz.

846 In Region 2, in the band 12.2 - 12.7 GHz, assignments to stations of the
Orb-85 broadcasting-satellite service in the Plan for Region 2 contained in Appendix 30 (**Orb-85**) may also be used for transmissions in the fixed-satellite service (space-to-Earth), provided that such transmissions do not cause more interference or require more protection from interference than the broadcasting-satellite service transmissions operating in conformity with the Region 2 Plan. With respect to the space services, this band shall be used principally for the broadcasting-satellite service.

847 The broadcasting-satellite service in the band 12.5 - 12.75 GHz in
Orb-85 Region 3 is limited to community reception with a power flux-density not exceeding $-111 \text{ dB(W/m}^2\text{)}$ as defined in Annex 5 of Appendix 30 (**Orb-85**). See also Resolution 34.

848 *Additional allocation:* in Algeria, Angola, Saudi Arabia, Bahrain, Cameroon, the Central African Republic, the Congo, the Ivory Coast, Egypt, the United Arab Emirates, Ethiopia, Gabon, Ghana, Guinea, Iraq, Israel, Jordan, Kenya, Kuwait, the Lebanon, Libya, Madagascar, Mali, Morocco, Mongolia, Niger, Nigeria, Qatar, Syria, Senegal, Somalia, Sudan, Chad, Togo, Yemen (P.D.R. of) and Zaire, the band 12.5 - 12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

* *Note by the Secretary-General: See Note relating to No. 838.*

- 849** *Additional allocation:* in the Federal Republic of Germany, Belgium, Denmark, Spain, Finland, France, Greece, Liechtenstein, Luxembourg, Monaco, Norway, Uganda, the Netherlands, Portugal, Roumania, Sweden, Switzerland, Tanzania, Tunisia and Yugoslavia, the band 12.5 - 12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis.
- 850** *Additional allocation:* in Austria, Bulgaria, Hungary, the German Democratic Republic, Czechoslovakia and the U.S.S.R., the band 12.5 - 12.75 GHz is also allocated to the fixed service and the mobile, except aeronautical mobile, service on a primary basis. However, stations in these services shall not cause harmful interference to fixed-satellite service earth stations of countries in Region 1 other than those mentioned in this footnote. Coordination of these earth stations is not required with stations of the fixed and mobile services of the countries mentioned in this footnote. The power flux-density limit at the Earth's surface given in No. 2574 for the fixed-satellite service shall apply on the territory of the countries mentioned in this footnote.
- WARC-92**

GHz
12.75 – 14.3

Allocation to Services		
Region 1	Region 2	Region 3
12.75 – 13.25	FIXED FIXED-SATELLITE (Earth-to-space) 792A MOBILE Space Research (deep space) (space-to-Earth)	
13.25 – 13.4	AERONAUTICAL RADIONAVIGATION 851 852 853	
13.4 – 13.75	RADIOLOCATION Standard Frequency and Time Signal-Satellite (Earth-to-space) Space Research 713 853 854 855	
13.75 – 14	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Standard Frequency and Time Signal-Satellite (Earth-to-space) Space Research 713 853 854 855 855A 855B	
14 – 14.25	FIXED-SATELLITE (Earth-to-space) 858 RADIONAVIGATION 856 Space Research 857 859	
14.25 – 14.3	FIXED-SATELLITE (Earth-to-space) 858 RADIONAVIGATION 856 Space Research 857 859 860 861	

851 The use of the band 13.25 - 13.4 GHz by the aeronautical radionavigation service is limited to Doppler navigation aids.

852 Subject to agreement obtained under the procedure set forth in Article 14, the band 13.25 - 13.4 GHz may also be used in the space research service (Earth-to-space) on a secondary basis.

853 *Additional allocation:* in Bangladesh, India and Pakistan, the band 13.25 - 14 GHz is also allocated to the fixed service on a primary basis.

854 *Additional allocation:* in Afghanistan, Algeria, Angola, Saudi Arabia, Bahrain, Brunei Darussalam, Cameroon, the Republic of Korea, Egypt, the United Arab Emirates, Finland, Gabon, Guinea, Indonesia, Iran, Iraq, Israel, Jordan, Kuwait, the Lebanon, Madagascar, Malaysia, Malawi, Mali, Malta, Morocco, Mauritania, Niger, Nigeria, Pakistan, Qatar, Syria, Senegal, Singapore, Sudan, Sri Lanka, Sweden, Chad, Thailand and Tunisia, the band 13.4 - 14 GHz is also allocated to the fixed and mobile services on a primary basis.

855 *Additional allocation:* in Austria, Bulgaria, Hungary, Japan, Mongolia, the German Democratic Republic, Romania, the United Kingdom, Czechoslovakia and the U.S.S.R., the band 13.4 - 14 GHz is also allocated to the radionavigation service on a primary basis.

855A In the band 13.75 - 14 GHz, the e.i.r.p. of any emission from an earth station in the fixed-satellite service shall be at least 68 dBW, and should not exceed 85 dBW, with a minimum antenna diameter of 4.5 metres. In addition the e.i.r.p., averaged over one second, radiated by a station in the radio-location and radionavigation services towards the geostationary-satellite orbit shall not exceed 59 dBW. These values shall apply subject to review by the CCIR and until they are changed by a future competent world administrative radio conference (see Resolution **112 (WARC-92)**).

855B In the band 13.75 - 14 GHz geostationary space stations in the space research service, for which information for advance publication has been received by the IFRB prior to 31 January 1992, shall operate on an equal basis with stations in the fixed-satellite service; after that date new geostationary space stations in the space research service will operate on a secondary basis. Until 1 January 2000, stations in the fixed-satellite service shall not cause harmful interference to non-geostationary space stations in the space research and Earth exploration-satellite services; after that date these non-geostationary space stations will operate on a secondary basis in relation to the fixed-satellite service.

- 856** The use of the band 14 - 14.3 GHz by the radionavigation service shall be such as to provide sufficient protection to space stations of the fixed-satellite service (see Recommendation 708).
- 857** *Additional allocation:* in Afghanistan, Algeria, Angola, Saudi Arabia, WARC-92 Australia, Bahrain, Bangladesh, Botswana, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lesotho, the Lebanon, Malaysia, Malawi, Mali, Morocco, Mauritania, Niger, Oman, Pakistan, the Philippines, Qatar, Dem. People's Rep. of Korea, Syria, Senegal, Singapore, Somalia, Sudan, Sri Lanka, Swaziland, Tanzania, Chad, Thailand and Yemen, the band 14 - 14.3 GHz is also allocated to the fixed service on a primary basis.
- 858** The band 14 - 14.5 GHz may be used, within the fixed-satellite service Orb-88 (Earth-to-space), for feeder links for the broadcasting-satellite service, subject to coordination with other networks in the fixed-satellite service. Such use of feeder links is reserved for countries outside Europe.
- 859** The band 14 - 14.5 GHz is also allocated to the land mobile-satellite service (Earth-to-space) on a secondary basis.
- 860** *Additional allocation:* in the Federal Republic of Germany, Austria, WARC-92 Belgium, Denmark, Spain, Finland, France, Greece, Ireland, Iceland, Italy, Libya, Liechtenstein, Luxembourg, Norway, the Netherlands, Portugal, the United Kingdom, Sweden, Switzerland, Turkey and Yugoslavia, the band 14.25 - 14.3 GHz is also allocated to the fixed service on a primary basis.
- 861** *Additional allocation:* in Japan, Pakistan, the United Kingdom and Thailand, the band 14.25 - 14.3 GHz is also allocated to the mobile, except aeronautical mobile, service on a primary basis.

GHz
14.3 – 15.35

Allocation to Services		
Region 1	Region 2	Region 3
14.3 – 14.4 FIXED FIXED-SATELLITE (Earth-to-space) 858 MOBILE except aeronautical mobile Radionavigation-Satellite 859	14.3 – 14.4 FIXED-SATELLITE (Earth-to-space) 858 Radionavigation-Satellite 859	14.3 – 14.4 FIXED FIXED-SATELLITE (Earth-to-space) 858 MOBILE except aeronautical mobile Radionavigation-Satellite 859
14.4 – 14.47	FIXED FIXED-SATELLITE (Earth-to-space) 858 MOBILE except aeronautical mobile Space Research (space-to-Earth) 859	
14.47 – 14.5	FIXED FIXED-SATELLITE (Earth-to-space) 858 MOBILE except aeronautical mobile Radio Astronomy 859 862	
14.5 – 14.8	FIXED FIXED-SATELLITE (Earth-to-space) 863 MOBILE Space Research	
14.8 – 15.35	FIXED MOBILE Space Research 720	

862 In making assignments to stations of other services to which the band 14.47 - 14.5 GHz is allocated, administrations are urged to take all practicable steps to protect spectral line observations of the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).

863 The use of the band 14.5 - 14.8 GHz by the fixed-satellite service (Earth-
Orb-88 to-space) is limited to feeder links for the broadcasting-satellite service. This use is reserved for countries outside Europe.

GHz
15.35 – 17.7

Allocation to Services		
Region 1	Region 2	Region 3
15.35 – 15.4	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 864 865	
15.4 – 15.7	AERONAUTICAL RADIONAVIGATION 733 797	
15.7 – 16.6	RADIOLOCATION 866 867	
16.6 – 17.1	RADIOLOCATION Space Research (deep space) (Earth-to-space) 866 867	
17.1 – 17.2	RADIOLOCATION 866 867	
17.2 – 17.3	RADIOLOCATION Earth Exploration-Satellite (active) Space Research (active) 866 867	
17.3 – 17.7 FIXED-SATELLITE (Earth-to-space) 869 Radiolocation 868	17.3 – 17.7 FIXED-SATELLITE (Earth-to-space) 869 BROADCASTING- SATELLITE Radiolocation 868 868A 869A	17.3 – 17.7 FIXED-SATELLITE (Earth-to-space) 869 Radiolocation 868

864 All emissions in the band 15.35 - 15.4 GHz are prohibited, except those provided for by No. **865**.

865 *Additional allocation:* in Afghanistan, Saudi Arabia, Bahrain, Cameroon, Egypt, the United Arab Emirates, Guinea, Iran, Iraq, Israel, Kuwait, the Lebanon, Libya, Pakistan, Qatar, Syria, Somalia and Yugoslavia, the band 15.35 - 15.4 GHz is also allocated to the fixed and mobile services on a secondary basis.

866 *Additional allocation:* in Afghanistan, Algeria, Angola, Saudi Arabia, **WARC-92** Austria, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, the Congo, Costa Rica, Egypt, El Salvador, the United Arab Emirates, Finland, Guatemala, India, Indonesia, Iran, Jordan, Kuwait, Libya, Malaysia, Malawi, Morocco, Mozambique, Nepal, Nicaragua, Oman, Pakistan, Qatar, Singapore, Somalia, Sudan, Sri Lanka, Sweden, Swaziland, Tanzania, Chad, Thailand, Yemen and Yugoslavia, the band 15.7 - 17.3 GHz is also allocated to the fixed and mobile services on a primary basis.

867 *Additional allocation:* in Israel, the band 15.7 - 17.3 GHz is also allocated to the fixed and mobile services on a primary basis. These services shall not claim protection from or cause harmful interference to services operating in accordance with the Table in countries other than those included in No. **866**.

868 *Additional allocation:* in Afghanistan, Algeria, the Federal Republic of **WARC-92** Germany, Angola, Saudi Arabia, Austria, Bahrain, Bangladesh, Cameroon, Costa Rica, El Salvador, the United Arab Emirates, Finland, Guatemala, Honduras, India, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Japan, Jordan, Kuwait, Libya, Nepal, Nicaragua, Oman, Pakistan, Qatar, Sudan, Sri Lanka, Sweden, Thailand and Yugoslavia, the band 17.3 - 17.7 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits given in Nos. **2505** and **2508** shall apply.

868A In the band 17.3 - 17.8 GHz, sharing between the fixed-satellite service **WARC-92** (Earth-to-space) and the broadcasting-satellite service shall also be in accordance with the provisions of section 1 of Annex 4 of Appendix **30A**.

869 The use of the band 17.3 - 18.1 GHz by the fixed-satellite service (Earth-
Orb-85 to-space) is limited to feeder links for the broadcasting-satellite service. For the use of the band 17.3 - 17.8 GHz in Region 2 by the feeder links for the broadcasting-satellite service in the band 12.2 - 12.7 GHz, see Article **15A**.

869A In Region 2, the allocation to the broadcasting-satellite service in the
WARC-92 band 17.3 - 17.8 GHz shall come into effect on 1 April 2007. After that date, use of the fixed-satellite (space-to-Earth) service in the band 17.7 - 17.8 GHz shall not claim protection from and shall not cause harmful interference to operating systems in the broadcasting-satellite service.

GHz
17.7 – 18.8

Allocation to Services		
Region 1	Region 2	Region 3
17.7 – 18.1 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE	17.7 – 17.8 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 BROADCASTING-SATELLITE Mobile 869B 868A 869A	17.7 – 18.1 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE
	17.8 – 18.1 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE	
18.1 – 18.4 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 870A MOBILE 870 870B		
18.4 – 18.6 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE		
18.6 – 18.8 FIXED FIXED-SATELLITE (space-to-Earth) 872 MOBILE except aeronautical mobile Earth Exploration-Satellite (passive) Space Research (passive) 871	18.6 – 18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 872 MOBILE except aeronautical mobile SPACE RESEARCH (passive) 871	18.6 – 18.8 FIXED FIXED-SATELLITE (space-to-Earth) 872 MOBILE except aeronautical mobile Earth Exploration-Satellite (passive) Space Research (passive) 871

869B In Region 2, the allocation of the band 17.7 - 17.8 GHz to the mobile WARC-92 service is on a primary basis until 31 March 2007.

870 The band 18.1 - 18.3 GHz is also allocated to the meteorological-satellite service (space-to-Earth) on a primary basis. Its use is limited to geostationary satellites and shall be in accordance with the provisions of No. 2578.

870A The use of the band 18.1 - 18.4 GHz by the fixed-satellite service (Earth-WARC-92 to-space) is limited to feeder links for the broadcasting-satellite service.

870B *Alternative allocation:* in the Federal Republic of Germany, Denmark, WARC-92 the United Arab Emirates, Greece, Poland, the Czech and Slovak Federal Republic and the United Kingdom, the band 18.1 - 18.4 GHz is allocated to the fixed, fixed-satellite (space-to-Earth) and mobile services on a primary basis. The provisions of No. 870 also apply.

871 In making assignments to stations in the fixed and mobile services, administrations are invited to take account of passive sensors in the earth-exploration satellite and space research services operating in the band 18.6 - 18.8 GHz. In this band, administrations should endeavour to limit as far as possible both the power delivered by the transmitter to the antenna and the e.i.r.p. in order to reduce the risk of interference to passive sensors to the minimum.

872 In assigning frequencies to stations in the fixed-satellite service in the direction space-to-Earth, administrations are requested to limit as far as practicable the power flux-density at the Earth's surface in the band 18.6 - 18.8 GHz, in order to reduce the risk of interference to passive sensors in the earth exploration-satellite and space research services.

GHz
18.8 – 22.21

Allocation to Services		
Region 1	Region 2	Region 3
18.8 – 19.7	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	
19.7 – 20.1 FIXED-SATELLITE (space-to-Earth) Mobile-Satellite (space-to-Earth) 873	19.7 – 20.1 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 873 873A 873B 873C 873D 873E	19.7 – 20.1 FIXED-SATELLITE (space-to-Earth) Mobile-Satellite (space-to-Earth) 873
20.1 – 20.2	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 873 873A 873B 873C 873D	
20.2 – 21.2	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard Frequency and Time Signal (space-to-Earth) 873	
21.2 – 21.4	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	
21.4 – 22 FIXED MOBILE BROADCASTING- SATELLITE 873F	21.4 – 22 FIXED MOBILE	21.4 – 22 FIXED MOBILE BROADCASTING- SATELLITE 873F 873G
22 – 22.21	FIXED MOBILE except aeronautical mobile 874	

873 *Additional allocation:* in Afghanistan, Algeria, Angola, Saudi Arabia, Bahrain, Bangladesh, Brazil, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Singapore, Somalia, Sudan, Sri Lanka, Tanzania, Chad, Thailand, Togo, Tunisia and Zaire, the band 19.7 - 21.2 GHz is also allocated to the fixed and mobile services on a primary basis. This additional use shall not impose any limitation on the power flux-density of space stations in the fixed-satellite service in the band 19.7 - 21.2 GHz and of space stations in the mobile-satellite service in the band 19.7 - 20.2 GHz where such allocation to the mobile-satellite service is on a primary basis in the latter band.

873A In order to facilitate interregional coordination between networks in the mobile-satellite and fixed-satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz.

873B In the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz in Region 2, and in the bands 20.1 - 20.2 GHz and 29.9 - 30 GHz in Regions 1 and 3, networks which are both in the fixed-satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.

873C In the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz, the provisions of **WARC-92** No. 953 do not apply with respect to the mobile-satellite service.

873D The allocation to the mobile-satellite service is intended for use by networks which use narrow spot-beam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7 - 20.1 GHz in Region 2 and in the band 20.1 - 20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. 873.

873E The use of the bands 19.7 - 20.1 GHz and 29.5 - 29.9 GHz by the mobile-satellite service in Region 2 is limited to satellite networks which are both in the fixed-satellite service and in the mobile-satellite service as described in No. 873B.

873F In Regions 1 and 3, the allocation to the broadcasting-satellite service in the band 21.4 - 22 GHz shall come into effect on 1 April 2007. The use of this band by the broadcasting-satellite service after that date and on an interim basis prior to that date is subject to the provisions of Resolution 525 (WARC-92).

873G *Additional allocation:* in Japan, the band 21.4 - 22 GHz is also allocated to the broadcasting service on a primary basis.

874 In making assignments to stations of other services, administrations are urged to take all practicable steps to protect the spectral line observations of the radio astronomy service in the band 22.01 - 22.21 GHz from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see also Nos. 343 and 344 and Article 36).

GHz
22.21 – 24.05

Allocation to Services		
Region 1	Region 2	Region 3
22.21 – 22.5	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 875 876	
22.5 – 22.55	FIXED MOBILE	
22.55 – 23	FIXED INTER-SATELLITE MOBILE 879	
23 – 23.55	FIXED INTER-SATELLITE MOBILE 879	
23.55 – 23.6	FIXED MOBILE	
23.6 – 24	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 880	
24 – 24.05	AMATEUR AMATEUR-SATELLITE 881	

875 In making assignments to stations of other services, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference in the band 22.21 - 22.5 GHz. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see also Nos. **343** and **344** and Article **36**).

876 The use of the band 22.21 - 22.5 GHz by the earth exploration-satellite (passive) and space research (passive) services shall not impose constraints upon the fixed and mobile, except aeronautical mobile, services.

877 and 878 SUP
WARC-92

879 In making assignments to stations of other services, administrations are urged to take all practicable steps to protect the spectral line observations of the radio astronomy service in the bands 22.81 - 22.86 GHz and 23.07 - 23.12 GHz from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see also Nos. **343** and **344** and Article **36**).

880 All emissions in the band 23.6 - 24 GHz are prohibited.

881 The band 24 - 24.25 GHz (centre frequency 24.125 GHz) is designated for industrial, scientific and medical (ISM) applications. Radiocommunication services operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. **1815**.

GHz
24.05 – 25.5

Allocation to Services		
Region 1	Region 2	Region 3
24.05 – 24.25	RADIOLOCATION Amateur Earth Exploration-Satellite (active) 881	
24.25 – 24.45 FIXED	24.25 – 24.45 RADIONAVIGATION	24.25 – 24.45 RADIONAVIGATION FIXED MOBILE
24.45 – 24.65 FIXED INTER-SATELLITE	24.45 – 24.65 INTER-SATELLITE RADIONAVIGATION 882E	24.45 – 24.65 FIXED INTER-SATELLITE MOBILE RADIONAVIGATION 882E
24.65 – 24.75 FIXED INTER-SATELLITE	24.65 – 24.75 INTER-SATELLITE RADIOLOCATION-SATELLITE (Earth-to-space)	24.65 – 24.75 FIXED INTER-SATELLITE MOBILE 882E 882F
24.75 – 25.25 FIXED	24.75 – 25.25 FIXED-SATELLITE (Earth-to-space) 882G	24.75 – 25.25 FIXED FIXED-SATELLITE (Earth-to-space) 882G MOBILE 882F
25.25 – 25.5	FIXED INTER-SATELLITE 881A MOBILE Standard Frequency and Time Signal-Satellite (Earth-to-space)	

GHz
25.5 – 29.9

Allocation to Services		
Region 1	Region 2	Region 3
25.5 – 27	FIXED INTER-SATELLITE 881A MOBILE Earth Exploration-Satellite (space-to-Earth) Standard Frequency and Time Signal-Satellite (Earth-to-space)	
27 – 27.5 FIXED INTER-SATELLITE 881A MOBILE	27 – 27.5 FIXED FIXED-SATELLITE (Earth-to-space) INTER-SATELLITE 881A 881B MOBILE	
27.5 – 28.5	FIXED FIXED-SATELLITE (Earth-to-space) 882D MOBILE 882A 882B	
28.5 – 29.5	FIXED FIXED-SATELLITE (Earth-to-space) 882D MOBILE Earth Exploration-Satellite (Earth-to-space) 882C 882B	
29.5 – 29.9 FIXED-SATELLITE (Earth-to-space) 882D Earth Exploration-Satellite (Earth-to-space) 882C Mobile-Satellite (Earth-to-space) 882B 883	29.5 – 29.9 FIXED-SATELLITE (Earth-to-space) 882D MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 873A 873B 873C 873E 882B 883	29.5 – 29.9 FIXED-SATELLITE (Earth-to-space) 882D Earth Exploration-Satellite (Earth-to-space) 882C Mobile-Satellite (Earth-to-space) 882B 883

GHz
29.9 – 31.8

Allocation to Services		
Region 1	Region 2	Region 3
29.9 – 30	FIXED-SATELLITE (Earth-to-space) 882D MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 873A 873B 873C 882 882A 882B 883	
30 – 31	FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) Standard Frequency and Time Signal-Satellite (space-to-Earth) 883	
31 – 31.3	FIXED MOBILE Standard Frequency and Time Signal-Satellite (space-to-Earth) Space Research 884 885 886	
31.3 – 31.5	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 887	
31.5 – 31.8 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 888 889	31.5 – 31.8 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 888	31.5 – 31.8 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 888

881A Use of the 25.25 - 27.5 GHz band by the inter-satellite service is limited
WARC-92 to space research and Earth exploration-satellite applications, and also transmissions of data originating from industrial and medical activities in space.

881B Space services using non-geostationary satellites operating in the inter-
WARC-92 satellite service in the band 27 - 27.5 GHz are exempt from the provisions of No. 2613.

882 The band 29.95 - 30 GHz may be used for space-to-space links in the
 earth exploration-satellite service for telemetry, tracking, and control purposes, on a secondary basis.

882A *Additional allocation:* the bands 27.500 - 27.501 GHz and 29.999 -
WARC-92 30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for up-link power control. Such space-to-Earth transmissions shall not exceed an equivalent isotropically radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit. In the band 27.500 - 27.501 GHz, such space-to-Earth transmissions shall not produce a power flux-density in excess of the values specified in No. 2578 on the Earth's surface.

882B *Additional allocation:* the band 27.501 - 29.999 GHz is also allocated to
WARC-92 the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up-link power control.

882C In the band 28.5 - 30 GHz, the earth exploration-satellite service is
WARC-92 limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.

882D The band 27.5 - 30 GHz may be used by the fixed-satellite service (Earth-
WARC-92 to-space) for the provision of feeder links for the broadcasting-satellite service.

882E The inter-satellite service shall not claim protection from harmful inter-
WARC-92 ference from airport surface detection equipment stations of the radio-navigation service.

882F *Additional allocation:* in Japan, the band 24.65 - 25.25 GHz is also allo-
WARC-92 cated to the radionavigation service on a primary basis until 2008.

882G In the band 24.75 - 25.25 GHz, feeder links to stations of the broadcast-
WARC-92 ing-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Such other uses shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.

883 *Additional allocation:* in Afghanistan, Algeria, Saudi Arabia, Bahrain, **WARC-92** Bangladesh, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, Egypt, the United Arab Emirates, Ethiopia, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Pakistan, Qatar, Syria, Singapore, Somalia, Sudan, Sri Lanka, Chad and Thailand, the band 29.5 - 31 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits specified in Nos. **2505** and **2508** shall apply.

884 In the band 31 - 31.3 GHz the power flux-density limits specified in **Orb-88** No. **2582** shall apply to the space research service.

885 *Different category of service:* in Bulgaria, Cuba, Mongolia, Poland, the **WARC-92** German Democratic Republic, Czechoslovakia and the U.S.S.R., the allocation of the band 31 - 31.3 GHz to the space research service is on a primary basis (see No. **425**).

886 In making assignments to stations of other services, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference in the band 31.2 - 31.3 GHz. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).

887 All emissions in the band 31.3 - 31.5 GHz are prohibited.

888 In Regions 1 and 3, in making assignments to stations of other services to which the band 31.5 - 31.8 GHz is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).

In Region 2, all emissions in the band 31.5 - 31.8 GHz are prohibited.

889 *Different category of service:* in Bulgaria, Egypt, Mongolia, Poland, the **WARC-92** German Democratic Republic, Romania, Czechoslovakia and the U.S.S.R., the allocation of the band 31.5 - 31.8 GHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. **425**).

GHz
31.8 – 37

Allocation to Services		
Region 1	Region 2	Region 3
31.8 – 32	RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 892 893	
32 – 32.3	INTER-SATELLITE RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 892 893	
32.3 – 33	INTER-SATELLITE RADIONAVIGATION 892 893	
33 – 33.4	RADIONAVIGATION 892	
33.4 – 34.2	RADIOLOCATION 892 894	
34.2 – 34.7	RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) 894	
34.7 – 35.2	RADIOLOCATION Space Research 896 894	
35.2 – 36	METEOROLOGICAL AIDS RADIOLOCATION 894 897	
36 – 37	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 898	

890 and 891 SUP
WARC-92

892 Subject to agreement obtained under the procedure set forth in Article 14, the band 31.8 - 33.8 GHz may also be used in Japan for space-to-Earth transmissions in the fixed-satellite service up to 31 December 1990.

893 In designing systems for the inter-satellite and radionavigation services in the band 32 - 33 GHz, and for the space research service (deep space) in the band 31.8 - 32.3 GHz, administrations shall take all necessary measures to prevent harmful interference between these services, bearing in mind the safety aspects of the radionavigation service (see Recommendation 707 (WARC-79)).

894 *Additional allocation:* in Afghanistan, Saudi Arabia, Bahrain, WARC-92 Bangladesh, Egypt, the United Arab Emirates, Spain, Finland, Gabon, Guinea, Indonesia, Iran, Iraq, Israel, Jordan, Kenya, Kuwait, the Lebanon, Libya, Malaysia, Malawi, Mali, Malta, Morocco, Mauritania, Nepal, Niger, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Senegal, Singapore, Somalia, Sudan, Sri Lanka, Sweden, Tanzania, Thailand, Togo, Tunisia, Yemen and Zaire, the band 33.4 - 36 GHz is also allocated to the fixed and mobile services on a primary basis.

895 SUP
WARC-92

896 *Different category of service:* in Bulgaria, Cuba, Mongolia, the German WARC-92 Democratic Republic, Czechoslovakia and the U.S.S.R., the allocation of the band 34.7 - 35.2 GHz to the space research service is on a primary basis (see No. 425).

897 Radars located on spacecraft may be operated on a primary basis in the band 35.5 - 35.6 GHz.

898 In making assignments to stations of other services, administrations are urged to take all practicable steps to protect the spectral line observations of the radio astronomy service in the band 36.43 - 36.5 GHz from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).

GHz
37 – 42.5

Allocation to Services		
Region 1	Region 2	Region 3
37 – 37.5	FIXED MOBILE SPACE RESEARCH (space-to-Earth)	
37.5 – 38	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (space-to-Earth) Earth Exploration-Satellite (space-to-Earth)	
38 – 39.5	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Earth Exploration-Satellite (space-to-Earth)	
39.5 – 40	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite (space-to-Earth)	
40 – 40.5	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth Exploration-Satellite (space-to-Earth)	
40.5 – 42.5	BROADCASTING-SATELLITE /BROADCASTING/ Fixed Mobile	

GHz
42.5 – 54.25

Allocation to Services		
Region 1	Region 2	Region 3
42.5 – 43.5	FIXED FIXED-SATELLITE (Earth-to-space) 901 MOBILE except aeronautical mobile RADIO ASTRONOMY 900	
43.5 – 47	MOBILE 902 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 903	
47 – 47.2	AMATEUR AMATEUR-SATELLITE	
47.2 – 50.2	FIXED FIXED-SATELLITE (Earth-to-space) 901 MOBILE 905 904	
50.2 – 50.4	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	
50.4 – 51.4	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Mobile-Satellite (Earth-to-space)	
51.4 – 54.25	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 906 907	

899 SUP
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- 900** In making assignments to stations of other services to which the band 42.5 - 43.5 GHz is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference, especially in the bands 42.77 - 42.87 GHz, 43.07 - 43.17 GHz, and 43.37 - 43.47 GHz, which are used for spectral line observations of silicon monoxide. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).
- 901** The allocation of the spectrum for the fixed-satellite service in the bands 42.5 - 43.5 GHz and 47.2 - 50.2 GHz for Earth-to-space transmission is greater than that in the band 37.5 - 39.5 GHz for space-to-Earth transmission in order to accommodate feeder links to broadcasting satellites. Administrations are urged to take all practicable steps to reserve the band 47.2 - 49.2 GHz for feeder links for the broadcasting-satellite service operating in the band 40.5 - 42.5 GHz.
- 902** In the bands 43.5 - 47 GHz, 66 - 71 GHz, 95 - 100 GHz, 134 - 142 GHz, 190 - 200 GHz and 252 - 265 GHz, stations in the land mobile service may be operated subject to not causing harmful interference to the space radiocommunication services to which these bands are allocated (see No. 435).
- 903** In the bands 43.5 - 47 GHz, 66 - 71 GHz, 95 - 100 GHz, 134 - 142 GHz, 190 - 200 GHz and 252 - 265 GHz, satellite links connecting land stations at specified fixed points are also authorized when used in conjunction with the mobile-satellite service or the radionavigation-satellite service.
- 904** The bands 48.94 - 49.04 GHz and 97.88 - 98.08 GHz, are also allocated to the radio astronomy service on a primary basis for spectral line observations. In making assignments to stations of other services to which these bands are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).

- 905** In the band 48.94 - 49.04 GHz, all emissions from airborne stations are prohibited.
- 906** In the bands 51.4 - 54.25 GHz, 58.2 - 59 GHz, 64 - 65 GHz and 72.77 - 72.91 GHz, radio astronomy observations may be carried out under national arrangements. Administrations are urged to take all practicable steps to protect radio astronomy observations in these bands from harmful interference.
- 907** In the bands 51.4 - 54.25 GHz, 58.2 - 59 GHz, 64 - 65 GHz, 86 - 92 GHz, 105 - 116 GHz and 217 - 231 GHz, all emissions are prohibited.

GHz
54.25 – 74

Allocation to Services		
Region 1	Region 2	Region 3
54.25 – 58.2	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE 909 SPACE RESEARCH (passive) 908	
58.2 – 59	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 906 907	
59 – 64	FIXED INTER-SATELLITE MOBILE 909 RADIOLOCATION 910 911	
64 – 65	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 906 907	
65 – 66	EARTH EXPLORATION-SATELLITE SPACE RESEARCH Fixed Mobile	
66 – 71	MOBILE 902 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 903	
71 – 74	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) 906	

- 908** *Additional allocation:* in the Federal Republic of Germany, Japan and the United Kingdom, the band 54.25 - 58.2 GHz is also allocated to the radiolocation service on a primary basis.
- 909** In the bands 54.25 - 58.2 GHz, 59 - 64 GHz, 116 - 134 GHz, 170 - 182 GHz and 185 - 190 GHz, stations in the aeronautical mobile service may be operated subject to not causing harmful interference to the inter-satellite service (see No. 435).
- 910** In the bands 59 - 64 GHz and 126 - 134 GHz, airborne radars in the radiolocation service may be operated subject to not causing harmful interference to the inter-satellite service (see No. 435).
- 911** The band 61 - 61.5 GHz (centre frequency 61.25 GHz) is designated for industrial, scientific and medical (ISM) applications. The use of this frequency band for ISM applications shall be subject to special authorization by the administration concerned in agreement with other administrations whose radiocommunication services might be affected. In applying this provision administrations shall have due regard to the latest relevant CCIR Recommendations.

GHz
74 – 92

Allocation to Services		
Region 1	Region 2	Region 3
74 – 75.5	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Space Research (space-to-Earth)	
75.5 – 76	AMATEUR AMATEUR-SATELLITE Space Research (space-to-Earth)	
76 – 81	RADIOLOCATION Amateur Amateur-Satellite Space Research (space-to-Earth) 912	
81 – 84	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth) Space Research (space-to-Earth)	
84 – 86	FIXED MOBILE BROADCASTING BROADCASTING-SATELLITE 913	
86 – 92	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 907	

- 912** In the band 78 - 79 GHz radars located on space stations may be operated on a primary basis in the earth exploration-satellite service and in the space research service.
- 913** In the band 84 - 86 GHz, stations in the fixed, mobile and broadcasting services shall not cause harmful interference to broadcasting-satellite stations operating in accordance with the decisions of the appropriate frequency assignment planning conference for the broadcasting-satellite service.

GHz
92 – 126

Allocation to Services		
Region 1	Region 2	Region 3
92 – 95	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIOLOCATION 914	
95 – 100	MOBILE 902 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE Radiolocation 903 904	
100 – 102	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 722	
102 – 105	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 722	
105 – 116	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 722 907	
116 – 126	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE 909 SPACE RESEARCH (passive) 722 915 916	

- 914** The band 93.07 - 93.27 GHz is also used by the radio astronomy service for spectral line observations. In making assignments to stations of the services to which this band is allocated, administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).
- 915** The band 119.98 - 120.02 GHz is also allocated to the amateur service on a secondary basis.
- 916** The band 122 - 123 GHz (centre frequency 122.5 GHz) is designated for industrial, scientific and medical (ISM) applications. The use of this frequency band for ISM applications shall be subject to special authorization by the administration concerned in agreement with other administrations whose radiocommunication services might be affected. In applying this provision administrations shall have due regard to the latest relevant CCIR Recommendations.

GHz
126 – 156

Allocation to Services		
Region 1	Region 2	Region 3
126 – 134	FIXED INTER-SATELLITE MOBILE 909 RADIOLOCATION 910	
134 – 142	MOBILE 902 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE Radiolocation 903 917 918	
142 – 144	AMATEUR AMATEUR-SATELLITE	
144 – 149	RADIOLOCATION Amateur Amateur-Satellite 918	
149 – 150	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	
150 – 151	EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (passive) 919	
151 – 156	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	

- 917** In the band 140.69 - 140.98 GHz all emissions from airborne stations, and from space stations in the space-to-Earth direction, are prohibited.
- 918** The bands 140.69 - 140.98 GHz, 144.68 - 144.98 GHz, 145.45 - 145.75 GHz and 146.82 - 147.12 GHz are also allocated to the radio astronomy service on a primary basis for spectral line observations. In making assignments to stations of other services to which the bands are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).
- 919** The bands 150 - 151 GHz, 174.42 - 175.02 GHz, 177 - 177.4 GHz, 178.2 - 178.6 GHz, 181 - 181.46 GHz and 186.2 - 186.6 GHz are also allocated to the radio astronomy service on a secondary basis for spectral line observations. In making assignments to stations of other services to which these bands are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).

GHz
156 – 185

Allocation to Services		
Region 1	Region 2	Region 3
156 – 158	EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	
158 – 164	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	
164 – 168	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive)	
168 – 170	FIXED MOBILE	
170 – 174.5	FIXED INTER-SATELLITE MOBILE 909 919	
174.5 – 176.5	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE 909 SPACE RESEARCH (passive) 919	
176.5 – 182	FIXED INTER-SATELLITE MOBILE 909 919	
182 – 185	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 920 921	

- 920** *Additional allocation:* in the United Kingdom, the band 182 - 185 GHz is also allocated to the fixed and mobile services on a primary basis.
- 921** In the band 182 - 185 GHz all emissions are prohibited except for those under the provisions of No. **920**.

GHz
185 – 235

Allocation to Services		
Region 1	Region 2	Region 3
185 – 190	FIXED INTER-SATELLITE MOBILE 909 919	
190 – 200	MOBILE 902 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 722 903	
200 – 202	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 722	
202 – 217	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 722	
217 – 231	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 722 907	
231 – 235	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	

GHz
235 – 400

Allocation to Services		
Region 1	Region 2	Region 3
235 – 238	EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (passive)	
238 – 241	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	
241 – 248	RADIOLOCATION Amateur Amateur-Satellite 922	
248 – 250	AMATEUR AMATEUR-SATELLITE	
250 – 252	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 923	
252 – 265	MOBILE 902 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 903 923 924 925	
265 – 275	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 926	
275 – 400	(Not allocated)	927

- 922** The band 244 - 246 GHz (centre frequency 245 GHz) is designated for industrial, scientific and medical (ISM) applications. The use of this frequency band for ISM applications shall be subject to special authorization by the administration concerned in agreement with other administrations whose radiocommunication services might be affected. In applying this provision administrations shall have due regard to the latest relevant CCIR Recommendations.
- 923** The bands 250 - 251 GHz and 262.24 - 262.76 GHz are also allocated to the radio astronomy service on a primary basis for spectral line observations. In making assignments to stations of other services to which these bands are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).
- 924** The band 257.5 - 258 GHz is also allocated to the radio astronomy service on a secondary basis for spectral line observations. In making assignments to stations of other services to which the band is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).
- 925** In the Federal Republic of Germany, Argentina, Spain, Finland, France, India, Italy, the Netherlands and Sweden, the band 261 - 265 GHz is also allocated to the radio astronomy service on a primary basis. In making assignments to stations of other services to which the band is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **343** and **344** and Article **36**).

926 In making assignments to stations of other services to which the band 265 - 275 GHz is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference, especially in the bands 265.64 - 266.16 GHz, 267.34 - 267.86 GHz and 271.74 - 272.26 GHz, which are used for spectral line observations. Emissions from space or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).

927 The frequency band 275 - 400 GHz may be used by administrations for experimentation with, and development of, various active and passive services. In this band a need has been identified for the following spectral line measurements for passive services:

- radio astronomy service: 278 - 280 GHz and 343 - 348 GHz;
- space research service (passive) and earth exploration-satellite service (passive): 275 - 277 GHz, 300 - 302 GHz, 324 - 326 GHz, 345 - 347 GHz, 363 - 365 GHz and 379 - 381 GHz.

Future research in this largely unexplored spectral region may yield additional spectral lines and continuum bands of interest to the passive services. Administrations are urged to take all practicable steps to protect these passive services from harmful interference until the next competent world administrative radio conference.

928
to
952 NOT allocated

ARTICLE 9

Special Rules for the Assignment and Use of Frequencies

- 953 § 1. Members recognize that the safety aspects of radionavigation and other safety services require special measures to ensure their freedom from harmful interference; it is necessary therefore to take this factor into account in the assignment and use of frequencies.
- 954 § 2. (1) Members recognize that among frequencies which have long-distance propagation characteristics, those in the bands between 5 MHz and 30 MHz are particularly useful for long-distance communications; they agree to make every possible effort to reserve these bands for such communications. Whenever frequencies in these bands are used for short- or medium-distance communications, the minimum power necessary shall be employed.
- 955 (2) To reduce requirements for frequencies in the bands between 5 MHz and 30 MHz and thus to prevent harmful interference to long-distance radiocommunications, administrations are encouraged to use, whenever practicable, any other possible means of communication.
- 956 § 3. (1) When special circumstances make it indispensable to do so, an administration may, as an exception to the normal methods of working authorized by these Regulations, have recourse to the special methods of working enumerated below, on the sole condition that the characteristics of the stations still conform to those inserted in the Master International Frequency Register:
- 957 a) a station in the fixed service or an earth station in the fixed-satellite service may, under the conditions defined in Nos. 420 to 423, transmit to mobile stations on its normal frequencies;
- 958 b) a land station may communicate, under the conditions defined in Nos. 420 to 423, with fixed stations in the fixed service or earth stations in the fixed-satellite service or other land stations of the same category.

- 959 (2) However, in circumstances involving the safety of life, or the safety of a ship or aircraft, a land station may communicate with fixed stations or land stations of another category.
- 960 § 4. Any administration may assign a frequency in a band allocated to the fixed service or allocated to the fixed-satellite service to a station authorized to transmit, unilaterally, from one specified fixed point to one or more specified fixed points provided that such transmissions are not intended to be received directly by the general public.
- 961 § 5. Any mobile station using an emission which satisfies the frequency tolerance applicable to the coast station with which it is communicating may transmit on the same frequency as the coast station on condition that the latter requests such transmission and that no harmful interference is caused to other stations.
- 962 § 6. In certain cases provided for in Articles 38, N 38 and
Mob-87 59, aircraft stations are authorized to use frequencies in the bands allocated to the maritime mobile service for the purpose of communicating with stations of that service (see No. 4148).
- 963 § 7. Aircraft earth stations are authorized to use frequencies in the bands allocated to the maritime mobile-satellite service for the purpose of communicating, via the stations of that service, with the public telegraph and telephone networks.
- 964 § 8. Any emission capable of causing harmful interference to distress, alarm, urgency or safety communications on the international distress and emergency frequencies established for these purposes by these Regulations is prohibited. Supplementary distress frequencies available on less than a worldwide basis should be afforded adequate protection.
- 965
to
989 NOT allocated.

CHAPTER IV

Coordination, Notification and Registration of Frequencies. International Frequency Registration Board

ARTICLE 10

International Frequency Registration Board

Section I. Functions of the Board

- 990 § 1. The constitution and the essential duties of the International Frequency Registration Board are defined in the Convention.
- 991 § 2. The functions of the Board shall include:
- 992 a) the processing of frequency assignment notices, including information about any associated orbital locations of geostationary satellites, received from administrations for recording in the Master International Frequency Register;
- 993 b) the processing of information received from administrations in application of the advance publication, coordination and other procedures of the Radio Regulations and the Final Acts of administrative radio conferences; and the provision of assistance to administrations in these matters, at their request;
- 994 c) the processing and coordination of seasonal schedules of high frequency broadcasting with a view to accommodating requirements of all administrations for that service;

- 995 *d)* the compilation, for publication in suitable form and at appropriate intervals by the Secretary-General, of frequency lists reflecting the data recorded in the Master International Frequency Register, as well as other material relating to the assignment and use of frequencies;
- 996 *e)* the review of entries in the Master International Frequency Register with a view to amending or eliminating, as appropriate, those which do not reflect actual frequency usage, in agreement with the administrations which notified the assignments concerned;
- 997 *f)* the study, on a long-term basis, of the usage of the radio frequency spectrum, with a view to making recommendations for its more effective use;
- 998 *g)* the investigation, at the request of one or more of the interested administrations, of harmful interference and the formulation of recommendations with respect thereto;
- 999 *h)* the provision of assistance to administrations in the field of radio spectrum utilization, in particular to those administrations in need of special assistance, and the recommendation to administrations, where appropriate, of adjustments in their frequency assignments in order to obtain a better use of the radio spectrum;
- 1000 *i)* the collection of such results of monitoring observations as administrations and organizations may be able to supply, and the making of arrangements, through the Secretary-General, for their publication in suitable form;

- 1001 *j)* the development of Technical Standards¹ in accordance with Nos. 1454 and 1582 and of Rules of Procedure¹ for internal use by the Board in the exercise of its functions;
- 1002 *k)* the formulation and reference to the CCIR of all general technical questions arising from the Board's examination of frequency assignments;
- 1003 *l)* the technical assistance in the preparation for and organisation of radio conferences in consultation, as appropriate, with the other permanent organs of the Union, and with due regard for the pertinent directives of the Administrative Council in accordance with the Convention;
- 1004 *m)* the participation in an advisory capacity, upon invitation by the organizations or countries concerned, in conferences and meetings where questions relating to the assignment and utilization of frequencies are discussed;
- 1005 *n)* the provision of assistance to administrations, at their request, in the training of senior staff in the fields of spectrum management and utilization, particularly for those countries in special need;
- 1006 *o)* the discharge of such other functions as are specified in the Radio Regulations and in the Final Acts of administrative radio conferences.
- 1007 § 3. The specialized secretariat of the IFRB shall work under the immediate direction of the Board to enable it to discharge its prescribed duties and functions.

1001.1 ¹ The Technical Standards and the Rules of Procedure of the IFRB shall be distributed to all Members of the Union and shall be open to comment from any administration. In the event of there being a disagreement which remains unresolved, the procedure to be followed is given in Resolution 35.

Section II. Methods of Work of the Board

- 1008** § 4. The Board shall meet as frequently as necessary to deal expeditiously with its work and, normally, at least once a week.
- 1009** § 5. (1) In accordance with the Convention, the members of the Board shall elect from among their number a Chairman and a Vice-Chairman, each to hold office for a term of one year. Thereafter, the Vice-Chairman shall succeed annually to the Chairmanship and a new Vice-Chairman shall be elected.
- 1010** (2) In the unavoidable absence of the Chairman and Vice-Chairman, the Board shall elect a temporary Chairman for the occasion from among its members.
- 1011** § 6. (1) Each member of the Board, including the Chairman, shall have one vote. Voting by proxy or by correspondence is not allowed.
- 1012** (2) The minutes shall indicate whether a decision was unanimous or by a majority.
- 1013** (3) A quorum of the Board shall be one-half of the number of members of the Board. If, however, the verdict of such a quorum on a question coming before it is not unanimous, the question shall be referred for decision at a later meeting at which at least two-thirds of the total number of members of the Board are present. If these calculations result in a fraction, the fraction shall be rounded up to a whole number.
- 1014** (4) The Board shall endeavour to reach its decisions by unanimous agreement. If the Board fails in that endeavour, it shall thereafter decide the problem on the basis of a two-thirds majority vote of the members present and voting for or against.
- 1015** § 7. For its own guidance and for the efficient performance of its functions the Board may make such internal arrangements as it may consider necessary in accordance with the Convention and the Radio Regulations.

1016 § 8. The documents of the Board, which shall comprise a complete record of its official actions and minutes of its meetings, shall be maintained by the Board in the working languages of the Union as defined in the Convention; for this purpose, as well as for the meetings of the Board, the necessary linguistic personnel, and such other facilities as may be required, shall be provided by the Secretary-General. A copy of all documents of the Board shall be available for public inspection at the offices of the Board.

1017
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1040

NOT allocated.

ARTICLE 11

WARC-92

**Coordination of Frequency Assignments to
Stations in a Space Radiocommunication Service Except
Stations in the Broadcasting-Satellite Service and to
Appropriate Terrestrial Stations^{1, 2, 3, 5}**

**Section I. Procedures for the Advance Publication
of Information on Planned Satellite Networks⁴**

A.11.1
Orb-88

¹ For the coordination of frequency assignments to stations in the broadcasting-satellite service and other services in the frequency bands 11.7 - 12.2 GHz (in Region 3), 11.7 - 12.5 GHz (in Region 1) and 12.2 - 12.7 GHz (in Region 2) as well as the coordination of frequency assignments to feeder-link stations utilizing the fixed-satellite service (Earth-to-space) in the frequency band 17.3 - 17.8 GHz (in Region 2) and in the frequency bands 14.5 - 14.8 GHz and 17.3 - 18.1 GHz in Regions 1 and 3 and the other services in these bands, see also Article 15 and Article 15A respectively.

A.11.2
Orb-88

² These procedures may be applicable for earth stations of the earth exploration-satellite service, space research service, space operation service and radiodetermination-satellite service intended to be used while in motion or during halts at unspecified points.

A.11.3
Orb-88

³ For the application of the provisions of this Article with respect to stations in a space radiocommunication service using frequency bands covered by the fixed-satellite service Allotment Plan, see also Appendix 30B and Resolution 107 (Orb-88).

A.11.4
Orb-88

⁴ These procedures may be applicable to stations on board satellite launching vehicles.

A.11.5
WARC-92

⁵ See Resolution 46 (WARC-92).

1041 *Publication of Information*

1042 § 1. (1) An administration (or one acting on behalf of a group
Orb-88 of named administrations) which intends to bring into use a satellite network within a satellite system¹ shall, prior to the coordination procedure described in No. 1060 where applicable, send to the International Frequency Registration Board, not earlier than six years² and preferably not later than two years before the date of bringing into service of each satellite network, the information listed in Appendix 4.

1043 (2) Amendments to the information sent in accordance with
Orb-88 the provisions of No. 1042 shall also be sent to the Board as soon as they become available. Modifications which are of such a nature as to significantly change the character of the network may require recommencing the advance publication procedure.

1044 (3) If the information is found to be incomplete, the Board
Orb-88 shall immediately seek from the administration concerned any clarification and information not provided.

On receipt of the complete information sent under Nos. 1042 and 1043, the Board shall publish it in a special section of its weekly circular within three months and shall also, when the weekly circular contains such information, so advise all administrations by circular telegram. The circular telegram shall indicate the frequency bands to be used and, in the case of a geostationary satellite, the orbital location of the space station. When the Board is not in a position to comply with the time limit referred to above, it shall periodically so inform the administrations, giving the reasons therefor.

1042.1 ¹ For the use of frequency bands which are not covered by the
Orb-88 fixed-satellite service Allotment Plan. See also Resolution 108 (Orb-88).

1042.2 ² See also No. 1550.
Orb-88

1045 SUP
Orb-88

1046 *Comments on Published Information*

1047 § 2. If, after studying the information published under
Orb-88 No. 1044, any administration is of the opinion that interference which may be unacceptable may be caused to assignments of its existing or planned satellite networks, it shall, within four months after the date of the weekly circular containing the complete information listed in Appendix 4, send the administration concerned its comments on the particulars of the interference to its existing or planned satellite systems. A copy of these comments shall also be sent to the Board. If no such comments are received from an administration within the period mentioned above, it may be assumed that the administration has no basic objections to the planned satellite network(s) of that system on which details have been published.

1047A An administration sending information under No. 1042
Orb-88 and No. 1043 may request the assistance of the Board in determining, with the aid of Appendix 29, if its planned network could affect or be affected by other satellite networks for which complete Appendix 4 information has been received by the Board.

1047B An administration receiving information published
Orb-88 under No. 1044 may request the assistance of the Board in identifying with the aid of Appendix 29, whether its existing or planned networks for which complete Appendix 4 information has been sent to the Board could affect or be affected by the planned network.

1048 *Resolution of Difficulties*

1049 § 3. (1) An administration receiving comments sent in accord-
Orb-88 ance with No. 1047 and administrations sending such comments shall endeavour to resolve any difficulties that may arise and shall provide any additional information that may be available.

1050 (2) In case of difficulties arising when any planned satellite network of a system is intended to use the geostationary-satellite orbit:

1051
Orb-88 a) the administration responsible for the planned network shall first explore all possible means of meeting its requirements, taking into account the characteristics of the geostationary-satellite networks of other systems, and without considering the possibility of adjustment to networks of other administrations. If no such means can be found, the administration concerned may then request other administrations, either bilaterally or multilaterally, or in exceptional circumstances through the convening of multilateral meetings similar to that provided for in No. 1085C, to mutually help resolve these difficulties.

1052 b) an administration receiving a request under No. 1051 shall, in consultation with the requesting administration, explore all possible means of meeting the requirements of the requesting administration, for example, by relocating one or more of its own geostationary space stations involved, or by changing the emissions, frequency usage (including changes in frequency bands) or other technical or operational characteristics;

1053
Orb-88 c) if, after following the procedure described in Nos. 1051 and 1052, there are unresolved difficulties, the administrations concerned shall together make every possible effort to resolve these difficulties by means of mutually acceptable adjustments, for example, to geostationary space station locations and to other characteristics of the networks involved in order to provide for the normal operation of both the planned and existing networks.

1054 (3) In their attempts to resolve the difficulties mentioned
Orb-88 above, administrations may seek the Board's assistance which may consist of:

1054A a) evaluating the levels of interference;
Orb-88

1054B b) defining, with the agreement of the administrations
Orb-88 concerned, the method and criteria to be used;

1054C c) making arrangements to facilitate discussions as
Orb-88 mutually agreed by the administrations concerned.

1054D In seeking the assistance of the Board, the administra-
Orb-88 tion(s) concerned shall send the details of the comments which have given rise to the difficulties and make any suggestions that it (they) may consider useful.

1055 *Results of Advance Publication*

1056 § 4. An administration on behalf of which details of planned
Orb-88 satellite networks have been published in accordance with the provisions of Nos. 1042 to 1044 shall, after the period of four months specified in No. 1047, inform the Board whether or not comments provided for in No. 1047 have been received and of the progress made in resolving any difficulties. Additional information on the progress made in resolving any remaining difficulties shall be sent to the Board at intervals not exceeding six months prior to the commencement of coordination or the sending of the notices to the Board. The Board shall publish this information in the special section of its weekly circular referred to in No. 1044 and shall also, when the weekly circular contains such information, so inform all administrations by circular telegram.

1056A When, upon expiry of a period of six years plus the
Orb-88 extension provided for in No. 1550 after the date of the publica-
tion of the special section referred to in No. 1044, the administra-
tion responsible for the network has not submitted the Appendix 3
information for coordination under No. 1060 or for notification
under No. 1488, as appropriate, the information published under
No. 1044 shall be cancelled after the administration concerned had
been informed.

1057 *Commencement of Coordination or Notification Procedures*

1058 SUP
Orb-88

1058A § 5 (1) When communicating to the Board the information
Orb-88 referred to in No. 1042, an administration may, at the same time or
at a later time, communicate:

1058B a) the information required for the network coordina-
Orb-88 tion of a frequency assignment to a station per-
taining to a geostationary-satellite network in
accordance with the provisions of No. 1074,
including the copy of the request for coordination
sent to any other administration; this information
will be treated in accordance with the provisions of
Section II of this Article; *or*

1058C b) the information required for notification of a fre-
Orb-88 quency assignment to a station of a geostationary-
satellite network when coordination for that assign-
ment is not required; *or*

1058D c) the information required for notification of a fre-
Orb-88 quency assignment to a station of a non-geosta-
tionary-satellite network.

1058E The coordination or notification information, as the
Orb-88 case may be, shall be considered as having been received by the
Board not earlier than six months after the date of receipt of the
information referred to in No. 1042.

Orb-88

**Section II. Coordination of Frequency Assignments
to a Space Station on a Geostationary Satellite or an
Earth Station Communicating with Such a Space Station
using Frequency Bands other than Those Covered by the
Fixed-Satellite Service Allotment Plan in Relation to
Stations of Other Geostationary-Satellite Networks ***

1059 *Requirement for Coordination*

1060 § 6. (1) Before an administration (or one acting on behalf of
Orb-88 one or more named administrations) notifies to the Board or brings
into use any frequency assignment to a space station on a
geostationary satellite or to an earth station that is to communicate
with a space station on a geostationary satellite, it shall, except in
the cases described in Nos. **1066** to **1071**, effect coordination of the
assignment with any other administration whose assignment, for a
space station on a geostationary satellite or for an earth station
that communicates with a space station on a geostationary satellite,
might be affected.¹

1060A Coordination under No. **1060** may be effected for a
Orb-88 satellite network using the information relating to the space station,
including its service area, and the parameters of one or more
typical earth stations which may be located in all or part of the
space station service area.

1060.1 ¹ In cases where the application of Article **14** is required with
Orb-88 respect to one or more assignments of a network, the agreement obtained in
application of Article **14** in relation to an assignment of another satellite
network to which Nos. **1061** to **1065** apply shall be deemed to constitute
successful application of the procedure of Section II of this Article.

* See also Section IB of Article 6 of Appendix **30B**.

1060B If a frequency assignment is brought into use before the
Orb-88 commencement of the coordination procedure of No. **1060**, when this coordination is required, the operation in advance of the receipt by the Board of the Appendix 3 information shall in no way afford any priority of the date.

1061 (2) Frequency assignments to be taken into account in the
Orb-88 application of No. **1060** are those in the same frequency band as the planned assignment, pertaining to the same service or to another service to which the band is allocated with equal rights or a higher category of allocation (see Nos. **420-425** and **435**), and which are:

1062 a) in conformity with No. **1503**; *and*
Orb-88

1063 b) either recorded in the Master Register, or coordinated under the provisions of this Section; *or*

1064 c) included in the coordination procedure with effect
Orb-88 from the date of receipt¹ by the Board, in accordance with No. **1074**, of the relevant information as specified in Appendix 3; *or*

1065 d) already notified to the Board without any coordination
Orb-88 in those cases where Nos. **1066** to **1071** apply.

1066 (3) No coordination under No. **1060** is required:

1066A a) when an administration proposes to notify or bring
Orb-88 into use, within the service area of a satellite network, a typical earth station or an earth station which would not cause or suffer interference of a level greater than the typical earth station;

1064.1 ¹ See No. **1058E** concerning the date to be considered as the date of
Orb-88 receipt by the Board of the information relating to the coordination of a satellite network or a notification of a frequency assignment.

- 1067**
Orb-88 *b)* when the use of a new frequency assignment will cause, to any service of another administration, an increase in the noise temperature of any space station receiver or earth station receiver, or an increase in the equivalent satellite link noise temperature, as appropriate, calculated in accordance with the method given in Appendix 29, which does not exceed the threshold value defined therein;
- 1068**
Orb-88 *c)* when the interference resulting from a modification to a frequency assignment which has previously been coordinated will not exceed that value agreed during coordination;
- 1069**
Orb-88 *d)* when an administration proposes to notify or bring into use a new earth station which would not cause or suffer interference of a level greater than that which would be caused by an earth station belonging to the same satellite network and whose characteristics have been published in accordance with No. 1078, or notified to the Board without coordination in those cases where coordination was not required;
- 1070**
Orb-88 *e)* when, for a new frequency assignment to a receiving station, the notifying administration states that it accepts the interference resulting from the frequency assignments referred to in Nos. 1061 to 1065.
- 1071**
Orb-88 *f)* between earth stations using frequency assignments in the same direction (either Earth-to-space or space-to-Earth).

1072 *Coordination Data*

- 1073**
Orb-88 § 7. (1) For the purpose of effecting coordination, the administration requesting coordination shall send to any other administration concerned under No. 1060 all the information listed in Appendix 3 required for coordination including the characteristics

of one or more typical earth stations and the respective areas in which they may be located. The request concerning coordination of a network may specify all or some of the frequency assignments expected to be used by the stations of the satellite network.

1074 (2) The administration requesting coordination shall at the
Orb-88 same time send to the Board a copy of the request for coordination, with all the information listed in Appendix 3 required for coordination and the name(s) of the administration(s) with which coordination is sought. The Board shall immediately acknowledge the receipt of this information.

1074A (3) An administration believing that the provisions of
Orb-88 Nos. 1066 to 1071 apply to its planned assignments may send to the Board the relevant information listed in Appendix 3, either under No. 1074 for publication or in accordance with Nos. 1488 to 1491.

1075 § 8. (1) On the receipt of the complete information referred to
Orb-88 in No. 1074, the Board shall:

1076 a) immediately examine this information with respect
Orb-88 to its conformity with No. 1503 and, as soon as possible, send a telegram to all administrations indicating the identity of the satellite network, its findings with respect to No. 1503 and the date of receipt¹ of the information; this date shall be considered as the date from which the assignment will be taken into account for coordination;

1077 b) examine the information received with a view to
 identifying those administrations whose services might be affected, in accordance with No. 1060, and inform the administrations concerned by telegram;

1076.1 ¹ See No. 1058E concerning the date to be considered as the date of
Orb-88 receipt by the Board of the information relating to the coordination of a satellite network or a notification of a frequency assignment.

1078
Orb-88 c) publish in the special section of its weekly circular referred to in No. **1044**, within three months, the information received under No. **1074** and the result of the examination under Nos. **1076** and **1077**. When the weekly circular contains such information, the Board shall so inform all administrations by circular telegram. When the Board is not in a position to comply with the time limit referred to above, it shall periodically so inform the administrations giving the reasons therefor.

1078A
Orb-88 (2) If the information is found to be incomplete, the Board shall immediately seek from the administration concerned any clarification and information not provided.

1079 *Requests for Inclusion in the Coordination Procedure*

1080 § 9. An administration believing that it should have been included in the coordination procedure under No. **1060** shall have the right to request that it be brought into the coordination procedure. Such a request shall be sent to the administration initiating the coordination procedure, with a copy to the Board, as soon as possible.

1081 *Acknowledgement of Receipt of Coordination Data*

1082 § 10. An administration with which coordination is sought under No. **1060** shall acknowledge receipt of the coordination data immediately by telegram. If no acknowledgement is received within thirty days after the date of the weekly circular publishing the information under No. **1078**, the administration seeking coordination shall dispatch a telegram requesting acknowledgement, to which the receiving administration shall reply within a further period of fifteen days.

1083 *Examination of Coordination Data and Agreement Between Administrations*

1084 § 11. (1) On receipt of the coordination data, an administration
Orb-88 shall promptly examine the matter with regard to interference¹ which would be caused to the frequency assignments of its network in respect of which coordination is sought under No. 1060 or caused by these assignments. In so doing, it shall have regard to the proposed date of bringing into use of the assignment for which coordination was requested. It shall then, within four months from the date of the relevant weekly circular, notify the administration requesting coordination of its agreement. If, however, the administration with which coordination is sought does not agree, it shall, within the same period, send to the administration seeking coordination the technical details upon which its disagreement is based, including those relevant characteristics contained in Appendix 3 which have not previously been notified to the Board, and make such suggestions as it is able to offer with a view to a satisfactory solution of the problem. A copy of these comments shall also be sent to the Board.

1085 (2) Either the administration seeking coordination or an
Orb-88 administration with which coordination is sought may request additional information which it may require to assess the interference to assignments of the network concerned.

1084.1 ¹ In the absence of specific provisions relating to the evaluation of
Orb-88 the interference, the calculation methods and the criteria should be based on relevant CCIR Recommendations agreed by the administrations concerned either as a result of Resolution 703 or otherwise. In the event of disagreement on a CCIR Recommendation or in the absence of such Recommendations, the methods and criteria shall be agreed between the administrations concerned. Such agreements shall be concluded without prejudice to other administrations.

1085A (3) Affected administrations as well as the administration
Orb-88 seeking coordination shall make all possible mutual efforts to overcome the difficulties, in a manner acceptable to the parties concerned.

1085B (4) All administrations may use correspondence, any
Orb-88 appropriate means of telecommunication, or bilateral or multilateral meetings, as necessary, to effect coordination with any other administration. The results thereof shall be communicated to the Board in accordance with No. 1087.

1085C (5) In exceptional cases the multilateral coordination
Orb-88 among the administrations concerned, of networks in the fixed-satellite service, may take the form of a Multilateral Planning Meeting (MPM) in accordance with *resolves* 1 to 7 of Resolution 110 (**Orb-88**) and shall apply to the following frequency bands:

3 700 - 4 200 MHz
 5 850 - 6 425 MHz
 10.95 - 11.20 GHz
 11.45 - 11.70 GHz
 11.70 - 12.20 GHz in Region 2 ¹
 12.50 - 12.75 GHz in Region 1 and Region 3 ^{1, 2}
 14.00 - 14.50 GHz

1085D (6) Towards this end, the administration seeking coordina-
Orb-88 tion may initiate action to convene a Multilateral Planning Meeting (MPM) to resolve mutually the difficulties and effect the coordination of the satellite network.

1085C.1 ¹ In these bands this provision shall apply between networks of the
Orb-88 fixed-satellite service only.

1085C.2 ² When a fixed-satellite service network is to be operated in the
Orb-88 frequency band 12.5 - 12.75 GHz as well as under No. 845 in the frequency band 12.2 - 12.5 GHz, this provision may apply for coordination of the network.

1086 *Results of Coordination*

1087 § 12. (1) An administration which has initiated a coordination
Orb-88 procedure under the provisions of Nos. **1060** to **1074** shall communicate to the Board, on expiry of the period of four months following the date of the relevant weekly circular mentioned in No. **1078**, the names of the administrations with which an agreement has been reached. It shall also inform the Board of the progress made in effecting coordination with the other administrations or of any difficulties. Such a communication shall be made to the Board every six months after the above-mentioned period. The Board shall publish this information in the special section of its weekly circular referred to in No. **1044**.

1087A (2) An administration which initiated the coordination, as
Orb-88 well as any administration with which coordination is sought, shall communicate to the Board any modifications to the published characteristics of their respective networks that were required to reach agreement on the coordination. The Board shall publish this information in accordance with No. **1078**, indicating that these modifications resulted from the joint effort of the administrations concerned to reach agreement on coordination and for this reason they should be given special consideration.

1087B (3) When the coordination process takes the form of a
Orb-88 Multilateral Planning Meeting (MPM), in accordance with *resolves* 1 to 7 of Resolution **110 (Orb-88)**, the administration which sought the coordination of its satellite network shall communicate to the Board the names of administrations with which coordination has been completed and an agreement reached, as well as the names of administrations with which coordination has not been completed.

1087C (4) Each administration participating in a Multilateral Plan-
Orb-88 ning Meeting (MPM) shall communicate to the Board any changes
 agreed upon in the published characteristics of frequency assign-
 ments of its satellite networks considered by the Multilateral
 Planning Meeting (MPM).

1087D (5) The Board shall publish the information specified
Orb-88 in Nos. **1087B** and **1087C** above in the special section of its weekly
 circular referred to in No. **1044** and shall also, when the weekly
 circular contains such information, so inform all administrations
 by circular telegram.

1088 *Requests to the IFRB for Assistance in Effecting Coordination*

1089 § 13. (1) An administration seeking coordination may request the
 Board to endeavour to effect coordination in those cases where:

1090 a) an administration with which coordination is
 sought under No. **1060** fails to acknowledge receipt,
 under No. **1082**, within forty-five days after the
 date of the weekly circular publishing the informa-
 tion relating to the request for coordination;

1091 b) an administration has acknowledged receipt under
 No. **1082**, but fails to give a decision within four
 months from the date of the relevant weekly cir-
 cular;

1091A c) a bilateral or multilateral meeting, or a Multilateral
Orb-88 Planning Meeting (MPM) is required to achieve
 coordination and the administration concerned
 experiences difficulties in making arrangements for
 it;

1092 d) there is disagreement between the administration
Orb-88 seeking coordination and an administration with
 which coordination is sought as to the acceptable
 interference; *or*

1093 e) coordination is not possible for any other reason.
Orb-88

1094 (2) In so doing, the administration shall provide the neces-
Orb-88 sary information to enable the Board to endeavour to effect such coordination.

1095 *Action to Be Taken by the IFRB*

1096 § 14. (1) Where the Board receives a request under No. **1090**, it shall forthwith send a telegram to the administration concerned requesting immediate acknowledgement.

1097 (2) Where the Board receives an acknowledgement following its action under No. **1096**, or where the Board receives a request under No. **1091**, it shall forthwith send a telegram to the administration concerned requesting an early decision in the matter.

1098 (3) Where the Board receives a request under No. **1093**, it shall endeavour to effect coordination in accordance with the provisions of No. **1060**. The Board shall also act in accordance with Nos. **1075** to **1078**. Where the Board receives no acknowledgement to its request for coordination within the periods specified in No. **1082** it shall act in accordance with No. **1096**.

1098A (4) Where the Board receives a request under No. **1091A**, it
Orb-88 shall take appropriate steps to facilitate the holding of such meetings when all administrations concerned agree and shall also provide requested assistance that may help in achieving coordination.

1099 (5) Where necessary, as part of the procedure under
Orb-88 Nos. **1089** to **1094**, the Board shall assess the interference. In any case, the Board shall inform the administrations concerned of the results obtained.

1100 (6) The Board may request additional information which it
Orb-88 may require to assess the interference to assignments of the network concerned.

1101 (7) Where an administration fails to reply within thirty days
Orb-88 of dispatch of the Board's telegram requesting acknowledgement sent under No. **1096**, or fails to give a decision in the matter within thirty days of dispatch of the Board's telegram of request under No. **1097**, or fails to reply to the Board's requests made in application of No. **1098A**, it shall be deemed that the administration with which coordination was sought has undertaken:

1102 a) that no complaint will be made in respect of any
Orb-88 harmful interference affecting the services rendered by its space radiocommunication stations which may be caused by the use of the assignment to a station of the satellite network for which coordination was requested;

1103 b) that its space radiocommunication stations will not
Orb-88 cause harmful interference to the satellite network assignment for which coordination was requested.

1104 and 1105 SUP
Orb-88

**Orb-88 Section III. Coordination of Frequency Assignments
to an Earth Station Operating in a Geostationary
or Non-Geostationary Satellite Network in
Relation to Terrestrial Stations**

1106 *Requirement for Coordination*

1107 § 16. (1) Before an administration notifies to the Board or brings
Mob-87 **into use any frequency assignment to an earth station², whether**
for transmitting or receiving, in a particular band allocated with
equal rights to space and terrestrial radiocommunication services in
the frequency spectrum above 1 GHz, it shall, except in the cases
described in Nos. 1108 to 1111, effect coordination of the assign-
ment with each administration whose territory lies wholly or partly
within the coordination area¹ of the planned earth station. The
request for coordination concerning an earth station may specify
all or some of the frequency assignments of the associated space
station, but thereafter each assignment shall be dealt with individu-
ally.

1107.1 ¹ Appendix 28, which shall be used for the calculation of the
coordination area, contains criteria relating only to coordination between
earth stations and stations in the fixed or mobile services. The criteria
relating to other terrestrial radiocommunication services should be based
on relevant CCIR Recommendations agreed by the administrations con-
cerned either as a result of Resolution 703 or otherwise.

In the event of disagreement on a CCIR Recommendation or
in the absence of such Recommendations, the methods and criteria shall be
agreed between the administrations concerned. Such agreements shall be
concluded without prejudice to other administrations.

1107.2 ² For the application of this procedure to earth stations in the
Mob-87 **radiodetermination-satellite service Appendix 28, paragraph 7 shall be**
applied using a uniform coordination distance in the bands 1 610 - 1 626.5
MHz, 2 483.5 - 2 500 MHz and 2 500 - 2 516.5 MHz of 400 km, corre-
sponding to an airborne radiodetermination satellite service (RDSS) earth
station. In cases where the RDSS system is limited to ground based earth
stations, the IFRB shall use a coordination distance of 100 km.

- 1108** (2) No coordination under No. 1107 is required when an administration proposes:
- 1109** a) to bring into use an earth station the coordination area of which does not include any of the territory of any other country;
- 1110** b) to change the characteristics of an existing assignment in such a way as not to increase the interference to or from the terrestrial radiocommunication stations of other administrations;
- 1111** c) to operate a mobile earth station. However, if the coordination area associated with the operation of such a mobile earth station, in a frequency band referred to in No. 1107, includes any of the territory of another country, the operation of such a station shall be subject to agreement on coordination between the administrations concerned. This agreement shall apply to the characteristics of the mobile earth station(s), or to the characteristics of a typical mobile earth station, and shall apply to a specified service area. Unless otherwise stipulated in the agreement, it shall apply to any mobile earth stations in the specified service area provided that interference caused by them shall not be greater than that caused by a typical earth station for which the technical characteristics appear in the notice and have been or are being submitted in accordance with No. 1494.
- 1111A**
Orb-88 d) to bring into use a new frequency assignment to a receiving earth station and the notifying administration states that it accepts the interference resulting from existing and future terrestrial station assignments. In such case, administrations responsible for the terrestrial stations are not required to apply the provisions of Section IV of this Article.

1112 *Coordination Data*

- 1113** § 17. For the purpose of effecting coordination, the administration requesting coordination shall send to each administration concerned under No. 1107 a copy of diagrams drawn to an appropriate scale indicating for both transmission and reception the location of the earth station and its associate coordination areas, or the coordination area related to the service area in which it is intended to operate the mobile earth station, and the data on which the diagrams are based, including all pertinent information concerning the proposed frequency assignment as listed in Appendix 3, and an indication of the approximate date on which it is planned to begin operations. A copy of this information with the date of dispatch of the request for coordination shall also be sent for the information of the Board.

1114 *Acknowledgement of Receipt of Coordination Data*

- 1115** § 18. An administration with which coordination is sought under No. 1107 shall acknowledge receipt of the coordination data immediately by telegram. If no acknowledgement is received within thirty days of dispatch of the coordination data, the administration seeking coordination shall dispatch a telegram requesting acknowledgement, to which the receiving administration shall reply within a further period of fifteen days.

1116 *Examination of Coordination Data and Agreement Between Administrations*

- 1117** § 19. (1) On receipt of the coordination data an administration shall, having regard to the proposed date of bringing into use of the assignment for which coordination was requested, promptly examine the matter with regard to both:

- 1118 Orb-88 a) interference ¹ which would affect the service rendered by its terrestrial radiocommunication stations operating in accordance with the Convention and these Regulations, or to be so operated prior to the planned date of bringing the earth station assignment into service, or within the next three years, whichever is the longer; *and*
- 1119 b) interference ¹ which would be caused to reception at the earth station by the service rendered by its terrestrial radiocommunication stations operating in accordance with the Convention and these Regulations, or to be so operated prior to the planned date of bringing the earth station assignment into service, or within the next three years, whichever is the longer.
- 1120 (2) The periods referred to in Nos. 1118 and 1119 may be extended by agreement between the administrations concerned in order to take planned terrestrial networks into account.
- 1121 (3) The administration with which coordination is sought shall, within four months from dispatch of the coordination data:
- 1122 a) notify the administration requesting coordination of its agreement with a copy to the Board, indicating, where appropriate, the part of the allocated frequency band containing the coordinated frequency assignments; *or*

1118.1 } ¹ In the absence of specific provisions relating to the evaluation of
 1119.1 } the interference, the calculation methods and the criteria should be based
 Orb-88 on relevant CCIR Recommendations agreed by the administrations concerned either as result of Resolution 703 or otherwise. In the event of disagreement on a CCIR Recommendation or in the absence of such Recommendations, the methods and criteria shall be agreed between the administrations concerned. Such agreements shall be concluded without prejudice to other administrations.

1123 *b)* send to that administration a request for inclusion in coordination of the terrestrial radiocommunication stations mentioned in Nos. **1118** and **1119**; *or*

1124 *c)* notify that administration of its disagreement.

1125 (4) In the cases mentioned in Nos. **1123** and **1124**, the administration with which coordination is sought shall send to the administration requesting coordination a copy of a diagram drawn to an appropriate scale indicating the location of those terrestrial radiocommunication stations which are or will be within the coordination area of the earth transmitting or receiving station, as appropriate, together with all other relevant basic characteristics and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem.

1126 (5) When the administration with which coordination is sought sends to the administration seeking coordination the information required in the case of No. **1124**, a copy thereof shall also be sent to the Board. The Board shall consider as notifications in accordance with Section I of Article **12** only that information relating to existing terrestrial radiocommunication stations or to those to be brought into use within the next three months.

1127 (6) When an agreement on coordination is reached, as a consequence of Nos. **1121** to **1125**, the administration responsible for the terrestrial stations may send to the Board the information concerning those terrestrial stations covered by the agreement which are intended to be notified in accordance with Section I of Article **12**. The Board shall consider as notifications in accordance with that Section only that information relating to existing terrestrial radiocommunication stations or to those to be brought into use within the next three years.

- 1128 (7) The administration seeking coordination or an administration with which coordination is sought may request additional information which it may require to assess the interference to the services concerned.

1129 *Requests to the IFRB for Assistance in Effecting Coordination*

- 1130 § 20. (1) An administration seeking coordination may request the Board to endeavour to effect coordination in those cases where:

- 1131 a) an administration with which coordination is sought under No. 1107 fails to acknowledge receipt, under No. 1115, within forty-five days of dispatch of the coordination data;
- 1132 b) an administration has acknowledged receipt under No. 1115, but fails to give a decision within four months from dispatch of the coordination data under No. 1113;
- 1133 c) there is disagreement between the administration seeking coordination and an administration with which coordination is sought as to the acceptable interference; *or*
- 1134 d) coordination between administrations is not possible for any other reason.

- 1135 (2) In so doing, the administration shall furnish the necessary information to enable the Board to endeavour to effect such coordination.

1136 *Action to Be Taken by the IFRB*

- 1137 § 21. (1) Where the Board receives a request under No. 1131, it shall forthwith send a telegram to the administration concerned requesting immediate acknowledgement.

1138 (2) Where the Board receives an acknowledgement following its action under No. 1137, or where the Board receives a request under No. 1132, it shall forthwith send a telegram to the administration concerned requesting an early decision in the matter.

1139 (3) Where the Board receives a request under No. 1134, it shall endeavour to effect coordination in accordance with the provisions of No. 1107. Where the Board receives no acknowledgement to its request for coordination within the periods specified in No. 1115 it shall act in accordance with No. 1137.

1140 (4) Where necessary, as part of the procedure under Nos. 1130 to 1135, the Board shall assess the interference. In any case, the Board shall inform the administrations concerned of the results obtained.

1141 (5) The Board may request additional information which it may require to assess the interference to the services concerned.

1142 (6) Where an administration fails to reply within thirty days of dispatch of the Board's telegram requesting an acknowledgement sent under No. 1137, or fails to give a decision in the matter within thirty days of dispatch of the Board's telegram of request under No. 1138, it shall be deemed that the administration with which coordination was sought has undertaken:

1143 *a)* that no complaint will be made in respect of any
Orb-88 harmful interference affecting the services rendered by its terrestrial stations which may be caused by the use of the assignment for which coordination was requested;

1144 *b)* that its terrestrial stations will not cause harmful
Orb-88 interference to the frequency assignment for which coordination was requested.

1145 and 1146 SUP
Orb-88

**Section IV. Coordination of Frequency Assignments to a Terrestrial Station
for Transmission in Relation to an Earth Station**

1147 *Requirement for Coordination*

1148 § 23. (1) Before an administration notifies to the Board, or brings into use any frequency assignment to a terrestrial station within the coordination area¹ of an earth station, in a band above 1 GHz allocated with equal rights to terrestrial radiocommunication services and space radiocommunication services (space-to-Earth), excepting the broadcasting-satellite service, it shall, except in cases described in Nos. **1155** to **1158**, effect coordination of the proposed assignment with the administration responsible for the earth station with respect of the frequency assignments which are:

- 1149 a)** in conformity with No. **1503**; *and*
- 1150 b)** either coordinated under No. **1107**; *or*
- 1151 c)** to be taken into account for coordination with effect from the date of communication of the information referred to in No. **1107**; *or*
- 1152 d)** recorded in the Master Register with a favourable finding with respect to No. **1505**; *or*
- 1153 e)** recorded in the Master Register with an unfavourable finding with respect to No. **1505** and a favourable finding with respect to No. **1509**; *or*

1148.1 ¹ Appendix 28, which shall be used for the calculation of the coordination area, contains criteria relating only to coordination between earth stations and stations in the fixed or mobile services. The criteria relating to other terrestrial radiocommunication services should be based on relevant CCIR Recommendations agreed by the administrations concerned either as a result of Resolution **703** or otherwise.

In the event of disagreement on a CCIR Recommendation or in the absence of such Recommendations, the methods and criteria shall be agreed between the administrations concerned. Such agreements shall be conducted without prejudice to other administrations.

1154 *f)* recorded in the Master Register with an unfavourable finding with respect to Nos. **1505** and **1509**, the notifying administration having stated that it has accepted the interference resulting from the existing terrestrial stations located within the coordination area of the earth station on the date of its recording.

1155 (2) No coordination under Nos. **1148** to **1154** is required when an administration proposes:

1156 *a)* to bring into use a terrestrial station which is located, in relation to an earth station, outside the coordination area;

1157 *b)* to change the characteristics of an existing assignment in such a way as not to increase the interference to the earth stations of other administrations;

1158 *c)* to bring into use a terrestrial station within the coordination area of an earth station, provided that the proposed terrestrial station assignment is outside any part of a frequency band coordinated under No. **1122** for reception by that earth station.

1159 *Coordination Data*

1160 § 24. For the purpose of effecting coordination, the administration requesting coordination shall send to any other administration concerned under Nos. **1148** to **1154**, by the fastest possible means, a copy of a diagram drawn to an appropriate scale indicating the location of the terrestrial station and all other pertinent details of the proposed frequency assignment, and the approximate date on which it is planned to bring the station into use. The request for coordination may specify all or some of the frequency assignments expected to be used within the next three years by stations of a terrestrial network wholly or partly within the coordination area of the earth station. This period may be extended by agreement between the administrations concerned. Thereafter each assignment shall be dealt with individually.

1161 *Acknowledgement of Receipt of Coordination Data*

1162 § 25. An administration with which coordination is sought under Nos. 1148 to 1154 shall acknowledge receipt of the coordination data immediately by telegram. If no acknowledgement is received within thirty days of dispatch, the administration seeking coordination may dispatch a telegram requesting acknowledgement of receipt of the coordination data, to which the receiving administration shall reply within a further period of fifteen days.

1163 *Examination of Coordination Data and Agreement Between Administrations*

1164 § 26. (1) On receipt of the coordination data, the administration
Orb-88 with which coordination is sought shall promptly examine the matter with regard to interference¹ which would affect the services rendered by its earth stations covered by Nos. 1148 to 1154, which are operating, or are to be operated, within the next three years.

1165 (2) In so doing, the administration may take into account any frequency assignment communicated to it for use more than three years in advance.

1166 (3) The administration with which coordination is sought
Orb-88 shall, within an overall period of four months² from dispatch of the coordination data, either notify the administration requesting coordination of its agreement to the proposed assignment or, if this is not possible, indicate the reasons for its objection and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem.

1164.1 ¹ The calculation methods and the criteria to be employed in evaluating the interference should be based on relevant CCIR Recommendations agreed by the administrations concerned either as a result of Resolution 703 or otherwise. In the event of disagreement on a CCIR Recommendation or in the absence of such Recommendations, the methods and criteria shall be agreed between the administrations concerned. Such agreements shall be concluded without prejudice to other administrations.

1166.1 ² This period may be extended with the agreement of the administration which requested the coordination.

1167 § 27. Either the administration seeking coordination or the
Orb-88 administration with which coordination is sought may request additional information which it may require to assess the interference to assignments of the network concerned.

1168 *Requests to the IFRB for Assistance in Effecting Coordination*

1169 § 28. (1) An administration seeking coordination may request the Board to endeavour to effect coordination in those cases where:

1170 a) an administration with which coordination is sought under Nos. **1148** to **1154** fails to acknowledge receipt under No. **1162** within thirty days of dispatch of the coordination data;

1171 b) an administration has acknowledged receipt under No. **1162** but fails to give a decision within four months of dispatch of the coordination data;

1172 c) there is disagreement between the administration seeking coordination and an administration with which coordination is sought as to the acceptable interference; *or*

1173 d) coordination between administrations is not possible for any other reason.

1174 (2) In so doing, the administration shall furnish the necessary information to enable the Board to endeavour to effect such coordination.

1175 *Action to Be Taken by the IFRB*

1176 § 29. (1) Where the Board receives a request under No. **1170**, it shall forthwith send a telegram to the administration concerned requesting immediate acknowledgement.

- 1177 (2) Where the Board receives an acknowledgement following its action under No. 1176, or where the Board receives a request under No. 1171, it shall forthwith send a telegram to the administration concerned requesting an early decision in the matter.
- 1178 (3) Where the Board receives a request under No. 1173, it shall endeavour to effect coordination in accordance with the provisions of Nos. 1148 to 1154. Where the Board receives no acknowledgement of its request for coordination within the period specified in No. 1162, it shall act in accordance with No. 1176.
- 1179 (4) Where necessary, as part of the procedure under Nos. 1169 to 1174, the Board shall assess the interference. In any case, the Board shall inform the administrations concerned of the results obtained.
- 1180 (5) The Board may request additional information which it may require to assess the interference to the services concerned.
- 1181 (6) Where an administration fails to reply within thirty days of dispatch of the Board's telegram sent under No. 1176 requesting an acknowledgement, or fails to give a decision in the matter within two months of dispatch of the Board's telegram of request sent under No. 1177, it shall be deemed that the administration with which coordination was sought has undertaken that no complaint will be made in respect of any harmful interference which may be caused by the terrestrial station being coordinated to the service rendered by its earth station.
- 1182 *Notification of Frequency Assignments in the Event of Continuing Disagreement*
- 1183 § 30. In the event of continuing disagreement between an administration seeking to effect coordination and one with which coordination has been sought, the administration seeking coordination shall, except in the cases where the assistance of the Board has been requested, defer the submission of its notice concerning the proposed assignment by six months from the date of the request for coordination, taking into consideration the provisions of Nos. 1230 and 1496.

Section V. Special Assistance by the IFRB

1184 § 31. (1) If it is requested by an administration, particularly by an administration of a country in need of special assistance, the Board, using such means at its disposal as are appropriate in the circumstances, shall render the following assistance:

1185 a) computation of the increases in noise temperatures in accordance with No. 1066;

1186 b) preparation of diagrams showing the coordination areas as in No. 1113;

1187 c) any other assistance of a technical nature for completion of the procedures in this Article.

1188 (2) In making a request to the Board under Nos. 1184 to 1187, the administration shall furnish the Board with the necessary information.

1189 § 32. If requested by an administration participating in a
Orb-88 Multilateral Planning Meeting (MPM), the Board, using such means at its disposal as are appropriate in the circumstances, shall render technical assistance for the completion of the procedures of Section II of this Article. In making such a request this administration shall furnish the Board with all necessary information.

1190
to NOT allocated.
1213

ARTICLE 12

WARC-92 **Notification and Recording in the Master International
Frequency Register of Frequency Assignments¹ to
Terrestrial Radiocommunication Stations^{2, 3, 4, 5}**

- A.12.1** ¹ The expression *frequency assignment*, wherever it appears in this Article, shall be understood to refer either to a new frequency assignment or to a change in an assignment already recorded in the Master International Frequency Register (hereinafter called the *Master Register*).
- A.12.2** ² For the notification and recording in the Master International Frequency Register of frequency assignments to radio astronomy and space radiocommunication stations, see Article 13.
- A.12.3** ³ For the notification and recording of frequency assignments to
Orb-85 terrestrial stations in the frequency bands 11.7 - 12.2 GHz (in Region 3), 12.2 - 12.7 GHz (in Region 2) and 11.7 - 12.5 GHz (in Region 1), so far as their relationship to the broadcasting-satellite service in these bands is concerned, see also Article 15.
- A.12.4** ⁴ For the notification and recording of frequency assignments to
Orb-88 terrestrial stations in the frequency bands 14.5 - 14.8 GHz (in Regions 1 and 3), 17.7 - 17.8 GHz (in Region 2), and 17.7 - 18.1 GHz (in Regions 1 and 3), so far as their relationship to the fixed-satellite service (Earth-to-space) in this band is concerned, see also Article 15A.
- A.12.5** ⁵ See Resolution 46 (WARC-92).
WARC-92

Section I. Notification of Frequency Assignments

- 1214** § 1. (1) Any frequency assignment¹ to a fixed, land, broadcasting², radionavigation land, radiolocation land or a standard frequency and time signal station, or to a ground-based station in the meteorological aids service, shall be notified to the International Frequency Registration Board:
- 1214.1** ¹ In the case where a frequency is used by numerous stations under the jurisdiction of the same administration, see Appendix 1 (Section F, II, Column 5a, paragraphs 3 and 4).
- 1214.2** ² With respect to assignments to broadcasting stations in the bands allocated exclusively to the broadcasting service between 5950 kHz and 26 100 kHz, see Article 17.
- 1215** a) if the use of the frequency concerned is capable of causing harmful interference to any service of another administration³; *or*
- 1215.1** ³ The attention of administrations is specifically drawn to the application of the provisions of Nos. **1215** and **1217** in those cases where they make a frequency assignment to a terrestrial station, located within the coordination area of an earth station (see Nos. **1148** to **1154**), in a band which terrestrial radiocommunication services share with equal rights with space radiocommunication services in the frequency spectrum above 1 GHz.
- 1216** b) if the frequency is to be used for international radiocommunication; *or*
- 1217** c) if it is desired to obtain international recognition of the use of the frequency⁴.
- 1217.1** ⁴ The attention of administrations is specifically drawn to the application of the provisions of Nos. **1215** and **1217** in those cases where they make a frequency assignment to a terrestrial station, located within the coordination area of an earth station (see Nos. **1148** to **1154**), in a band which terrestrial radiocommunication services share with equal rights with space radiocommunication services in the frequency spectrum above 1 GHz.

1218 (2) Similar notice¹ shall be given when an administration desires to request the assistance of the Board in selecting a frequency assignment to a station of the fixed service in any of the bands allocated exclusively, or on a shared basis, to that service between 3 000 kHz and 27 500 kHz, or when an administration wishes to use for the same type of station a predetermined frequency assignment; in the latter case, the administration shall indicate the reasons on which the request is based together with the possible modifications which could be made to the characteristics of its assignment, and the Board will take account of this information when searching for a satisfactory solution. For this purpose an individual notice shall be drawn up as specified in Section D of Appendix 1. It is recommended that the notifying administration should provide the additional information called for in that Appendix, together with such further information as it may consider appropriate. The procedure to be followed is given in Nos. **1275** to **1304**.

1218.1 ¹ See Resolution **103**.

1219 (3) Similar notice shall be given for any frequency to be used for the reception of mobile stations by a particular land station in each case where one or more of the conditions specified in Nos. **1214** to **1217** are applicable.

1220 (4) Specific frequencies listed in the Preface to the International Frequency List which are prescribed by these Regulations for common use by stations of a given service (for example, international distress frequencies 500 kHz and 2 182 kHz, frequencies of ship radiotelegraph stations operating in their exclusive high frequency bands, etc.), shall not be notified to the Board.

1221 § 2. (1) For any notification under Nos. **1214** to **1217** or **1219** an individual notice for each frequency assignment shall be drawn up as prescribed in Sections A or B of Appendix 1, which specify the basic characteristics to be furnished, according to the case. It is

recommended that the notifying administration should also supply the additional information called for in that Appendix, together with such further information as it may consider appropriate.

1222 (2) Notices concerning assignments to stations of the fixed service in the bands allocated to that service between 3 000 kHz and 27 500 kHz that are submitted under Nos. **1214** to **1217** or **1218** shall also indicate the class of operation of the assignment, with the use of the following symbols:

Symbol A – assignment for regular operational use which is not provided by another satisfactory means of telecommunication; *or*

Symbol B – assignment for use as a standby to some other means of telecommunication; *or*

Symbol C – assignment for occasional use on a reserve basis and not requiring internationally recognized protection from harmful interference.

1223 (3) When stations of the same service, such as the land mobile service, use a band of frequencies above 28 000 kHz in a specific area or areas, an individual notice should be drawn up, as prescribed in Section C of Appendix 1, which specifies the basic characteristics to be furnished, for each frequency on which there are assignments within the band; however, the particulars should relate only to a typical station. This does not apply:

1224 a) to broadcasting stations;

1225 b) to other terrestrial stations to which the provisions of Sub-Section IIE of this Article apply;

1226 c) to other stations of the fixed or mobile service which operate in the frequency bands listed in Table II of Appendix 28 with equivalent isotropically radiated power exceeding the corresponding values listed in the table;

- 1227** *d)* to the terrestrial stations in the frequency bands listed in Nos. **2509**, **2510** and **2511**.
- 1228** § 3. (1) Whenever practicable, each notice under Nos. **1214** to **1217**, **1219** or **1223** to **1227** should reach the Board before the date on which the assignment is brought into use. It must reach the Board not earlier than three months before the date on which it is to be brought into use, but in any case not later than thirty days after the date it is actually brought into use.
- 1229** (2) A notice under No. **1218** must reach the Board not earlier than one year before the date on which the requested frequency is to be brought into use.
- 1230** (3) A notice concerning a frequency assignment to one of the terrestrial stations mentioned in Sub-Section IIE of this Article must reach the Board not earlier than three years and not later than three months before the date on which the assignment is to be brought into use.
- 1231** (4) Except for cases covered by Nos. **1218** and **1229** any frequency assignment the notice of which reaches the Board more than thirty days after the notified date of bringing into use, or in the case of a terrestrial station mentioned in Sub-Section IIE of this Article, any frequency assignment the notice of which reaches the Board less than three months before it is brought into use, shall, where it is to be recorded, bear a remark in the Master Register to indicate that it is not in conformity with No. **1228** or **1230**. However, such a remark will not be made in the Master Register against an assignment to a terrestrial station which has not been notified under Nos. **1214** to **1217** but which is required to be notified after its entry into use as a result of coordination for or notification of an earth station assignment.

- 1232** § 4. Whatever the means of communication, including telegraph, by which a notice is sent to the Board, it shall be considered complete if it contains at least those appropriate basic characteristics specified in Appendix 1.
- 1233** § 5. When a service or regional agreement has been concluded, the Board shall be informed of the details of this agreement.

Section II. Procedure for the Examination of Notices and the Recording of Frequency Assignments in the Master Register

- 1234** § 6. Any notice submitted under Nos. **1214** to **1217**, **1219** or **1223** to **1227** which does not contain at least those basic characteristics specified in Appendix 1 shall be returned by the Board, by airmail, to the notifying administration with the reasons therefor, unless the information not provided is immediately forthcoming in response to an enquiry of the Board. The Board shall advise the administration by telegram when a notice is returned under this provision.
- 1235** § 7. On receipt of a complete notice, the Board shall include the particulars thereof, with the date of receipt, in a weekly circular to be published within a period of forty days after receipt of the notice and sent by airmail to all administrations. When the Board is not in a position to comply with this time-limit, it shall, as soon as possible, so inform the administrations concerned giving the reasons therefor.
- 1236** § 8. The circular shall contain the full particulars of all such notices received since the publication of the previous circular and shall constitute the acknowledgement to each notifying administration of the receipt of the complete notice.

- 1237** § 9. For the purpose of Nos. **1235** and **1236**, notices submitted under No. **1218** in the form of a request for assistance of the Board shall be grouped together and specially identified.
- 1238** § 10. Complete notices shall be considered by the Board in the order of their receipt; however, notices submitted under No. **1218** shall be treated immediately on receipt. The Board may not postpone the formulation of a finding unless it lacks sufficient data to render a decision in connection therewith; moreover, the Board shall not act upon any notice which has a technical bearing on an earlier notice still under consideration by the Board, until it has reached a finding with respect to such an earlier notice.

**Sub-Section IIA. Procedure to Be Followed in Cases Not Covered
by Sub-Sections IIB to IIE of this Article**

- 1239** § 11. (1) Except for notices referred to in No. **1218**, which are dealt with in Nos. **1275** to **1304**, the Board shall examine each notice with respect to:
- 1240** a) its conformity with the Convention, the Table of Frequency Allocations and the other provisions of the Radio Regulations with the exception of those provisions relating to the probability of harmful interference which are the subject of Nos. **1241** and **1242**;
- 1241** b) the probability of harmful interference to the service rendered by a station for which a frequency assignment already recorded in the Master Register:
- 1) bears a date in Column 2a (see No. **1416**); *or*

- 2) is in conformity with the provisions of No. **1240** and bears a date in Column 2b (see No. **1417**), but has not, in fact, caused harmful interference to any frequency assignment with a date in Column 2a or to any assignment in conformity with No. **1240** with an earlier date in Column 2b;

1242

- c) the probability of harmful interference to the service rendered by a station for which a frequency assignment already recorded in the Master Register:
 - 1) is in conformity with the provisions of No. **1240** and was recorded in the Master Register with a date in Column 2d as a result of a favourable finding with respect to No. **1242**; *or*
 - 2) is in conformity with the provisions of No. **1240** and was recorded in the Master Register with a date in Column 2d after an unfavourable finding with respect to No. **1242**, but has not, in fact, caused harmful interference to any frequency assignment previously recorded in the Master Register and which is in conformity with No. **1240**.

1243

- (2) In conducting the examination under No. **1241** or **1242**, the Board shall apply protection criteria for class of operation A higher than for class of operation B¹. The Board shall disregard the probability of interference to frequency assignments of class of operation C.

1243.1

- ¹ The different protection criteria to be applied by the Board for classes of operation A and B shall be published in the Technical Standards of the Board (see No. **1001**).

1244

- (3) When the notice relates to a frequency above 28 000 kHz, the Board shall only make the examination specified in No. **1242** at the request of an administration directly concerned or

affected when coordination has not been possible between the administrations involved.

- 1245** (4) Where appropriate, the Board shall also examine the notice with respect to its conformity with a regional or service agreement. The procedure to be followed in connection with frequency assignments made pursuant to such an agreement shall be as specified in Nos. **1240** and **1241** or **1242** except that the Board shall not consider the question of the probability of harmful interference among the parties to such agreement. Similarly, the Board shall not consider the probability of harmful interference to the assignments of any administration with which coordination has been effected.
- 1246** § 12. Depending upon the findings of the Board subsequent to the examination prescribed in Nos. **1240** and **1241** or **1242**, and the result of the action undertaken by the Board pursuant to Nos. **1275** to **1278** and **1279**, further action shall be as follows:
- 1247** § 13. (1) *Finding Favourable with Respect to No. 1240 in Cases Where the Provisions of No. 1241 or 1242 Are Not Applicable (see No. 1244).*
- 1248** (2) The assignment shall be recorded in the Master Register. The date to be entered in the appropriate part of Column 2 according to the relevant provisions of Section III of this Article shall be the date of receipt of the notice by the Board.
- 1249** § 14. (1) *Finding Favourable with Respect to Nos. ~~1240~~ and 1241 or 1242.*
- 1250** (2) The assignment shall be recorded in the Master Register. The date to be entered in the appropriate part of Column 2 according to the relevant provisions of Section III of this Article shall be the date of receipt of the notice by the Board.
- 1251** (3) However, should the examination show that the probability of harmful interference for certain hours, seasons, or periods

of solar activity is slightly greater than is considered desirable, a remark shall be included in the Master Register to show that there exists a slight probability of harmful interference and hence precautions must be taken in the use of the assignment to avoid harmful interference to assignments already recorded in the Master Register.

1252 § 15. (1) *Finding Favourable with Respect to No. 1240 but Unfavourable with Respect to No. 1241 or 1242.*

1253 (2) The notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding and with such suggestions as the Board is able to offer with a view to a satisfactory solution of the problem in respect of those administrations it has identified.

1254 (3) Should the notifying administration resubmit the notice with modifications which result, after re-examination, in a favourable finding by the Board with respect to No. **1241** or **1242**, the assignment shall be recorded in the Master Register. The date to be entered in the appropriate part of Column 2 according to the relevant provisions of Section III of this Article shall be the date of receipt by the Board of the original notice. The date of receipt by the Board of the resubmitted notice shall be indicated in the Remarks Column.

1255 (4) The notifying administration may resubmit the notice either unchanged, or with modifications which decrease the probability of harmful interference. In cases where there are no modifications or the modifications do not permit the application of No. **1254** and the Board's finding remains unchanged, should the notifying administration insist on reconsideration of its notice and state that it has brought its assignment into use, the Board shall:

1256 a) publish the information contained in the notice received under No. **1255** in the weekly circular indicating all the administrations which are likely to be affected;

- 1257** *b)* simultaneously send a telegram to each of the administrations referred to in No. **1256** advising them of the notice and requesting them to inform the Board:
- 1258** 1) if the recorded assignment is still in use and, if so, whether it is being used with the notified basic characteristics;
- 1259** 2) of any harmful interference that occurs within a period of two months from the date of publication of the weekly circular referred to in No. **1256**;
- 1260** *c)* take appropriate action in conformity with Nos. **1964** to **1966**, if the assignment which is the basis of the unfavourable finding had been submitted under No. **1218**;
- 1261** *d)* record the assignment in the Master Register if, on expiry of the period referred to in No. **1259**, the Board has received no information that harmful interference has occurred; the date to be entered in the appropriate part of Column 2 according to the relevant provision of Section III of this Article shall be the date of receipt by the Board of the original notice;
- 1262** *e)* immediately return the notice to the notifying administration informing it of the reported interference and shall make such suggestions as it is able to offer for the elimination of the interference, if the Board receives information that harmful interference has occurred during the two months mentioned in No. **1259**.
- 1263** (5) If the Board receives information that harmful interference has occurred after the recording of an assignment under the provisions of No. **1261**, the Board shall investigate the matter and, where appropriate, shall enter a special remark against such an assignment to show that it will not be taken into account when acting on any later notice.

- 1264** (6) If, as a result of the information received under Nos. **1257** to **1259**, the Board is able to reach a favourable finding with respect to No. **1241** or **1242** with regard to any assignment recorded under the provisions of Nos. **1255** and **1261**, the appropriate changes shall be made in respect of the entry of that assignment in the Master Register. If the finding remains unfavourable, the Board shall enter suitable remarks in the Master Register for the entry or entries concerned which describe the situation as found by the Board.
- 1265** (7) Should the notifying administration resubmit the notice with modifications which increase the probability of harmful interference, and should the Board's finding remain unchanged, the resubmitted notice shall be treated under No. **1253**.
- 1266** § 16. (1) *Finding Unfavourable with Respect to No. 1240 in Cases Where the Provisions of No. 1241 or 1242 Are Not Applicable (see No. 1244).*
- 1267** (2) Where the notice includes a specific reference to the fact that the station will be operated in accordance with the provisions of No. **342** of these Regulations, the assignment shall be recorded in the Master Register subject to the provisions of No. **1419** or **1420**. The date to be entered in the appropriate part of Column 2 according to the relevant provisions of Section III of this Article shall be the date of receipt by the Board of the notice.
- 1268** (3) Where the notice does not include a specific reference to the fact that the station will be operated in accordance with the provisions of No. **342** of these Regulations, it shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding and with such suggestions as the Board is able to offer with a view to the satisfactory solution of the problem.

- 1269** § 17. (1) *Finding Unfavourable with Respect to No. 1240 in Cases Where the Provisions of No. 1241 or 1242 Are Applicable.*
- 1270** (2) Where the notice includes a specific reference to the fact that the station will be operated in accordance with the provisions of No. 342 of these Regulations, it shall be examined immediately with respect to No. 1241 or 1242, and the provisions of No. 1271 or 1272 shall be applied, as appropriate.
- 1271** (3) If the finding is favourable with respect to No. 1241 or 1242, the assignment shall be recorded in the Master Register subject to the provisions of No. 1419. The date to be entered in the appropriate part of Column 2 according to the relevant provisions of Section III of this Article shall be the date of receipt by the Board of the notice.
- 1272** (4) If the finding is unfavourable with respect to No. 1241 or 1242, the notice shall be returned immediately by airmail to the notifying administration. Should the administration insist on reconsideration of the notice, the frequency assignment shall be recorded, for information only, with an appropriate remark referring to No. 1419.
- 1273** (5) Where the notice does not include a specific reference to the fact that the station will be operated in accordance with the provisions of No. 342 of these Regulations, it shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding and with such suggestions as the Board is able to offer with a view to a satisfactory solution of the problem.
- 1274** § 18. *Procedure to Be Followed in Respect of Notices under No. 1218.*
- 1275** (1) In the case of a notice under No. 1218 relating to the selection of a frequency assignment for regular operational use (class

of operation A), the Board shall, as quickly as possible, select an appropriate frequency which shall:

- 1276** *a)* be capable of providing the service required;
 - 1277** *b)* be in conformity with Nos. **1240** and **1241** or **1242** as appropriate to ensure a favourable finding;
 - 1278** *c)* be free from harmful interference from any assignment recorded in the Master Register which is itself in conformity with No. **1240**.
- 1279** (2) In the case of a notice submitted under No. **1218** relating to a predetermined frequency, the notifying administration may request the Board, in addition to the examination under Nos. **1240** and **1241** or **1242**, to examine the notice to assess the probability of harmful interference to the assignment from assignments recorded in the Master Register. The Board shall advise the notifying administration of the results of the examination and where necessary shall make suggestions to avoid any possible harmful interference to the assignment.
- 1280** (3) In the case of difficulty in applying the provisions of Nos. **1275** to **1278** and **1279**, the procedure given below shall be followed:
- 1281** *a)* the Board shall first seek access to one of the least loaded parts of an appropriate band, without considering the possibility of adjustment to any existing recorded assignment;
 - 1282** *b)* if necessary the Board shall consult the administration having sent a notice under No. **1218** as to the possibility of modifying the characteristics of the required assignment;
 - 1283** *c)* should action under Nos. **1281** and **1282** fail, and should the requesting administration find the selected frequency

acceptable, the Board shall consider whether the required assignment could be found by suppressing or downgrading an existing recorded assignment. The enquiries to be made in such an event are those described in Section VII of this Article;

- 1284** *d)* should action under No. **1283** fail, the Board shall then seek alternative means of finding the required assignment in such a way as to involve the minimum necessary modification of the characteristics of any existing recorded assignment;
- 1285** *e)* for the purposes of the action envisaged under No. **1284** the Board shall concentrate its enquiries upon the older recorded assignments for which the Board believes there to be satisfactory alternative means of telecommunications;
- 1286** *f)* the Board, having identified in such a case the minimum modification to the characteristics of an existing recorded assignment that would be needed to accommodate a new assignment requested under No. **1218**, shall invoke the relevant provisions of the Convention and shall seek the assistance of the appropriate administration to agree to make, at the appropriate stage, that modification to its recorded assignment;
- 1287** *g)* should action under No. **1286** fail, the Board shall bring to the attention of the administration concerned the fact that in such a case there is then an obligation to reduce the assigned bandwidth, if operationally feasible, or to move the assigned frequency by an amount not exceeding the assigned bandwidth of the recorded frequency assignment, on the condition that no harmful interference is caused to adjacent frequency assignments;

- 1288** *h)* the administration concerned shall then either:
- 1289** 1) give its agreement to effect the necessary modification to its existing recorded assignment together with the date upon which this will be effected; *or*
- 1290** 2) give any reasons why such a modification cannot be made;
- 1291** *i)* in the event of such a case remaining unresolved within three months of the request for an assignment being made under No. **1218**, the Board shall publish a report on the matter for the information of all Members of the Union;
- 1292** *j)* the Board shall, when appropriate during this procedure, consult the administration requesting an assignment under No. **1218** as to the acceptability of the selected frequency;
- 1293** *k)* if, in application of this paragraph, an administration agrees to a change in the basic characteristics of its frequency assignment, that change shall be recorded in the Master Register without change in the original date or dates.
- 1294** (4) Administrations are urged to afford all possible assistance through their monitoring stations to help the Board in the successful discharge of its duties under this sub-section.
- 1295** § 19. (1) *Result of the Action of the Board under Nos. 1275 to 1278 Relating to a Request for Assistance under No. 1218.*
- 1296** (2) Having selected a frequency under Nos. **1275** to **1278** the Board shall forthwith submit the selected frequency by telegram for the approval of the notifying administration, and shall make a provisional entry in the Master Register in accordance with No. **1311**.

The date of receipt of the request to the Board under No. 1218 shall be entered in the appropriate part of Column 2.

- 1297** (3) The notifying administration, on receipt of the telegram mentioned in No. 1296, shall promptly examine the matter and in the event of non-acceptance of the selected frequency shall notify the Board thereof and shall give its reasons for such rejection.
- 1298** (4) In the circumstances mentioned in No. 1297, the Board shall cancel that entry and inform the administration concerned accordingly. In such a case, if the notifying administration so requests, the Board shall make a further attempt to select an acceptable frequency but the request shall be regarded as a new notice under No. 1218.
- 1299** (5) The notifying administration, on accepting a frequency selected by the Board, shall, as soon as possible, inform the Board thereof.
- 1300** (6) If the Board receives no reply within two months to its telegram, sent under No. 1296, seeking approval for the selected frequency, the provisional entry shall be cancelled and the Board shall inform the other administrations accordingly.
- 1301** § 20. (1) *Result of the Action of the Board under No. 1280 Relating to a Request for Assistance under No. 1218.*
- 1302** (2) Having selected a frequency under No. 1280, and if the necessary modifications to the previously recorded assignment are accepted in accordance with No. 1289, the Board shall treat the selected assignment in accordance with No. 1295.
- 1303** (3) Having selected a frequency under No. 1280, if the necessary modification to this previously recorded assignment cannot be made as the result of acting under No. 1290 and if the selected frequency is still acceptable to the requesting administration, the Board shall make an entry in the Master Register in the name of the

requesting administration. The date of receipt of the request sent to the Board under No. **1218** shall be entered in the appropriate part of Column 2.

1304 (4) Any harmful interference which results from the simultaneous use of both assignments shall be the subject of consultations between the administrations concerned.

1305 § 21. (1) *Change in the Basic Characteristics of Assignments Already Recorded in the Master Register.*

1306 (2) A notice of a change in the basic characteristics of an assignment already recorded, as specified in Appendix **1** (except those entered in Columns 2c, 3, 4a and 11 of the Master Register), shall be examined by the Board according to Nos. **1240** and **1241**, **1242** or **1244**, as appropriate, and the provisions of Nos. **1247** to **1273** inclusive applied. Where the change should be recorded, the assignment shall be amended according to the notice.

1307 (3) However, in the case of a change in the basic characteristics of an assignment (except a change of the assigned frequency which exceeds half of the frequency band originally assigned, as defined in No. **141**) which is in conformity with No. **1240**, should the Board reach a favourable finding with respect to No. **1241** or **1242**, or find that the change does not increase the probability of harmful interference to assignments already recorded, the amended assignment shall retain the original date in the appropriate part of Column 2. In addition, the date of receipt by the Board of the notice relating to the change shall be entered in the Remarks Column.

1308 (4) The projected date of bringing into use of a frequency assignment may be extended on request of the notifying administration by three months. In the case where the administration states that, due to exceptional circumstances, it needs a further extension of

this period, such extension may be provided but it shall in no case exceed six months from the original projected date of bringing into use.

- 1309** § 22. *In applying the provisions of the whole of Sub-Sections IIA to IIC, any resubmitted notice which is received by the Board more than six months after the date of its return by the Board shall be considered as a new notice.*
- 1310** § 23. (1) *Recording of Frequency Assignments Notified Before Being Brought into Use.*
- 1311** (2) If a frequency assignment notified in advance of bringing into use has received favourable findings by the Board with respect to Nos. **1240** and **1241** or **1242**, it shall be entered provisionally in the Master Register with a special symbol in the Remarks Column indicating the provisional nature of that entry.
- 1312** (3) Within thirty days (see No. **1228**) after the date of bringing into use, either as originally notified or as modified in application of No. **1308**, the notifying administration shall confirm that the frequency assignment has been brought into use. When the Board is informed that the assignment has been brought into use, the special symbol shall be deleted from the Remarks Column.
- 1313** (4) If the Board does not receive this confirmation within the period referred to in No. **1312**, the entry concerned shall be cancelled. The Board shall consult the administration concerned before taking such action.
- 1314** (5) The provisions of Nos. **1311** to **1313** do not apply to
Mob-87 frequency assignments which are in conformity with the Allotment Plans appearing in Appendices **25**, **26** and **27 Aer2** to these Regulations; such frequency assignments shall be entered in the Master Register on receipt of the notice by the Board.

Mob-87 **Sub-Section IIB. Procedure to Be Followed for Coast Radiotelephone Stations Operating in the Bands Allocated Exclusively to the Maritime Mobile Service Between 4 000 kHz and 27 500 kHz**

1315 § 24. (1) *Examination of Notices Concerning Frequency Assignments to Coast Radiotelephone Stations in the Bands Allocated Exclusively to the Maritime Mobile Service Between 4 000 kHz and 27 500 kHz for Coast Radiotelephone Stations (see No. 1239).*

1316 (2) The Board shall examine each notice covered by No. 1315:

1317 a) with respect to the provisions of No. 1240 and in particular those of Appendix 16 and Nos. 4371 and 4373;

1318 b) in order to determine whether the notified assignment is in conformity with an allotment in the Allotment Plan contained in Appendix 25 to these Regulations.

1319 (3) Any frequency assignment for which the finding is favourable with respect to Nos. 1317 and 1318 shall be recorded in the Master Register (see also No. 1314). The date to be entered in Column 2a shall be that determined according to the relevant provisions of Section III of this Article.

1320 (4) Any frequency assignment for which the finding is unfavourable with respect to No. 1317 shall be examined with respect to Nos. 1267 and 1268. The date to be entered in Column 2b shall be determined according to the relevant provisions of Section III of this Article.

1320A (4A) Any notice which has received a favourable finding with respect to No. 1317 but an unfavourable finding with respect to No. 1318 shall be returned to the notifying administration unless the administration has initiated the procedure of Article 16 in accordance with No. 1719.

Mob-83

1321 (5) Any notice which makes reference to No. **1719** shall be
Mob-83 recorded provisionally in the Master Register, if the finding with respect to No. **1317** is favourable. In this case the Board shall review the recording after the notifying administration has applied the procedure of Article **16**.

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Mob-83

1326 § 25. (1) *Examination of Notices Concerning Frequencies Used*
Mob-87 *for Reception by Coast Radiotelephone Stations in the Bands Allocated Exclusively to the Maritime Mobile Service Between 4 000 kHz and 27 500 kHz for Ship Radiotelephone Stations (see Nos. 1219 and 1239).*

1327 (2) The Board shall examine each notice covered by
 No. **1326**:

1328 a) with respect to the provisions of No. **1240** and in parti-
Mob-83 cular those of Appendix **16** and Nos. **4371** and **4374**;

1329 b) in order to determine whether the notified assignment
 corresponds to a frequency associated, according to
 Appendix **16**, with a frequency allotted to the notifying
 administration in the Allotment Plan contained in
 Appendix **25** to these Regulations.

1330 (3) Any frequency assignment for reception by a coast
 radiotelephone station for which the finding is favourable with res-
 pect to Nos. **1328** and **1329** shall be recorded in the Master Register.
 The date to be entered in Column 2a shall be that determined
 according to the relevant provisions of Section III of this Article.

1331 (4) Any frequency assignment for reception by a coast
 radiotelephone station for which the finding is unfavourable with
 respect to No. **1328** shall be examined with respect to Nos. **1267**

and **1268**. The date to be entered in Column 2b shall be that determined according to the relevant provisions of Section III of this Article.

1332
Mob-87 (5) Any notice which has received a favourable finding with respect to No. **1328** but an unfavourable finding with respect to No. **1329** shall be returned to the notifying administration unless the administration has initiated the procedure of Article **16** in accordance with No. **1719**.

1332A
Mob-87 (6) Any notice which makes reference to No. **1719** shall be recorded provisionally in the Master Register, if the finding with respect to No. **1328** is favourable. In this case the Board shall review the recording after the notifying administration has applied the procedure of Article **16**.

**Sub-Section IIC. Procedure to Be Followed for Aeronautical Stations
Operating in the Bands Allocated Exclusively to the Aeronautical Mobile
Services Between 2 850 kHz and 22 000 kHz**

1333 § 26. (1) *Examination of Notices Concerning Frequency Assignments to Aeronautical Stations in the Aeronautical Mobile (R) Service in the Bands Allocated Exclusively to that Service Between 2 850 kHz and 22 000 kHz (see No. **1239**).*

1334 (2) The Board shall examine each notice covered by No. **1333** to determine whether:

1335 a) the notice is in conformity with the provisions of No. **1240**;

1336
Mob-87 b) the frequency corresponds to one of the frequencies specified in Column 1 of the Allotment Plan for the aeronautical mobile (R) service contained in Appendix **27 Aer2** (Part II, Section II, Article 2), or the assignment is the result of a permitted change of class of emission and the necessary bandwidth of the new emission is within the channelling arrangement provided for in Appendix **27 Aer2**;

- 1337** c) the limitations of use set forth in Column 3 of the Plan have been appropriately observed;
- 1338**
Mob-87 d) the notice is in conformity with the technical principles of the Plan set forth in Appendix 27 Aer2;
- 1339** e) the area of use is within the boundaries of the Areas as set forth in Column 2 of the Plan.
- 1340** (3) A notice which is not in conformity with the provisions of No. 1335 shall be examined with respect to Nos. 1267 and 1268. The date to be entered in Column 2b shall be determined in accordance with the relevant provisions of Section III of this Article.
- 1341**
Mob-87 (4) In the case of a notice in conformity with the provisions of Nos. 1335, 1336 and 1338, but not with those of Nos. 1337 or 1339, the Board shall examine whether the protection specified in Appendix 27 Aer2 (Part I, Section IIA, paragraph 5) is afforded to the allotments in the Plan and to assignments already recorded in the Master Register with a favourable finding with respect to this present provision. In doing so, the Board shall assume that the frequency will be used in accordance with the "Sharing conditions between areas" specified in Appendix 27 Aer2 (Part I, Section IIB, paragraph 4).
- 1342**
Mob-83 (5) Except for cases where No. 1268 applies, all frequency assignments referred to in No. 1333 shall be recorded in the Master Register according to the findings reached by the Board. The date to be entered in Column 2a or 2b shall be that determined according to the relevant provisions of Section III of this Article.
- 1343** § 27. (1) *Examination of Notices Concerning Frequency Assignments to Aeronautical Stations in the Aeronautical Mobile (OR) Service in the Bands Allocated Exclusively to that Service Between 3 025 kHz and 18 030 kHz (see No. 1239).*

1344 (2) The Board shall examine each notice covered by
No. **1343** to determine whether:

1344A a) the notice is in conformity with the provisions of
WARC-92 No. **1240** and those contained in Part II of Appendix **26**;

1345 b) the assignment is in conformity with an allotment
WARC-92 contained in Part III of Appendix **26**;

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WARC-92

1348A (3) A notice which is not in conformity with the provisions
WARC-92 of No. **1344A** shall be examined with respect to Nos. **1267** and **1268**.
The date to be entered in Column 2b shall be determined in accordance with the relevant provisions of Section III of this Article.

1348B (4) Any frequency assignment for which the finding is
WARC-92 favourable with respect to Nos. **1344A** and **1345** shall be recorded in
the Master Register. The date to be entered in Column 2a shall be
determined in accordance with the relevant provisions of Section III
of this Article.

1348C (5) A notice which is in conformity with the provisions of
WARC-92 No. **1344A**, but not with those of No. **1345**, shall be examined with
respect to the allotments in Part III of Appendix **26**. In so doing, the
Board shall apply the technical criteria specified in Part IV of
Appendix **26**. The date to be entered in Column 2a or 2b shall be
determined in accordance with the relevant provisions of Section III
of this Article.

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WARC-92

**Sub-Section IID. Procedure to Be Followed for Broadcasting Stations
Operating in the Bands Allocated Exclusively to the Broadcasting
Service Between 5 950 kHz and 26 100 kHz**

1350 § 28. Frequency assignments to broadcasting stations in the bands
HFBC-87 allocated exclusively to the broadcasting service between 5 950 kHz
and 26 100 kHz shall be dealt with in accordance with the provisions
of Article 17.

**Sub-Section IIE. Procedure to Be Followed in Cases Where
Terrestrial Stations Are in the Same Frequency Band as an Existing
Earth Station or One for Which Coordination Has Been Effected or
Initiated and Are Within its Coordination Area**

- 1351** § 29. The Board shall examine each notice:
- 1352** a) with respect to its conformity with the Convention, the
Table of Frequency Allocations and the other provisions
of the Radio Regulations with the exception of those
provisions relating to the coordination procedure and the
probability of harmful interference which are the subject
of Nos. **1353** and **1354**;
- 1353** b) with respect to its conformity with the provisions of Nos.
1148 to **1154** relating to coordination of the use of the
frequency assignment with the other administrations
concerned;
- 1354** c) where appropriate, with respect to the probability of
harmful interference to the service rendered by an earth
receiving station for which a frequency assignment
already recorded in the Master Register is in conformity
with the provisions of No. **1503** and if the corresponding
frequency assignment to the space transmitting station
has not, in fact, caused harmful interference to any
frequency assignment in conformity with No. **1240** or

1352, as appropriate, previously recorded in the Master Register.

1355 § 30. Depending on the findings of the Board subsequent to the examination prescribed in Nos. **1352**, **1353** and **1354**, further action shall be as follows:

1356 § 31. (1) *Finding Unfavourable with Respect to No. 1352.*

1357 (2) Where the notice includes a specific reference to the fact that the station will be operated in accordance with the provisions of No. **342**, and the finding is favourable with respect to No. **1353** or **1354**, as appropriate, the assignment shall be recorded in the Master Register subject to the provisions of No. **1420**. The date of receipt by the Board of the notice shall be entered in Column 2d.

1358 (3) If the finding is unfavourable with respect to No. **1353** or **1354**, as appropriate, the notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding. Should the notifying administration insist on reconsideration of the notice, the assignment shall be recorded in the Master Register with the understanding that the provisions of No. **1420** shall be applied. The date of receipt by the Board of the original notice shall be entered in Column 2d.

1359 (4) Where the notice does not include a specific reference to the fact that the station will be operated in accordance with the provisions of No. **342**, it shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding and with such suggestions as the Board is able to offer with a view to a satisfactory solution of the problem.

1360 (5) If the notifying administration resubmits the notice with a specific reference to the fact that the station will be operated in accordance with the provisions of No. **342**, it shall be treated as a new notice.

- 1361** § 32. (1) *Finding Favourable with Respect to No. 1352.*
- 1362** (2) Where the Board finds that the coordination procedure mentioned in No. **1353** has been successfully completed with all administrations whose earth stations may be affected, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d.
- 1363** (3) Where the Board finds that the coordination procedure mentioned in No. **1353** has not been applied, and:
- 1364** a) if the notifying administration requests the Board to effect the required coordination, the Board shall take the appropriate action; if the Board's efforts toward securing agreement are successful, it shall so inform the administrations concerned and shall treat the notice in accordance with No. **1362**;
- 1365** b) if the Board's efforts toward securing agreement in application of Nos. **1364** or **1169** to **1174** are unsuccessful, or if, when notifying the assignment, the administration states that it has been unsuccessful and does not request the Board to effect the required coordination, the Board shall examine the notice with respect to the provisions of No. **1354**. At the same time, the Board shall so inform the administrations concerned;
- 1366** c) if the notifying administration does not request the Board to effect the required coordination, the notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this action and with such suggestions as the Board is able to offer with a view to a satisfactory solution of the problem.
- 1367** (4) Where the notifying administration resubmits the notice and the Board finds that the coordination procedure mentioned in No. **1353** has been successfully completed with all administrations whose earth stations may be affected, the assignment shall be

recorded in the Master Register. The date of receipt by the Board of the original notice shall be entered in Column 2d. The date of receipt by the Board of the resubmitted notice shall be entered in the Remarks Column.

1368 (5) Where the notifying administration resubmits the notice with a request that the Board effect the required coordination, it shall be treated in accordance with the provisions of Nos. **1363**, **1364** or **1365**. However, in any subsequent recording of the assignment in the Master Register, the date of receipt by the Board of the resubmitted notice shall be entered in the Remarks Column.

1369 § 33. (1) *Finding Favourable with Respect to Nos. 1352 and 1354.*

1370 (2) The assignment shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d.

1371 § 34. (1) *Finding Favourable with Respect to No. 1352 but Unfavourable with Respect to No. 1354.*

1372 (2) The notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding and with such suggestions as the Board is able to offer with a view to a satisfactory solution of the problem.

1373 (3) Should the notifying administration resubmit the notice with modifications which result, after re-examination, in a favourable finding by the Board with respect to No. **1354**, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the original notice shall be entered in Column 2d. The date of receipt by the Board of the resubmitted notice shall be indicated in the Remarks Column.

1374 (4) Should the notifying administration resubmit the notice, either unchanged, or with modifications which decrease the probability of harmful interference, but not sufficiently to permit the provisions of No. **1373** to be applied, and should that administration

insist on reconsideration of the notice, but should the Board's finding remain unchanged, the assignment shall be recorded in the Master Register. However, this entry shall be made only if the notifying administration informs the Board that the assignment has been in use for at least four months, counting from the date when both are in service, without any complaint of harmful interference having been received. The date of receipt by the Board of the original notice shall be entered in Column 2d. The date of receipt by the Board of the advice that no complaint of harmful interference has been received shall be indicated in the Remarks Column.

1375 (5) An administration may request the Board to make a provisional entry for that assignment in the Master Register when it is unable to inform the Board about the interference mentioned in No. **1374** because the assignment liable to suffer interference has not yet been brought into service. The Board shall then enter that assignment with a special symbol in the Remarks Column to indicate its provisional character.

1376 § 35. (1) *Changes in the Basic Characteristics of Assignments Already Recorded in the Master Register.*

1377 (2) A notice of a change in the basic characteristics of an assignment notified under No. **1221** and already recorded, as specified in Appendix 1, Section A or B (except those entered in Columns 2c, 3 and 4a of the Master Register), or a notice under No. **1221** concerning an assignment already recorded under Nos. **1223** to **1227** (Appendix 1, Section C), shall be examined by the Board according to Nos. **1352** and **1353** and, where appropriate, No. **1354**, and the provisions of Nos. **1356** to **1374** inclusive applied. Where the change should be recorded, the original assignment shall be amended according to the notice.

1378 (3) However, in the case of a change in the basic characteristics of an assignment which is in conformity with No. **1352**, should the Board reach a favourable finding with respect to No. **1353**,

and, where its provisions are applicable, with respect to No. 1354, or find that the change does not increase the probability of harmful interference to assignments already recorded, the amended assignment shall retain the original date in Column 2d. In addition, the date of receipt by the Board of the notice relating to the change shall be entered in the Remarks Column.

- 1379** (4) The projected date of bringing into use of a frequency assignment may be extended on request of the notifying administration by three months. In the case where the administration states that, due to exceptional circumstances, it needs a further extension of this period, such extension may be provided but it shall in no case exceed six months from the original projected date of bringing into use.
- 1380** § 36. In applying the provisions of this sub-section, any resubmitted notice which is received by the Board more than two years after the date of its return by the Board shall be considered as a new notice.
- 1381** § 37. (1) *Recording of Frequency Assignments Notified Before Being Brought into Use.*
- 1382** (2) If a frequency assignment notified in advance of bringing into use has received a favourable finding by the Board with respect to Nos. 1352 and 1353 and, where appropriate, with respect to No. 1354, it shall be entered provisionally in the Master Register with a special symbol in the Remarks Column indicating the provisional nature of that entry.
- 1383** (3) Within thirty days after the date of bringing into use, either as originally notified (see No. 1230) or as modified in application of No. 1379, the notifying administration shall confirm that the frequency assignment has been brought into use. When the Board is informed that the assignment has been brought into use, the special symbol shall be deleted from the Remarks Column.

1384 (4) If the Board does not receive this confirmation within the period referred to in No. **1383**, the entry concerned shall be cancelled. The Board shall consult the administration concerned before taking such action.

1385 (5) If, on the expiry of the period specified in No. **1374**, the Board is informed that there has been no complaint of harmful interference, it shall delete the symbol entered in application of No. **1375**.

Section III. Recording of Dates and Findings in the Master Register

1386 § 38. In any case where a frequency assignment is recorded in the Master Register, the finding reached by the Board shall be indicated by a symbol in the appropriate column. In addition, the reasons for reaching an unfavourable finding shall be inserted in the Remarks Column.

1387 § 39. The procedure for recording dates in the appropriate part of Column 2 of the Master Register which shall be applied according to the frequency bands and services concerned is described in the following Nos. **1388** to **1413** for frequency assignments referred to in Sub-Sections IIA to IIC.

1388 § 40. (1) *Frequency Bands:*

Mob-87

9 - 2 850 kHz
 3 155 - 3 400 kHz
 3 500 - 3 900 kHz in Region 1
 3 500 - 4 000 kHz in Region 2
 3 500 - 3 950 kHz in Region 3
 4 221 - 4 351 kHz
 6 332.5 - 6 501 kHz
 8 438 - 8 707 kHz
 12 658.5 - 13 077 kHz
 16 904.5 - 17 242 kHz
 19 705 - 19 755 kHz
 22 445.5 - 22 696 kHz
 26 122.5 - 26 145 kHz

- 1389** (2) For any assignment to which the provisions of Nos. **1250**, **1251** or **1254** apply, the relevant date shall be entered in Column 2a of the Master Register; however, for class of operation B assignments to stations of the fixed service, the relevant date shall be entered in Column 2b.
- 1390** (3) For any assignment to which the provisions of Nos. **1255**, **1265**, **1267**, **1271** or **1272** apply, the relevant date shall be entered in Column 2b of the Master Register.
- 1391** § 41. (1) *Frequency Bands Allocated Exclusively to the Maritime*
Mob-87 *Mobile Service Between 4 000 kHz and 27 500 kHz for Coast Radio-telephone Stations.*
- 1392** (2) If the finding is favourable with respect to Nos. **1317**
Mob-87 and **1318**, the date of 1 July 1989 shall be entered in Column 2a.
- 1393** (3) For all other cases referred to in No. **1315**, the date of
Mob-87 receipt of the notice by the Board shall be entered in Column 2b.
- 1394** (4) For assignments to stations other than radiotelephone
coast stations, the relevant date shall be entered in Column 2b (see
Nos. **1271** and **1272**).
- 1395** § 42. (1) *Frequency Bands Allocated Exclusively to the Maritime*
Mob-87 *Mobile Service Between 4 000 kHz and 27 500 kHz for Ship Radio-telephone Stations.*
- 1396** (2) If the finding is favourable with respect to Nos. **1328**
Mob-87 and **1329**, the date of 1 July 1989 shall be entered in Column 2a.
- 1397** (3) In all other cases covered by No. **1326**, the date of
receipt of the notice by the Board shall be entered in Column 2b.

- 1398** (4) For assignments other than assignments of frequencies for reception by radiotelephone coast stations, the relevant date shall be entered in Column 2b (see Nos. **1271** and **1272**).
- 1399** § 43. (1) *Frequency Bands Allocated Exclusively to the Maritime*
Mob-87 *Mobile Service Between 4000 kHz and 27500 kHz for Radio-telegraph Ship Stations (see No. 1220).*
- 1400** (2) For assignments to stations other than radiotelegraph ship stations, the relevant date shall be entered in Column 2b (see Nos. **1271** and **1272**).
- 1401** § 44. (1) *Frequency Bands Allocated Exclusively to the Aero-nautical Mobile (R) Service Between 2 850 kHz and 22 000 kHz.*
- 1402** (2) If the finding is favourable with respect to Nos. **1336** to **1339**, the date of 5 March 1978 shall be entered in Column 2a.
- 1403** (3) If the finding is favourable with respect to No. **1341**, the date of 5 March 1978 shall be entered in Column 2b.
- 1404** (4) In all other cases covered by No. **1333**, the date of 6 March 1978 shall be entered in Column 2b by the Board.
- 1405** (5) For assignments to stations other than aeronautical stations in the aeronautical mobile (R) service, the relevant date shall be entered in Column 2b (see Nos. **1271** and **1272**).
- 1406** § 45. (1) *Frequency Bands Allocated Exclusively to the Aero-nautical Mobile (OR) Service Between 3 025 kHz and 18 030 kHz.*
- 1407** (2) If the finding is favourable with respect to Nos. **1344A**
WARC-92 and **1345**, the date of 15 December 1992 shall be entered in Column 2a.
- 1408** (3) If the finding is favourable with respect to No. **1348C**,
WARC-92 the date of 15 December 1992 shall be entered in Column 2a.

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1410 (4) In all other cases covered by No. **1343**, the date of
WARC-92 16 December 1992 shall be entered in Column 2b.

1411 (5) For assignments to stations other than aeronautical
WARC-92 stations in the aeronautical mobile (OR) service, the relevant date shall be entered in Column 2b (see Nos. **1271** and **1272**).

1412 § 46. (1) *Frequency Bands Between 3 950 kHz (4 000 kHz in Region 2) and 28 000 kHz Other than Those Allocated Exclusively to the Aeronautical Mobile Service, Maritime Mobile Service, Broadcasting Service or Amateur Service, and Frequency Bands above 28 000 kHz.*

1413 (2) For any frequency assignment which is to be recorded under the provisions of Section II of this Article, the relevant date shall be entered in Column 2d of the Master Register.

1414 § 47. *Date to Be Entered in Column 2c.*

1415 The date to be entered in Column 2c shall be the date of bringing into use notified by the administration concerned (see Nos. **1228** to **1231**).

Section IV. Categories of Frequency Assignments

1416 § 48. (1) Any frequency assignment which bears a date in Column 2a of the Master Register shall have the right to international protection from harmful interference; so shall class of operation A assignments to stations of the fixed service in the appropriate bands between 3 000 kHz and 27 500 kHz recorded with a date in Column 2d as a result of a favourable finding with respect to Nos. **1240** and **1242**, in particular those resulting from the application of No. **1218**.

- 1417** (2) Any frequency assignment which bears a date in Column 2b is recorded in the Master Register in order that administrations may take into account the fact that the frequency assignment concerned is in use. This recording shall not give the right to international protection to the frequency assignment concerned, except as provided for in No. **1241**, sub-paragraph 2).
- 1418** (3) For frequency assignments having dates in two parts of Column 2, the date in Column 2c is given for information only.
- 1419** (4) If harmful interference to the reception of any station whose assignment is in accordance with No. **1240** or **1352** is actually caused by the use of a frequency assignment which is not in conformity with No. **1240** or **1352**, the station using the latter frequency assignment shall, on receipt of advice thereof, immediately eliminate this harmful interference.
- 1420** (5) If harmful interference to the reception of any station whose assignment is in accordance with No. **1503** is actually caused by the use of a frequency assignment which is not in conformity with No. **1240** or **1352**, the station using the latter frequency assignment shall, on receipt of advice thereof, immediately eliminate this harmful interference.

Section V. Review of Findings

- 1421** § 49. (1) The review of a finding by the Board may be undertaken:
- a)* at the request of the notifying administration;
 - b)* at the request of any other administration interested in the question, but only on the grounds of actual harmful interference;

c) on the initiative of the Board itself when it considers this is justified.

1422 (2) The Board, in the light of all the data at its disposal, shall review the matter, taking into account No. **1240** or **1352** and Nos. **1241**, **1242**, **1353** or **1354**, as appropriate, and shall render an appropriate finding, informing the notifying administration prior either to the publication of its finding or to any recording action.

1423 § 50. If a review of an unfavourable finding has been requested by the notifying administration on the grounds of special assistance to meet an urgent and essential need, in a case where harmful interference has been experienced, the Board shall consult immediately the administrations concerned and shall make such suggestions as will facilitate the operation of the assignment of the administration which asked for special assistance; such amendments as result from this consultation shall be made to the Master Register.

1424 § 51. (1) After actual use for a reasonable period of an assignment which has been entered in the Master Register on the insistence of the notifying administration, following an unfavourable finding with respect to Nos. **1241**, **1242** or **1354**, as appropriate, this administration may request the Board to review the finding. Thereupon the Board shall review the matter, first having consulted the administrations concerned.

1425 (2) If the finding of the Board is then favourable, it shall enter in the Master Register the changes that are required so that the entry shall appear in the future as if the original finding had been favourable.

1426 (3) If the finding with regard to the probability of harmful interference remains unfavourable, no change shall be made in the original entry.

1427 § 52. (1) In the event of a deletion or modification of any recorded frequency assignment which had been the cause of an unfavourable finding and had led a later assignment to be recorded

under No. 1255, the Board shall review, and, where appropriate, modify that unfavourable finding with respect to No. 1241 or 1242.

- 1428 (2) To provide a basis for the review of an entry in the Master Register made in accordance with No. 1255, the Board shall, when examining the relevant notice, determine the date on which the review is to be made. If by that date no complaint of harmful interference has been received by the administration concerned, the Board shall automatically reverse the original unfavourable finding with respect to No. 1241 or 1242.

Section VI. Maintenance of the Master Register

- 1429 § 53. *Modification, Cancellation and Review of Entries in the Master Register.*
- 1430 § 54. In case of permanent discontinuance of the use of any recorded frequency assignment, the notifying administration shall inform the Board within three months of such discontinuance, whereupon the entry shall be removed from the Master Register.
- 1431 § 55. Whenever it appears to the Board from the information available that a recorded assignment has not been brought into regular operation in accordance with the notified basic characteristics, or is not being used in accordance with those basic characteristics, the Board shall consult the notifying administration and, subject to its agreement, shall either cancel or suitably modify the entry.
- 1432 § 56. If, in connection with an enquiry by the Board under No. 1264 or 1431, the notifying administration has failed to supply the Board within three months with the necessary or pertinent information, the Board shall disregard the assignment concerned when acting on any later notice, until such time as it has been informed that

the assignment is being used as notified, or until it has received the information required. The Board shall make suitable entries in the Remarks Column of the Master Register to indicate the situation, and in particular the period when the assignment was not taken into account by the Board.

1433 § 57. (1) *Periodic Examination of the Master Register.*

1434 (2) The Board shall institute a long-term programme of periodic reviews of each section of the Master Register with the aim of improving and maintaining its accuracy.

1435 (3) For the purpose of the reviews mentioned in No. **1434**, the Board shall send to each administration, for revision and return, a national extract of the Master Register relating to the particular section under review. The Board shall at the same time draw the attention of administrations to any assignment to a station in the fixed service in frequency bands between 3 000 kHz and 27 500 kHz for which other means of telecommunication are believed to be available.

1436 (4) Administrations shall, having regard to the need to improve and maintain the accuracy of the Master Register, cooperate in these periodic reviews by notifying the deletion of any unused assignment and, where appropriate, the modification of other entries.

1437 (5) The Board shall include in its annual report to administrations a section relating to the work done under the provisions of the present paragraph 57, the results achieved, and the programme for the following year.

Section VII. Studies and Recommendations

1438 § 58. (1) If it is requested by any administration, particularly by an administration of a country in need of special assistance, the Board, using such means at its disposal as are appropriate in the

circumstances, shall conduct a study of the following problems of frequency utilization:

- 1439 a) in cases arising under No. **1252** as to a possible alternative frequency assignment to avoid probable harmful interference;
- 1440 b) in cases where a need arises for additional frequency assignments within a specified portion of the radio spectrum;
- 1441 c) in cases where, due to harmful interference, two or more frequencies of the same order of magnitude are being used alternately to maintain communication on a circuit requiring only one frequency of that order;
- 1442 d) in cases of alleged contravention or non-observance of these Regulations, or of harmful interference.
- 1443 (2) The Board shall thereupon prepare and forward to the administrations concerned a report containing its finding and recommendations for the solution of the problem.
- 1444 (3) On receiving the Board's recommendations for the solution of the problem, an administration shall promptly acknowledge the receipt by telegram and shall subsequently indicate the action it intends to take. In cases when the Board's suggestions or recommendations are unacceptable to the administrations concerned, further efforts should be made by the Board to find an acceptable solution to the problem.
- 1445 § 59. If the Board finds, in particular following a request from an administration of a country in need of special assistance, that a change in the basic characteristics, including a change of frequency within a specific frequency range, of one or more assignments in conformity with the provisions of No. **1240** will:
- 1446 a) accommodate a new assignment; *or*

- 1447** *b)* facilitate the solution of a problem of harmful interference; *or*
- 1448** *c)* otherwise facilitate the more effective use of a particular portion of the radio spectrum; *and*
- 1449** if such change is acceptable to the administration or administrations concerned, the change in basic characteristics shall be recorded in the Master Register without change in the original date or dates.
- 1450** § 60. In a case where, as a result of a study, the Board submits to one or more administrations suggestions or recommendations for the solution of a problem, and where no answer has been received from one or more of these administrations within a period of thirty days, the Board shall consider that the suggestions or recommendations concerned are unacceptable to the administrations which did not answer. If it was the requesting administration which failed to answer within this period, the Board shall close the study.

Section VIII. Miscellaneous Provisions

- 1451** § 61. The provisions of Sections V, VI (except No. **1430**) and VII
Mob-87 of this Article shall not be applied to frequency assignments which are in conformity with the Allotment Plans contained in Appendices **25, 26** and **27 Aer2** to these Regulations.
- 1452** § 62. (1) If it is requested by any administration, particularly by an administration of a country in need of special assistance, the Board using such means at its disposal as are appropriate in the circumstances, shall render the following assistance:
- a)* verification of the diagram showing the coordination area referred to in No. **1113**;
 - b)* computation of the interference, as referred to in Nos. **1164** to **1166**;

- c) any other assistance of a technical nature for completion of the procedures in this Article.

1453 (2) In making a request to the Board under No. **1452**, the administration shall furnish the Board with the necessary information.

1454 § 63. The Technical Standards of the Board shall be based on the relevant provisions of these Regulations and the Appendices thereto, the decisions of administrative conferences of the Union, as appropriate, the Recommendations of the CCIR, the state of the radio art and the development of new transmission techniques, account being taken of exceptional propagation conditions which may prevail in certain regions (for example, particularly pronounced ducting).

1455 § 64. (1) The Board shall inform all administrations of its findings and reasons therefor, together with all changes made to the Master Register, through its weekly circular. Such information shall be published within forty-five days of the date of publication of the complete notice in the weekly circular referred to in No. **1235**. When the Board is not in a position to comply with the time-limit referred to above it shall, as soon as possible, so inform the administration concerned giving the reasons therefor.

1456 (2) The weekly circular of the IFRB shall be published in the working languages of the Union as defined in the Convention. In carrying out the various procedures stipulated in the Radio Regulations, the Board shall use the weekly circular as a means of communicating with administrations to the maximum extent practicable.

1457 § 65. The Board shall inform administrations, at appropriate intervals, of the cases of special assistance which were studied under Nos. **1423** and **1438** to **1450** inclusive of these Regulations.

1458 § 66. In case a Member avails itself of the provisions of Article 50
of the Convention, the Board shall, on request, make its records
available for such proceedings as are prescribed in the Convention for
the settlement of international disputes.

1459
to NOT allocated.
1487

ARTICLE 13

WARC-92

**Notification and Recording in the Master International
Frequency Register of Frequency Assignments¹ to Radio
Astronomy and Space Radiocommunication Stations Except
Stations in the Broadcasting-Satellite Service^{2, 3, 4, 5}**

Section I. Notification of Frequency Assignments

1488 § 1. (1) Any frequency assignment to be used for transmission or reception by an earth or space station shall be notified to the Board:

1489 a) if the use of the frequency concerned is capable of causing harmful interference to any service of another administration; *or*

A.13.1 ¹ The expression *frequency assignment*, wherever it appears in this Article, shall be understood to refer either to a new frequency assignment or to a change in an assignment already recorded in the Master International Frequency Register (hereinafter called *Master Register*).

A.13.2 ² For the notification and recording of frequency assignments to stations in the broadcasting-satellite service and other services in the frequency bands 11.7 - 12.2 GHz (in Region 3), 11.7 - 12.5 GHz (in Region 1) and 12.2 - 12.7 GHz (in Region 2), as well as the notification and recording of frequency assignments to feeder-link stations in the fixed-satellite service (Earth-to-space) in the frequency bands 14.5 - 14.8 GHz in Region 1 (see No. 863) and in Region 3, 17.3 - 18.1 GHz in Regions 1 and 3, and 17.3 - 17.8 GHz in Region 2 and other services in these bands, see also Article 15 and Article 15A respectively.

A.13.3 ³ These procedures may be applicable for earth stations of the earth exploration-satellite service, space research service, space operation service and radiodetermination-satellite service intended to be used while in motion or during halts at unspecified points.

A.13.4 ⁴ For the application of the provisions of this Article with respect to stations in a space radiocommunication service using frequency bands covered by the fixed-satellite service Allotment Plan, see also Appendix 30B.

A.13.5 ⁵ See Resolution 46 (WARC-92).

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- 1490** *b)* if the frequency is to be used for international radiocommunications; *or*
- 1491** *c)* if it is desired to obtain international recognition of the use of the frequency.
- 1492** (2) Any frequency or frequency band to be used for reception by a particular radio astronomy station may be notified if it is desired that such data should be included in the Master Register.
- 1493** (3) When the Board receives from one administration a notice containing a modification or deletion of a space station assignment already recorded in the Master Register on behalf of a group of administrations, it shall be assumed, in the absence of information to the contrary, that the notice of modification or deletion is submitted on behalf of all the administrations which were associated with the original notification.
- 1493A** (4) A notice submitted in accordance with Nos. **1488**
Orb-88 to **1491** and relating to a frequency assignment to a space station for transmission or reception may indicate the characteristics of one or more associated typical earth stations with the area in which they are intended to be operated.
- 1494** (5) A notice submitted in accordance with Nos. **1488**
Orb-88 to **1491** and relating to a frequency assignment to earth stations in a satellite system shall include the technical characteristics either of each earth station, with its location, or of a typical earth station, with an indication of the area within which such typical earth stations are to be operated.
- 1494A** Except for mobile earth stations, individual notification
Orb-88 of an earth station is required when:
- 1494B** *a)* the coordination area calculated in accordance with
Orb-88 the method given in Appendix 28 overlaps the territory of another administration in which the frequency band is allocated with equal rights to the terrestrial services;

- 1494C** b) the characteristics of the earth station are such that
Orb-88 the interference caused or suffered is greater than
 for any typical earth station coordinated under
 No. **1060** for the relevant location.

1495 § 2. For any notification under Nos. **1488** to **1492** or **1494**, a notice for each frequency assignment shall be drawn up as prescribed in Appendix 3, the various sections of which specify the basic characteristics to be furnished according to the case. It is recommended that the notifying administration should also supply the additional data called for in Section A of that Appendix, together with such further data as it may consider appropriate.

1496 § 3. (1) For a frequency assignment to an earth or space station, each notice shall be submitted in order to reach the Board not earlier than three years before the date on which the assignment is to be brought into use. The notice shall reach the Board in any case not later than three months ¹ before this date, except in the case of assignments in the space research service in bands allocated exclusively to this service or in shared bands in which this service is the sole primary service. In the case of such an assignment in the space research service, the notice should, whenever practicable, reach the Board before the date on which the assignment is brought into use, but it shall in any case reach the Board not later than thirty days after the date it is actually brought into use.

1497 (2) Any frequency assignment to an earth or space station, the notice of which reaches the Board after the applicable period specified in No. **1496**, shall, where it is to be recorded, bear a mark in the Master Register to indicate that it is not in conformity with No. **1496**.

1496.1 ¹ The notifying administration shall take this limit into account when deciding, where appropriate, to initiate the coordination procedure(s).

**Section II. Procedure for the Examination of Notices
and the Recording of Frequency Assignments in the Master Register**

- 1498** § 4. Any notice which does not contain at least those basic characteristics specified in Appendix 3 shall be returned by the Board, by airmail, to the notifying administration with the reasons therefor, unless the information not provided is immediately forthcoming in response to an enquiry from the Board. The Board shall advise the administration by telegram when a notice is returned under this provision.
- 1499** § 5. On receipt of a complete notice, the Board shall include the particulars thereof, including diagrams, with the date of receipt, in the weekly circular referred to in No. **1235** to be published within a period of forty days after receipt of the notice. When the Board is not in a position to comply with this time-limit, it shall, as soon as possible, so inform the administrations concerned giving the reasons therefor.
- 1500** § 6. The circular shall contain the full particulars of all such notices received by the Board since the publication of the previous circular and shall constitute the acknowledgement to each notifying administration of the receipt of the complete notice.
- 1501** § 7. Complete notices shall be considered by the Board in the order of their receipt, taking into account the time-limit referred to in No. **1583**. The Board shall not postpone the formulation of a finding unless it lacks sufficient data to render a decision in connection therewith; moreover, the Board shall not act upon any notice which has a technical bearing on an earlier notice still under consideration by the Board until it has reached a finding with respect to such earlier notice.

1502 § 8. The Board shall examine each notice:

1503
Orb-88 a) with respect to its conformity with the Convention, the Table of Frequency Allocations¹ and the other provisions of the Radio Regulations, with the exception of those relating to the coordination procedures and the probability of harmful interference which are the subject of the following subparagraphs:

1504 b) with respect to its conformity with the provisions relating to the coordination of the use of the frequency assignment with the other administrations concerned, vis-à-vis space radiocommunication stations in cases where the provisions of Nos. **1060** or **1066** to **1071** are applicable;

1505 c) with respect to its conformity with the provisions relating to the coordination of the use of the frequency assignment with the other administrations concerned, vis-à-vis terrestrial radiocommunication stations in cases where the provisions of No. **1107** are applicable;

1506 d) with respect to the probability of harmful interference, when the coordination under No. **1060** has not been successfully effected; this examination² shall take into account the frequency assignments for transmission or reception already recorded in the Master Register:

1507 1) in application of Nos. **1526**, **1531**, **1534** or **1543**; *or*

1503.1
Orb-88 ¹ Conformity with the Table of Frequency Allocations implies the successful application of Article **14**, when necessary.

1506.1 ² The examination of such a notice with respect to any other frequency assignment published under No. **1078** but not yet notified shall be deferred until both assignments have been notified; the Board shall then examine them in the order of their publication under No. **1078**.

- 1508** 2) in application of No. **1544**, if that frequency assignment has not in fact caused harmful interference to any other previously recorded frequency assignment which is in conformity with No. **1503**;
- 1509** e) with respect to the probability of harmful interference, when the coordination under No. **1107** has not been successfully effected; this examination shall take into account the frequency assignments for transmission or reception already recorded in the Master Register:
- 1510** 1) in application of No. **1248**; *or*
- 1511** 2) in application of Nos. **1362**, **1367**, **1370** or **1373**; *or*
- 1512** 3) in application of No. **1374** if that assignment has not in fact caused harmful interference to any other previously recorded frequency assignment which is in conformity with No. **1503**.
- 1513** § 9. When, following an examination of a notice with respect to Nos. **1506** to **1508**, the Board reaches an unfavourable finding based upon the probability of harmful interference to a recorded assignment for a space station which the Board has reason to believe may not be in regular use, for example, as a consequence of No. **1569**, the Board shall forthwith consult the administration responsible for the registered assignment. If it is established, after such consultation and on the basis of the information available, that the recorded assignment has not been in use for two years, it shall not be taken into account for the purposes of the examination in progress or any other further

examination under Nos. **1506** to **1508** conducted before the date on which the assignment is brought back into use. Before the assignment is brought back into use, it shall be subject to further coordination in accordance with the provisions of No. **1060** or further examination by the Board with respect to Nos. **1506** to **1508**, as appropriate. The date on which the assignment is brought back into use shall then be entered in the Master Register.

- 1514** § 10. Depending upon the findings of the Board subsequent to the examination prescribed in Nos. **1503**, **1504**, **1505**, **1506** to **1508** and **1509** to **1512**, as appropriate, further action shall be as follows:
- 1515** § 11. (1) *Finding Favourable with Respect to No. **1503** in Cases Where the Provisions of Nos. **1504** and **1505** Are Not Applicable (space station on board a non-geostationary satellite).*
- 1516** (2) The assignment shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d.
- 1517** § 12. (1) *Finding Unfavourable with Respect to No. **1503**.*
Orb-88
- 1518** (2) Where the notice includes a specific reference to the fact
Orb-88 that the station will be operated in accordance with the provisions of No. **342**, the assignment shall be recorded in the Master Register on the understanding that the provisions of No. **1560** shall be applied, as appropriate. The date of receipt by the Board of the notice shall be entered in Column 2d.
- 1519** (3) Where the notice does not include a specific reference to the fact that the station will be operated in accordance with the provisions of No. **342**, it shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding together with such suggestions as the Board is able to offer with a view to a satisfactory solution of the problem.

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1525 § 14. (1) *Finding Favourable with Respect to No. 1503 in Cases Where the Provisions of No. 1504 or 1505 Are Applicable.*

1526 (2) Where the Board finds that the coordination procedures mentioned in No. 1504 or 1505 have been successfully completed with all administrations whose space or terrestrial radiocommunication stations may be affected, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d.

1527 (3) Where the Board finds that either of the coordination procedures mentioned in Nos. 1504 and 1505 has not been applied and:

1528 a) if the notifying administration requests the Board to effect the coordination, the Board shall take appropriate action; if the Board's efforts toward securing agreement are successful, it shall so inform the administrations concerned and shall treat the notice in accordance with No. 1526;

1529 b) if the Board's efforts toward securing agreement in
Orb-88 application of No. 1528 or Nos. 1089 to 1094 or Nos. 1130 to 1135 are unsuccessful, the Board shall examine the notice with respect to the provisions of Nos. 1506 to 1508 and Nos. 1509 to 1512, as appropriate. At the same time, the Board shall so inform the administrations concerned;

1530 c) if the notifying administration does not request the Board to effect the required coordination, the notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this action together with such suggestions as the Board is able to offer with a view to a satisfactory solution of the problem.

1530A (4) Where the notifying administration states that it has
Orb-88 been unsuccessful in the application of the coordination procedures mentioned in Nos. 1504 and 1505, the Board shall examine the notice with respect to the provisions of Nos. 1506 to 1508 and Nos. 1509 to 1512, as appropriate. At the same time, the Board shall so inform the administrations concerned.

1531 (5) Where the notifying administration resubmits the notice
Orb-88 and the Board finds that the coordination procedures mentioned in Nos. **1504** and **1505** have been successfully completed with all administrations whose space or terrestrial radiocommunication stations may be affected, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the original notice shall be entered in Column 2d. The date of receipt by the Board of the resubmitted notice shall be entered in the Remarks Column.

1532 (6) Where the notifying administration resubmits the notice
Orb-88 with a request that the Board effect the required coordination under No. **1060** or **1107**, it shall be treated in accordance with the provisions of Nos. **1527** and either **1528** or **1529**. However, in any subsequent recording of the assignment, the date of receipt by the Board of the resubmitted notice shall be entered in the Remarks Column.

1533 § 15. (1) *Finding Favourable with Respect to Nos. 1503, 1506 to 1508, and 1509 to 1512 as Appropriate.*

1534 (2) The assignment shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d.

1535 (3) However, should the examination show that the interference and the percentage of time during which it is likely to occur have values slightly greater than those used for assessing the probability of harmful interference (extreme propagation conditions, abnormal atmospheric humidity, etc.), a remark shall be included in the Master Register to show that there may be a slight risk of harmful interference and hence additional precautions must be taken in the use of the assignment to avoid harmful interference to assignments already recorded in the Master Register.

- 1536** (4) In addition to the examination of a frequency assignment to an earth station under Nos. **1509** to **1512**, if there is continuing disagreement, the Board shall examine that frequency assignment with respect to the probability of harmful interference caused to, or caused by, those terrestrial stations for which assignments have been communicated to the Board in application of No. **1126** and are to be brought into use in the next three years.
- 1537** (5) Following the examination under No. **1536**, the Board shall, where appropriate:
- 1538** a) inform the administrations concerned of any unfavourable findings;
- 1539** b) enter a remark indicating such an unfavourable finding against the assignment to the earth station recorded in the Master Register;
- 1540** c) record the assignments to terrestrial stations in the Master Register with a remark indicating any unfavourable finding; the date of receipt of the information communicated under No. **1126** shall be entered in Column 2d.
- 1541** § 16. (1) *Finding Favourable with Respect to No. 1503 but Unfavourable with Respect to Nos. 1506 to 1508 or 1509 to 1512, as Appropriate.*
- 1542** (2) The notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding together with such suggestions as the Board is able to offer with a view to a satisfactory solution of the problem.
- 1543** (3) Should the notifying administration resubmit the notice with modifications which result, after re-examination, in a favourable finding by the Board with respect to Nos. **1506** to **1508** or **1509** to **1512**, as appropriate, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the original notice shall be entered in Column 2d. The date of receipt by the Board of the resubmitted notice shall be indicated in the Remarks Column.

- 1544** (4) Should the notifying administration resubmit the notice, either unchanged, or with modifications which decrease the probability of harmful interference, but not sufficiently to permit the provisions of No. **1543** to be applied, and should that administration insist upon reconsideration of the notice, but should the Board's finding remain unchanged, the assignment shall be recorded in the Master Register. However, this entry shall be made only if the Board is informed that the new assignment has been in use together with the frequency assignment to the station which was the basis for the unfavourable finding for at least four months without any complaint of harmful interference having been received, provided that the earlier assignment has been brought into use within the additional period mentioned in No. **1550**. The date of receipt by the Board of the original notice shall be entered in Column 2d. The date of receipt by the Board of the advice that no complaint of harmful interference has been received shall be indicated in the Remarks Column.
- 1545** § 17. (1) *Notices Relating to Radio Astronomy Stations.*
- 1546** (2) A notice relating to a radio astronomy station shall be examined by the Board with respect to No. **1503** only. Whatever the finding, the assignment shall be recorded in the Master Register with a date in Column 2c. The date of receipt by the Board of the notice shall be recorded in the Remarks Column.
- 1547** § 18. (1) *Change in the Basic Characteristics of Assignments Already Recorded in the Master Register.*
- 1548** (2) A notice of a change in the basic characteristics of an assignment already recorded, as specified in Appendix 3 (except the name of the station or the name of the locality in which it is situated or the date of bringing into use), shall be examined by the Board according to No. **1503**, and, where appropriate, Nos. **1504**, **1505**, **1506** to **1508** and **1509** to **1512**, and the provisions of Nos. **1515** to **1546** inclusive shall apply. Where the change should be recorded, the recorded assignment shall be amended according to the notice.

1549 (3) However, in the case of a change in the characteristics of an assignment which is in conformity with No. **1503**, should the Board reach a favourable finding with respect to Nos. **1504**, **1505**, **1506** to **1508** and **1509** to **1512**, where appropriate, or find that the changes do not increase the probability of harmful interference to assignments already recorded, the amended assignment shall retain the original date in Column 2d. The date of receipt by the Board of the notice relating to the change shall be entered in the Remarks Column.

1550 (4) The notified date of bringing into use of the first
Orb-88 assignment of a satellite network shall not be later than six years following the date of publication of the special section of the weekly circular referred to in No. **1044**. This notified date of bringing into use will be extended at the request of the notifying administration by no more than three years.

1551 § 19. In applying the provisions of this Section, any resubmitted notice which is received by the Board more than two years after the date of its return by the Board shall be considered as a new notice.

1552 § 20. (1) *Recording of Frequency Assignments Notified Before Being Brought into Use.*

1553 (2) If a frequency assignment notified in advance of bringing into use has received a favourable finding by the Board with respect to No. **1503** and, where appropriate, Nos. **1504**, **1505**, **1506** to **1508** and **1509** to **1512**, it shall be entered provisionally in the Master Register with a special symbol in the Remarks Column indicating the provisional nature of that entry.

1554 (3) Within thirty days after the date of bringing into use, either as originally notified or as modified in application of No. **1550**, the notifying administration shall confirm that the frequency assignment has been brought into use. When the Board is informed that the assignment has been brought into use, the special symbol shall be deleted from the Remarks Column.

1555 (4) If the Board does not receive this confirmation within the period referred to in No. **1554**, the entry concerned shall be cancelled. The Board shall consult the administration concerned before taking such action.

1556 (5) In the circumstances described in No. **1544**, and as long
Orb-88 as an assignment which received an unfavourable finding cannot be resubmitted with a statement relating to operation without interference, the notifying administration may ask the Board to enter the assignment provisionally in the Master Register, in which event a special symbol to denote the provisional nature of the entry shall be entered in the Remarks Column. The Board shall delete this symbol when it receives from the notifying administration, at the end of the period in No. **1544**, the information relating to the absence of complaint of harmful interference.

Section III. Recording of Findings in the Master Register

1557 § 21. In any case where a frequency assignment is recorded in the Master Register, the finding reached by the Board shall be indicated by a symbol in the appropriate column. In addition, a remark indicating the reasons for any unfavourable finding shall be inserted in the Remarks Column.

Section IV. Categories of Frequency Assignments

1558 § 22. (1) The date in Column 2c shall be the date of putting into use notified by the administration concerned. It is given for information only.

1559 (2) If harmful interference is actually caused to the reception of any space radiocommunication station whose frequency assignment has been recorded in the Master Register as a result of a favourable finding with respect to Nos. **1503**, **1504**, **1505**, **1506** to **1508** and **1509** to **1512**, as appropriate, by the use of a frequency assignment to a space radiocommunication station subsequently recorded in the Master Register in accordance with the provisions of No. **1544**, the station using the latter frequency assignment must, upon receipt of advice thereof, immediately eliminate this harmful interference.

- 1560** (3) If harmful interference to the reception of any station whose assignment is in accordance with Nos. **1240**, **1352** or **1503**, as appropriate, is actually caused by the use of a frequency assignment which is not in conformity with No. **1503**, the station using the latter frequency assignment must, upon receipt of advice thereof, immediately eliminate this harmful interference.

Section V. Review of Findings

- 1561** § 23. (1) The review of a finding by the Board may be undertaken:
- 1562** a) at the request of the notifying administration;
 - 1563** b) at the request of any other administration interested in the question, but only on the grounds of actual harmful interference;
 - 1564** c) on the initiative of the Board itself when it considers this is justified.
- 1565** (2) The Board, in the light of all the data at its disposal, shall review the matter, taking into account No. **1503** and, where appropriate, Nos. **1504**, **1505**, **1506** to **1508** and **1509** to **1512**, and shall render an appropriate finding, informing the notifying administration prior either to the publication of its finding or to any recording action.
- 1566** § 24. (1) After actual use for a reasonable period of an assignment which has been entered in the Master Register on the insistence of the notifying administration, following an unfavourable finding with respect to Nos. **1506** to **1508** or **1509** to **1512**, this administration may request the Board to review the finding. Thereupon, the Board shall review the matter, having first consulted the administrations concerned.
- 1567** (2) If the finding of the Board is then favourable it shall enter in the Master Register the changes that are required so that the entry shall appear in the future as if the original finding had been favourable.

- 1568** (3) If the finding with regard to the probability of harmful interference remains unfavourable, no change shall be made in the original entry.

**Section VI. Modification, Cancellation and Review of Entries
in the Master Register**

- 1569** § 25. The Board shall, at intervals not exceeding two years, request confirmation from the notifying administration that its assignment has been and will continue to be in regular use in accordance with its recorded characteristics.
- 1570** § 26. (1) Where the use of a recorded assignment to a space station is suspended for a period of eighteen months, the notifying administration shall, within this eighteen-month period, inform the Board of the date on which such use was suspended and of the date on which the assignment is to be brought back into regular use.
- 1571** (2) Whenever it appears to the Board, whether or not as a result of action under No. **1570**, that a recorded assignment to a space station has not been in regular use for more than eighteen months, the Board shall inquire of the notifying administration as to when the assignment is to be brought back into regular use.
- 1572** (3) If no reply is received within six months of action by the Board under No. **1571**, or if the reply does not confirm that the assignment to a space station is to be brought back into regular use within this six-month limit, a mark shall be applied against the entry in the Master Register. Thereafter, the assignment shall be treated in accordance with No. **1513** as one which has been established as having been out of regular use for two years.
- 1573** § 27. In case of permanent discontinuance of the use of any recorded frequency assignment, the notifying administration shall inform the Board within three months of such discontinuance, whereupon the entry shall be removed from the Master Register.

- 1574** § 28. Whenever it appears to the Board from the information available that a recorded assignment has not been brought into regular operation in accordance with the notified basic characteristics, or is not being used in accordance with those basic characteristics, the Board shall consult the notifying administration and, subject to its agreement, shall either cancel, or suitably modify, or retain the basic characteristics of the entry.
- 1575** § 29. If, in connection with an inquiry by the Board under No. **1574**, the notifying administration has failed to supply the Board within three months from the date of the enquiry with the necessary or pertinent information, the Board shall make suitable entries in the Remarks Column of the Master Register to indicate the situation.

Section VII. Studies and Recommendations

- 1576** § 30. (1) If it is requested by any administration, the Board, using such means at its disposal as are appropriate in the circumstances, shall conduct a study of cases of alleged contravention or non-observance of these Regulations, or of harmful interference.
- 1577** (2) The Board shall thereupon prepare and forward to the administrations concerned a report containing its findings and recommendations for the solution of the problem.
- 1578** (3) On receiving the Board's recommendations for the solution of the problem, an administration shall promptly acknowledge the receipt by telegram and shall subsequently indicate the action it intends to take. In cases when the Board's suggestions or recommendations are unacceptable to the administrations concerned, further efforts should be made by the Board to find an acceptable solution to the problem.

- 1579** § 31. In a case where, as a result of a study, the Board submits to one or more administrations suggestions or recommendations for the solution of a problem, and where no answer has been received from one or more of these administrations within a period of four months, the Board shall consider that the suggestions or recommendations concerned are unacceptable to the administrations which did not answer. If it was the requesting administration which failed to answer within this period, the Board shall close the study.

Section VIII. Miscellaneous Provisions

- 1580** § 32. (1) If it is requested by any administration, particularly by an administration of a country in need of special assistance, the Board, using such means at its disposal as are appropriate in the circumstances, shall render any assistance of a technical nature in the application of the provisions of this Article.

- 1581** (2) In making a request to the Board under No. **1580**, the administration shall furnish the Board with the necessary information.

- 1582** § 33. The Technical Standards of the Board shall be based on the relevant provisions of these Regulations and the Appendices thereto, the decisions of administrative conferences of the Union, as appropriate, the Recommendations of the CCIR, the state of the radio art and the development of new transmission techniques, account being taken of exceptional propagation conditions which may prevail in certain regions (for example, particularly pronounced ducting).

- 1583** § 34. The Board shall inform all administrations of its findings and reasons therefor, together with all changes made to the Master Register, through its weekly circular. Such information shall be published within forty-five days of the date of publication

of the complete notice in the weekly circular referred to in No. 1235. When the Board is not in a position to comply with the time-limit referred to above it shall, as soon as possible, so inform the administration concerned giving the reasons therefor.

1584 § 35. In case a Member avails itself of the provisions of Article 50 of the Convention, the Board shall, on request, make its records available for such proceedings as are prescribed in the Convention for the settlement of international disputes.

1585
to NOT allocated.
1609

ARTICLE 14

**Supplementary Procedure to Be Applied in Cases Where a Footnote
in the Table of Frequency Allocations Requires an Agreement
with an Administration**

- 1610** § 1. (1) Before an administration notifies to the Board a frequency assignment in accordance with any footnote in the Table of Frequency Allocations which makes reference to this Article, it shall obtain the agreement of any other administration whose services may be affected. In the case of a footnote concerning a space radiocommunication service, this procedure may be initiated before or at the same time as the application of the provisions of Article 11.
- 1611** (2) The administration seeking such an agreement shall, sufficiently early before the planned date of putting the assignment into service, send to the Board:
- 1612** a) for terrestrial radiocommunication services, the basic characteristics of the planned assignment listed in the appropriate section of Appendix 1;
- 1613** b) for space radiocommunication services, the characteristics of the planned assignment listed in Appendix 4, or Appendix 3 when the latter are available ¹.
- 1614** (3) The administration seeking agreement may, when sending its information to the Board, also identify those other administrations that are believed to have services which may be affected.

1613.1 ¹ The information in Appendix 3 or 4 submitted to the Board under Article 11 may also be used for the purpose of this procedure. When the Appendix 4 information is submitted for an assignment to a geostationary-satellite network, the administration seeking agreement under this Article shall also submit the information required for the application of Appendix 29.

1615 § 2. (1) The Board shall publish the information sent under Nos. **1611** to **1614** in a special section of its weekly circular ¹ and shall also, when the weekly circular contains such information, so advise administrations by circular telegram.

1616 (2) The Board shall endeavour to identify administrations whose services may be affected, and shall include the names of those administrations it is able to identify in the special section of its weekly circular and in the circular telegram mentioned under No. **1615**.

1617 § 3. (1) Any administration, upon receipt of this information and believing that the planned assignment may affect its services operating in accordance with the Table of Frequency Allocations or planned to be so operated, shall, within four months of the date of the relevant weekly circular, so inform the administration requesting agreement and the Board.

1618 (2) Any administration not having commented within the period specified in No. **1617** shall be regarded as unaffected by the planned assignment.

1619 (3) Any administration responding under No. **1617** to a request for agreement shall, if possible at the same time, give at least the relevant basic characteristics of its stations whose services may be affected, and shall make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem. A copy of all this information shall simultaneously be sent to the Board.

1615.1 ¹ In the case of a space radiocommunication service, the administration submitting the information listed in Appendix 3 or 4 in accordance with the provisions of Article 11 may also ask the Board to apply this information in pursuance of this procedure and the Board shall indicate in the appropriate special section of its weekly circular that agreement under this Article is also sought.

1619A (4) When an administration intends to bring into use a
Orb-88 frequency assignment to a space radiocommunication station, the agreement of an administration having an existing or planned space radiocommunication station may be required with respect to the assignments of this administration:

1619B a) which are recorded in the Master Register, in
Orb-88 conformity with No. **1503**; *or*

1619C b) which are notified to the Board;
Orb-88

1619D c) for which information under No. **1042**¹ has been
Orb-88 received by the Board; *or*

1619E d) for which the procedure of this Article has been
Orb-88 initiated.

1620 § 4. The administration requesting agreement under Nos. **1611** to **1613** and the administration responding under No. **1617** shall together² make every possible effort to resolve the problem before the date of bringing into use of the planned assignment.

1621 § 5. Either administration may request from the other additional information which may be required to resolve the problem. A copy of such a request and of any information given in response shall be sent to the Board.

1619D.1 ¹ The administration having such an assignment is requested to
Orb-88 communicate as soon as possible the Appendix 3 information or, in the case of a geostationary-satellite network, any information in addition to that communicated in accordance with Appendix 4 which is necessary for the application of Appendix 29.

1620.1 ² In the absence of appropriate CCIR Recommendations or IFRB Technical Standards, the technical criteria to be used in such a case shall be agreed between the administrations concerned.

- 1622** § 6. Either administration may request the assistance of the Board in an attempt to resolve the problem.
- 1623** § 7. Following resolution of the problem, the administration which sought agreement shall inform the Board to that effect.
- 1624** § 8. An administration having sought agreement under Nos. **1611** to **1613** and having received no response under No. **1617** from any administration shall inform the Board thereof and shall then be regarded as having successfully completed the procedure of this Article.
- 1625** § 9. An administration having sought agreement under Nos. **1611** to **1613**, having received one or more responses under No. **1617** and having informed the Board under No. **1623** of the resolution of the problem, shall be regarded as having obtained agreement in accordance with the relevant footnote in the Table of Frequency Allocations.
- 1626** § 10. The Board, following receipt of advice under No. **1624** or **1625** as to the completion of this procedure, shall publish this information in the appropriate special section of the weekly circular.
- 1627** § 11. An administration seeking agreement or an administration with which agreement is sought or any other administration whose services might be affected may request the assistance of the Board in applying any of the steps of this procedure, particularly in:
- 1628** a) identifying administrations whose services might be affected;
- 1629** b) evaluating the levels of interference;
- 1630** c) defining, with the agreement of the administrations concerned, the technical criteria to be used ¹.

1630.1 ¹ In the absence of appropriate CCIR Recommendations or IFRB Technical Standards, the technical criteria to be used in such a case shall be agreed between the administrations concerned.

Mob-87

ARTICLE 14A

Mob-87

**Procedure to be Applied by Administrations
and the IFRB to Coordinate the Planned Use
of the Frequency 518 kHz for the Transmission by Coast Stations
of Navigational and Meteorological Warnings and Urgent Information
to Ships by Means of Automatic Narrow-Band
Direct-Printing Telegraphy (International NAVTEX System)**

1631
Mob-87

§ 1. (1) Before an administration notifies to the Board a frequency assignment to a coast station for the transmission of navigational and meteorological warnings and urgent information to ships by means of automatic narrow-band direct-printing telegraphy, it shall coordinate the assignment with any other administration with an assignment in the same frequency band which might be affected.

1632
Mob-87

(2) To this effect, the administration shall communicate to the Board, not earlier than one year before the proposed date of bringing the assignment into use, the information listed in Section A of Appendix 1 together with the following additional characteristics:

- a) the B1 character (transmitter coverage area identifier) to be used by the coast station;
- b) the regular transmission schedule assigned to the station;
- c) the duration of transmissions;
- d) the ground-wave coverage area of the transmission.

(3) The administration shall also indicate the results of any coordination ¹ already effected in relation with the projected use.

1632.1
Mob-87

¹ Administrations are strongly recommended to coordinate the above characteristics in accordance with the procedures of the International Maritime Organization (IMO).

1633 (4) In order to enable the procedure to be completed in
Mob-87 good time before notification under No. **1214**, the administrations should communicate the above information not later than six months before the proposed date of bringing the assignment into use.

1634 § 2. In cases where the Board finds that a basic characteristic
Mob-87 or any of the additional characteristics is missing, it shall return the request by airmail, stating the reason, unless the information not provided is immediately forthcoming in response to an enquiry of the Board.

1635 § 3. The Board shall examine the proposed use with respect
Mob-87 to assignments to stations of other services to which the band 517.5 - 518.5 kHz is allocated, notified under No. **1214** at an earlier date, and shall identify the administrations whose assignments are likely to be affected.

1636 § 4. The Board shall, within 45 days of the receipt of the
Mob-87 complete information, publish it in a special section of its weekly circular indicating any coordination already effected and the names of administrations identified in application of No. **1635**. The Board shall communicate a copy of this publication to the International Maritime Organization (IMO), the International Hydrographic Organization (IHO), and the World Meteorological Organization (WMO), requesting them to communicate to the administrations concerned, with a copy to the Board, any information which may assist in reaching agreement on coordination.

1637 § 5. On expiry of a period of four months from the date of
Mob-87 publication of the information in the special section, the administration responsible for the assignment should notify it to the Board in accordance with No. **1214**, indicating the names of administrations with which agreement has been reached and those which have signified their disagreement.

1638 § 6. Upon receipt of the notice, the Board shall request those
Mob-87 administrations named in the special section which have not communicated their agreement or disagreement with respect to the proposed use to signify within a period of 30 days their decision on the matter.

1639 § 7. An administration which does not reply to the Board's
Mob-87 request made under No. **1638** or fails to signify a decision on the matter shall be deemed to have undertaken:

1640 a) that no complaint will be made in respect of any
Mob-87 harmful interference which may be caused to its stations by the proposed use;

1641 b) that its stations will not cause harmful interference
Mob-87 to the proposed use.

1642 § 8. When examining the proposed use in accordance with
Mob-87 Article **12**, the Board shall apply the provisions of No. **1245**, except with respect to those assignments for which the administration responsible has signified its disagreement with respect to the proposed use.

1643 § 9. The Board shall examine the notified assignments in
Mob-87 accordance with No. **1241** on the basis of its technical standards and shall record them in accordance with the pertinent provisions of Article **12**. The recording shall contain symbols reflecting the result of the application of this procedure.

1644 § 10. The Board shall, at appropriate intervals, update and
Mob-87 publish the data referred to in No. **1637** in a special list in an appropriate format.

1645
 to NOT allocated.
1655

ARTICLE 15

Orb-85 **Coordination, Notification and Recording of Frequency Assignments to Stations of the Broadcasting-Satellite Service in the Frequency Bands 11.7 - 12.2 GHz (in Region 3), 12.2 - 12.7 GHz (in Region 2) and 11.7 - 12.5 GHz (in Region 1) and to the Other Services to Which these Bands Are Allocated, so far as their Relationship to the Broadcasting-Satellite Service in these Bands Is Concerned**

1656 The provisions and associated Plans for the broad-
Orb-85 casting-satellite service in the frequency bands 11.7 - 12.5 GHz (in Region 1), 12.2 - 12.7 GHz (in Region 2) and 11.7 - 12.2 GHz (in Region 3), as contained in Appendix **30 (Orb-85)** to the Radio Regulations, shall apply to the assignment and use of frequencies by stations of the broadcasting-satellite service in these bands and to the stations of other services to which these bands are allocated so far as their relationship to the broadcasting-satellite service in these bands is concerned. For the broadcasting-satellite service in Region 2, Resolution **42 (Orb-85)** is also applicable.

1657
to NOT allocated.
1667

ARTICLE 15A

Orb-88 Coordination, Notification and Recording of Frequency Assignments to Stations in the Fixed-Satellite Service (Earth-to-Space) in the Frequency Bands 14.5 - 14.8 GHz (in Regions 1 and 3), 17.3 - 18.1 GHz (in Regions 1 and 3) and 17.3 - 17.8 GHz (in Region 2) Providing Feeder Links for the Broadcasting-Satellite Service and also to Stations of Other Services to Which these Bands are Allocated, so far as their Relationship to the Fixed-Satellite Service (Earth-to-Space) in these Bands Is Concerned

1668 The provisions and associated Plans for feeder links
Orb-88 associated with the broadcasting-satellite service, utilizing the fixed-satellite service (Earth-to-space) in the frequency bands 14.5 - 14.8 GHz (in Regions 1 and 3), 17.3 - 18.1 GHz (in Regions 1 and 3) and 17.3 - 17.8 GHz (in Region 2), as contained in Appendix 30A (**Orb-88**), shall apply to the assignment and use by feeder links of frequencies in this band and to stations of other services to which these bands are allocated so far as the relationship of these other services to the fixed-satellite service (Earth-to-space) in these bands is concerned. For feeder links in the fixed-satellite service for the broadcasting-satellite service in Region 2, Resolution 42 (**Rev. Orb-88**) is also applicable.

1669
to
1681 NOT allocated.

ARTICLE 16

**Procedure for Bringing Up to Date the Frequency Allotment¹
Plan for Coast Radiotelephone Stations Operating in the
Exclusive Maritime Mobile Bands Between
4 000 kHz and 23 000 kHz ***

(Appendix 25)

1682 § 1. (1) Before notifying to the International Frequency Registration Board or bringing into use at any coast radiotelephone station a frequency assignment not covered by an allotment in the Frequency Allotment Plan contained in Appendix 25, an administration which

1683 a) intends to establish a coast radiotelephone station and has no allotment in the Plan, *or*

1684 b) intends to expand its coast radiotelephone service and requires an additional allotment,

shall send the information listed in Appendix 5 to the Board not earlier than two years in the case of No. 1683, or not earlier than six months in the case of No. 1684, before the projected date of bringing into service of the planned coast radiotelephone service but in any case not later than three months before that date.

1685 (2) The Board shall publish the information sent under Nos. 1682 to 1684 in a special section of the IFRB weekly circular together with such apparent incompatibilities between the proposed allotment which is the subject of the publication and any other existing or proposed allotments which the Board can identify. The Board shall also indicate any information of a technical nature and make such suggestions as it may be able to offer with a view to avoiding these incompatibilities.

A.16.1 ¹ See No. 18.

* *Note by the Secretary General:* The Mob-87 WARC, through Resolution 325 (Mob-87), extended the applicability of this Article up to 27 500 kHz

- 1686** (3) If it is requested by any administration, particularly by an administration of a country in need of special assistance, and if the circumstances appear to warrant, the Board, using such means at its disposal as are appropriate in the circumstances, shall render the following assistance:
- 1687** a) indication of a suitable channel or channels for the service projected by the administration before that administration submits the information for publication;
- 1688** b) carry out the procedure for which provision is made in No. **1690**;
- 1689** c) any other assistance of a technical nature for completion of the procedure in the present Article.
- 1690** § 2. (1) At the same time as sending the information listed in Appendix 5 to the Board for publication, an administration shall seek the agreement of the administrations having an allotment in the same channel as the proposed allotment. A copy of the relevant correspondence shall be sent to the Board.
- 1691** (2) Any administration which, upon examining the information published by the Board, considers that its existing services or services planned within the time-limits mentioned in Nos. **1682** to **1684** would be affected shall have the right to be brought into the procedure undertaken pursuant to No. **1690**.
- 1692** § 3. (1) An administration which receives a request under No. **1690** shall acknowledge receipt thereof immediately by telegram. If no acknowledgement is received within thirty days after the date of the IFRB weekly circular containing the information published under No. **1685**, the administration seeking agreement shall dispatch a telegram requesting acknowledgement, to which the receiving administration shall reply within a further period of fifteen days.

- 1693** (2) Upon receipt of the request under No. **1690**, an administration shall, having regard to the proposed date of bringing into use of the assignment(s) corresponding to the allotment for which agreement was requested, promptly examine the matter with regard to harmful interference which would be caused to the services rendered by its coast station(s):
- 1694** *a)* using a frequency assignment corresponding to an allotment appearing in the Plan; *or*
- 1695** *b)* to be brought into service in conformity with an allotment appearing in the Plan within the time-limit prescribed in No. **1720**; *or*
- 1696** *c)* to be brought into service within the time-limit prescribed in No. **1720**, in conformity with a proposed allotment for which the information has been submitted to the Board under Nos. **1682** to **1684** for publication under No. **1685**.
- 1697** (3) Any administration which receives a request under No. **1690** and which considers that the proposed use of a channel will not cause harmful interference to the services rendered by its coast stations as outlined in Nos. **1693** to **1696** shall, as soon as possible and not later than two months from the date of the relevant IFRB weekly circular, notify its agreement to the administration seeking agreement.
- 1698** (4) Any administration which receives a request under No. **1690** and which considers that the proposed use of a channel may cause harmful interference to the services rendered by its coast stations as outlined in Nos. **1693** to **1696** shall inform the administration concerned of the reasons for its disagreement as soon as possible and not later than two months from the date of the relevant IFRB weekly circular and shall furnish any information and suggestions with a view to reaching a satisfactory solution of the problem. The administration seeking agreement shall try, as far as possible, to adjust its requirements according to the comments received.

- 1699** (5) In a case where the administration seeking agreement has no allotment in the band concerned, the administration(s) with which agreement is sought shall, in consultation with the requesting administration, explore all means of meeting the requirement of the requesting administration.
- 1700** § 4. (1) An administration seeking agreement may request the Board to endeavour to obtain such agreement in those cases where:
- 1701** a) an administration to which a request has been sent under No. **1690** fails to acknowledge receipt of the request within forty-five days from the date of the IFRB weekly circular containing the pertinent information;
- 1702** b) an administration has acknowledged receipt under No. **1692** but fails to give a decision within two months from the date of the IFRB weekly circular containing the pertinent information;
- 1703** c) there is disagreement between the administration seeking agreement and an administration with which agreement is sought as to the sharing possibilities;
- 1704** d) it is not possible to reach agreement for any other reason.
- 1705** (2) Either the administration seeking agreement or an administration with which agreement is sought, or the Board, may request additional information which it may require in studying any problem relating to this agreement.
- 1706** (3) Where the Board receives a request under No. **1701**, it shall forthwith send a telegram to the administration concerned requesting immediate acknowledgement.

1707 (4) Where the Board receives an acknowledgement following its action under No. **1706**, or where the Board receives a request under No. **1702**, it shall forthwith send a telegram to the administration concerned requesting an early decision in the matter.

1708 (5) Where the Board receives a request under No. **1704**, it shall endeavour to obtain agreement to which reference is made in No. **1690**. Where the Board receives from an administration no acknowledgement to the request it made under the terms of No. **1690** for agreement within the period specified in No. **1692**, it shall act, in so far as this administration is concerned, in accordance with No. **1706**.

1709 (6) Where an administration fails to reply within fifteen days of the Board's telegram requesting an acknowledgement sent under No. **1706**, or fails to give a decision in the matter within thirty days of dispatch of the Board's telegram of request under No. **1707**, it shall be deemed that the administration with which agreement was sought has undertaken, once the projected allotment is included in the Plan:

1710 a) that no complaint will be made in respect of any harmful interference which may be caused to the services rendered by its coast radiotelephone stations by the use of assignments in accordance with the allotment for which agreement was requested; *and*

1711 b) that its existing or projected coast radiotelephone stations will not cause harmful interference to the use of assignments in conformity with the allotment for which agreement was requested.

1712 (7) The Board shall enter a remark in the Remarks Column of the Master Register for each assignment covered by the allotment in question, indicating that this assignment does not benefit from the provisions of No. **1416** of the present Regulations with respect to assignments of the administration seeking the agreement.

- 1713** (8) The Board shall examine the proposed allotment with respect to the probability of harmful interference which it may receive from an allotment in the Plan of the administration which failed to reply or which indicated disagreement without supplying the reasons; if the finding is favourable and where the application of the present procedure with respect to the other administrations concerned permits, the Board shall enter the proposed allotment in the Plan.
- 1714** (9) In the event of an unfavourable finding, the Board shall inform the administration concerned of the result of the examination; if the administration insists, and where the application of the present procedure with respect to the other administrations concerned permits, the Board shall enter the proposed allotment in the Plan.
- 1715** (10) Where the Board receives a request under No. **1703**, it shall assess the sharing possibilities and it shall inform the administrations concerned of the results obtained.
- 1716** (11) In the case of continuing disagreement, the Board shall examine the proposed allotment from the point of view of harmful interference which may be caused to the services rendered by the stations of the administration having declared its disagreement. In the case where the Board's finding is favourable and where the application of the present procedure with respect to the other administrations concerned permits, it shall enter the proposed allotment in the Plan.
- 1717** (12) If, after the examination under No. **1716**, the Board reaches an unfavourable finding, it shall then examine the proposed allotment from the point of view of harmful interference which may be caused to the services on all the various channels in the band. Should the Board reach an unfavourable finding in each case, it shall determine the channel which is the least affected and, if so requested by the administration seeking agreement, it shall enter the proposed allotment in this channel in the Plan.
- 1718** § 5. An administration seeking agreement for a proposed allotment shall inform the Board of the results of its consultations with the administrations concerned. When the Board finds that the procedure prescribed in this Article has been applied with respect to each administration concerned, the Board shall publish its finding in a special section of the IFRB weekly circular and, as the case may be, bring the Plan up to date.

- 1719 § 6. Notwithstanding the above provisions and if the circumstances justify, an administration may, in exceptional circumstances, notify to the Board for provisional entry in the Master Register an assignment which is not covered by an allotment in the Plan. That administration shall, however, begin forthwith the procedure prescribed in this Article.
- 1720 § 7. When, within twelve months from the date of the inclusion of the allotment in the Plan, the Board does not receive a notice of a first frequency assignment corresponding to this allotment, or where the first notified frequency assignment has not been brought into use within the time-limits prescribed in the present Regulations, before proceeding with the deletion of the allotment from the Plan, it shall consult with the administration concerned on the appropriateness of such a deletion and of publishing this information in connection with bringing the Plan up to date. However, in the case where the Board, in the light of a request from the administration concerned, finds that exceptional circumstances warrant an extension of this period, the extension shall in no case exceed six months, except in the case of an administration which has no coast station in service in which case the period may be extended to eighteen months.
- 1721 § 8. Any administration in whose name an allotment is shown in the Plan, and which has a need to replace this allotment by another allotment in the same frequency band with a view to improving its service, shall apply the procedure described in this Article. When that administration arrives at a positive result in applying this procedure, the Board, at its request, shall replace the existing allotment in the Plan by the proposed allotment.
- 1722 § 9. The Board shall maintain an up-to-date master copy of the Plan resulting from the application of this procedure. It shall prepare in a suitable form, for publication by the Secretary-General, the whole or part of the revised version of the Plan as and when the circumstances justify and in any case once annually.
- 1723 to NOT allocated.
1735
HFBC-87

ARTICLE 17

**HFBC-87 Planning and Procedures for the Bands
Allocated Exclusively to the Broadcasting Service
Between 5 950 kHz and 26 100 kHz**

HFBC-87 Section I. Introduction

1736 § 1. When applying the procedure in Section IV of this
HFBC-87 Article, all administrations are urged to comply with the principles
laid down in Section II of this Article to the maximum extent
possible.

HFBC-87 Section II. Planning Principles

1737 § 2. (1) The planning of the high frequency bands allocated to
HFBC-87 the broadcasting service shall be based on the principle of equal
rights of all countries, large or small, to equitable access to these
bands. In planning, an attempt shall also be made to achieve
efficient use of these frequency bands, account being taken of the
technical and economic constraints that may exist in certain cases.
On the basis of the foregoing, the following planning principles
shall be applied.

1738 (2) All the broadcasting requirements, current or future,
HFBC-87 formulated by the administrations, shall be taken into account and
be treated on an equitable basis, so as to guarantee the equality of
rights referred to in No. 1737, and to enable each administration to
provide a satisfactory service.

1739 (3) All broadcasting requirements, national ¹ and interna-
HFBC-87 tional, shall be treated on an equal basis, with due consideration of
the differences between these two kinds of broadcasting require-
ments.

1739.1 ¹ An HF broadcasting use is considered as being for the purposes of
HFBC-87 national coverage when the transmitting station and its associated required
service area are both located within the territory of the same country.

1740 (4) In the planning procedure, an attempt shall be made to
HFBC-87 ensure, as far as practicable, continuity of use of a frequency or of a frequency band. However, such continuity should not prevent equal and technically optimum treatment of all broadcasting requirements.

1741 (5) The periodical planning procedure shall be based solely
HFBC-87 on the broadcasting requirements expected to become operational during the planning period. It shall furthermore be flexible in order to take into account new broadcasting requirements and modifications to the existing broadcasting requirements.

1742 (6) The planning procedure shall be based on double-side-
HFBC-87 band emissions. Single-sideband emissions which administrations might wish to make may, however, be permitted in place of planned double-sideband emissions, provided that the level of interference caused to double-sideband emissions is not increased.

1743 (7) For efficient spectrum use, only one frequency should
HFBC-87 be used, whenever possible, to meet a given broadcasting requirement in a given required service area; in any case the number of frequencies used will be the minimum necessary to provide a specified quality of reception.

1744 (8) Those broadcasting requirements for which the agreed
HFBC-87 minimum usable field strength is not ensured at any point of the required service area, through lack of the requisite technical facilities, can obtain proportionally reduced protection against interference.

1745 (9) In the first stage of the equitable application of a new
HFBC-87 planning procedure, an attempt will be made to include the maximum number of submitted requirements achieving the desired quality level. The remaining requirements will be processed on the understanding that lower quality levels would be acceptable.

- 1746** (10) The planning method shall satisfy, on an equal basis, a
HFBC-87 minimum of the broadcasting requirements submitted by administrations with the desired performance. Special consideration shall be given to the requirements of administrations which, in the first instance, are unable to achieve this performance.

HFBC-87 **Section III. Planning System**

- 1747** § 3. The Planning System developed in accordance with the
HFBC-87 principles set out in Section II of this Article and the decisions of the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987), shall be improved and tested in accordance with the instructions contained in Resolution **511 (HFBC-87)** for adoption, if acceptable to a competent world administrative radio conference.

HFBC-87 **Section IV. Consultation Procedure**

- 1748** § 4. Periodically, administrations shall submit to the International Frequency Registration Board the projected seasonal schedules of their broadcasting stations in the bands allocated exclusively to the broadcasting service between 5 950 kHz and 26 100 kHz. These schedules shall cover each of the following seasonal propagation periods and shall be implemented at 0100 UTC on the first Sunday of the period concerned:

March Schedule	— March and April
May Schedule	— May, June, July and August
September Schedule	— September and October
November Schedule	— November, December, January and February.

- 1749** § 5. The closing dates for the receipt of schedules are set by
HFBC-87 the Board in order to permit the advance period to be reduced gradually to the minimum found practicable by the Board. Those assignments in a schedule the characteristics of which are not expected to change may be submitted up to a limit of one year in

advance. Each such assignment shall be confirmed by the closing date for the submission of the schedules for the respective seasonal periods. The Board shall take appropriate steps to send reminders to administrations in carrying out this procedure.

1750 § 6. Two or more administrations may submit coordinated schedules containing their agreed projected frequency usage.

1751 § 7. The frequencies shown in the schedules shall be frequencies that actually will be used for that particular seasonal period and their number should be the minimum necessary to provide satisfactory reception of the particular programme in each of the areas for which it is intended. Each administration should prepare its schedule from season to season by using to the maximum extent practicable the same frequencies in each band as were used in previous schedules.

1752 § 8. The schedules shall be submitted in the form prescribed in Appendix 2, which specifies the data to be furnished for each assignment.

1753 § 9. The frequencies included in the schedules shall be in conformity with No. **1240** of these Regulations.

**HFBC-87 Section V. Preliminary Examination and Preparation of the
Tentative High Frequency Broadcasting Schedule**

1754 § 10. (1) On receipt of the seasonal schedules, including confirmation in appropriate cases of the continuing validity of assignments included in preceding schedules, the Board shall incorporate the proposed frequency usage of all administrations into a combined schedule and make the appropriate preliminary examination required to prepare the "Tentative High Frequency Broadcasting Schedule" (hereafter called the *Tentative Schedule*) for the particular seasonal period. This Tentative Schedule shall include:

1755 a) all specific frequency assignments in cases where no alternatives were given by the administration concerned;

- 1756 b) the selections made by the Board in cases where alternatives were given by the administration concerned;
- 1757 c) frequencies suggested by the Board in respect of all services for which no specific frequency was included in the submitted schedule, such suggestions to be made with due overall consideration for No. 1759, for compatibility within the Tentative Schedule, and for possible changes to the projected frequency usage which might be desirable to achieve more equitable satisfaction of administrations' requirements;
- 1758 d) such apparent incompatibilities between frequency assignments which the Board can indicate within the time available.
- 1759 (2) At the request of administrations, particularly those of countries in need of special assistance and which have no suitable listings in the Master Register, the Board shall give special consideration to the requirements of those administrations in preparing the Tentative Schedule.
- 1760 (3) The Board shall begin the work outlined in Nos. 1754 to 1758 early enough for the Tentative Schedule to be issued to administrations not later than two months before the date when the particular seasonal period begins.

**HFBC-87 Section VI. Technical Examination and Revision
 of the Tentative Schedule**

- 1761 § 11. (1) The Board shall continue its technical examination of the Tentative Schedule with a view not only to identifying further incompatibilities between frequency assignments which become apparent in the technical examination and correcting them where possible, but also to improving the technical aspects of the Tentative Schedule by amendments to be agreed upon in consultation with the administrations concerned.

- 1762** (2) In preparing its recommendations to administrations, the Board shall take into account monitoring observations and all other available data. However, when actual frequency usage is apparently not in conformity with the assignments in a submitted schedule, the Board shall seek from the administration concerned confirmation of this information.
- 1763** (3) Administrations, having considered the Tentative Schedule together with such recommendations as may have been furnished by the Board, should notify, as soon as possible, preferably before the date of commencement of the seasonal period concerned, any amendments to the Tentative Schedule which are intended for implementation.
- 1764** (4) Changes in the assignments of broadcasting stations which are implemented after the date on which the seasonal period begins shall be notified to the Board as soon as they can be forecast.
- 1765** (5) For changes notified in accordance with Nos. **1763** and **1764**, the Board shall apply the same procedure as that specified in Nos. **1759**, **1761** and **1762**. Such revisions to the Tentative Schedule as result from the application of the procedure in this Section shall be published in the IFRB weekly circulars in order that administrations can keep up to date their copies of the Tentative Schedule.

HFBC-87

**Section VII. Publication of the High Frequency
Broadcasting Schedule**

- 1766** § 12. After the end of each seasonal period, the Board shall publish the High Frequency Broadcasting Schedule, which shall reflect the Tentative Schedule as amended by all the changes notified to the Board since the publication of the Tentative Schedule. This High Frequency Broadcasting Schedule shall indicate by appropriate symbols:
- 1767** a) those assignments which administrations found in practice to be unsatisfactory and so notified to the Board;

1768 b) those assignments not included in the Tentative
HFBC-87 Schedule which were taken into account by the
 Board in the examination under Section VI of this
 Article.

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HFBC-87

HFBC-87 **Section VIII. Miscellaneous Provisions**

1770 § 13. The technical standards used by the Board when
 applying the provisions of this Article should be based, not only
 on the factors listed in No. **1454**, but also on past experience in
 broadcasting planning and on the experience gained by the Board
 in the application of the provisions of this Article.

1771 § 14. With a view to the ultimate evolution of compatible
 technical plans for the frequency bands concerned, the Board shall
 take all necessary steps to carry out engineering studies on a
 long-term basis. For this purpose, the Board shall use all informa-
 tion made available to it on frequency usage in the application of
 the procedure prescribed in this Article. The Board shall also keep
 administrations informed of the progress and results of such
 studies at regular intervals.

1772 § 15. In applying the provisions of Article **22** of these Regula-
 tions, problems of harmful interference which may arise in fre-
 quency usage in the bands concerned shall be resolved by adminis-
 trations by exercising the utmost goodwill and mutual cooperation
 and by giving due consideration to all the relevant technical and
 operational factors involved.

1773 .
 to NOT allocated.
1797

CHAPTER V

Measures Against Interference.

Tests

ARTICLE 18

Interference

- 1798** § 1. Administrations shall cooperate in the detection and elimination of harmful interference, employing where appropriate the facilities described in Article **20** and the procedures detailed in Article **22**.

Section I. General Interference

- 1799** § 2. All stations are forbidden to carry out:
- 1800** *a)* unnecessary transmissions;
- 1801** *b)* the transmission of superfluous signals and correspondence;
- 1802** *c)* the transmission of false or misleading signals;
- 1803** *d)* the transmission of signals without identification (except as provided for in Article **25**).
- 1804** § 3. All stations shall radiate only as much power as is necessary to ensure a satisfactory service.
- 1805** § 4. In order to avoid interference:
- 1806** *a)* locations of transmitting stations and, where the nature of the service permits, locations of receiving stations shall be selected with particular care;

- 1807** *b)* radiation in and reception from unnecessary directions shall be minimized by taking the maximum practical advantage of the properties of directional antennae whenever the nature of the service permits;
- 1808** *c)* the choice and use of transmitters and receivers shall be in accordance with the provisions of Article 5;
- 1809** *d)* the conditions specified under No. 2612 shall be fulfilled.
- 1810** § 5. Special consideration shall be given to avoiding interference on distress and safety frequencies and those related to distress and safety identified in Article 38.
- 1811** § 6. The class of emission to be employed by a station should be such as to achieve minimum interference and to assure efficient spectrum utilization. In general this requires that in selecting the class of emission to meet these objectives every effort shall be made to minimize the bandwidth occupied, taking into account the operational and technical considerations of the service to be performed.
- 1812** § 7. The out-of-band emissions of transmitting stations should not cause harmful interference to services which operate in adjacent bands in accordance with these Regulations and which use receivers in conformity with Nos. 301, 309, 310, 311 and relevant CCIR Recommendations.
- 1813** § 8. If, while complying with the provisions of Article 5, a station causes harmful interference through its spurious emissions, special measures shall be taken to eliminate such interference.

**Section II. Interference from Electrical Apparatus
and Installations of any Kind Except Equipment Used
for Industrial, Scientific and Medical Applications**

- 1814** § 9. Administrations shall take all practicable and necessary steps to ensure that the operation of electrical apparatus or installations of any kind, including power and telecommunication distribution networks, but excluding equipment used for industrial, scientific and medical applications, does not cause harmful interference to a radiocommunication service and, in particular, to a radionavigation or any other safety service operating in accordance with the provisions of these Regulations ¹.

**Section III. Interference from Equipment Used for Industrial,
Scientific and Medical Applications**

- 1815** § 10. Administrations shall take all practicable and necessary steps to ensure that radiation from equipment used for industrial, scientific and medical applications is minimal and that, outside the bands designated for use by this equipment, radiation from such equipment is at a level that does not cause harmful interference to a radiocommunication service and, in particular, to a radionavigation or any other safety service operating in accordance with the provisions of these Regulations ¹.

Section IV. Special Cases of Interference

- 1816** § 11. Administrations authorizing the use of frequencies below 9 kHz shall ensure that no harmful interference is caused thereby to the services to which the bands above 9 kHz are allocated.

- 1817**
to NOT allocated.
1841

1814.1 } ¹ In this matter, administrations should be guided by the latest
1815.1 } relevant CCIR Recommendations.

ARTICLE 19

Tests

1842 § 1. (1) Before authorizing tests and experiments in any station, each administration, in order to avoid harmful interference, shall prescribe the taking of all possible precautions such as the choice of frequency and of time and the reduction or, in all cases where this is possible, the suppression of radiation. Any harmful interference resulting from tests and experiments shall be eliminated with the least possible delay.

1843 (2) For the identification of transmissions made during tests, adjustments or experiments, see Article 25.

1844 (3) In the aeronautical radionavigation service, it is undesirable, for safety reasons, to transmit the normal identification during emissions conducted to check or adjust equipment already in service. Unidentified emissions should however be restricted to a minimum.

1845 (4) Signals for testing and adjustment shall be chosen in such a manner that no confusion will arise with a signal, abbreviation, etc., having a special meaning defined by these Regulations or by the International Code of Signals.

1846 (5) For testing stations in the mobile service see Nos. **3663A**
Mob-87 and **5058** to **5060**.

1847
to NOT allocated.
1871

ARTICLE 20

International Monitoring

- 1872** § 1. To assist to the extent practicable in the implementation of these Regulations, in particular to help ensure efficient and economical use of the radio frequency spectrum and to help in the prompt elimination of harmful interference, administrations agree to continue the development of monitoring facilities and, to the extent practicable, to cooperate in the continued development of the international monitoring system.
- 1873** § 2. The international monitoring system comprises only those monitoring stations which have been so nominated by administrations in the information sent to the Secretary-General in accordance with No. **1879**. These stations may be operated by an administration or, in accordance with an authorization granted by the appropriate administration, by a public or private enterprise, by a common monitoring service established by two or more countries, or by an international organization.
- 1874** § 3. Administrations will, as far as they consider practicable, conduct such monitoring of both a general and a specific nature as may be required of them by the International Frequency Registration Board or by other administrations. In requesting monitoring observations, the Board and administrations should take into account the monitoring facilities set forth in the List of International Monitoring Stations (List VIII, see Article **26**), and should clearly specify both the purpose for which the observations are requested and the parameters of the requested monitoring work (including appropriate schedules). The results of such monitoring forwarded to other administrations may also be sent to the Board, if appropriate.

- 1875** § 4. Each administration or common monitoring service established by two or more countries, or international organizations participating in the international monitoring system, shall designate a centralizing office to which all requests for monitoring information shall be addressed and through which monitoring information will be forwarded to the Board or to centralizing offices of other administrations.
- 1876** § 5. Administrations agree that monitoring requests from international organizations not participating in the international monitoring system should be coordinated by the Board and, if appropriate, forwarded by it to administrations.
- 1877** § 6. However, these provisions shall not affect private monitoring arrangements made for special purposes by administrations, international organizations, or public or private enterprises.
- 1878** § 7. The technical standards recommended by the CCIR to be observed by monitoring stations shall be recognized by the Board as the optimum practicable technical standards for monitoring stations participating in the international monitoring system. However, to meet some needs for monitoring data, stations observing lower technical standards may participate in the international monitoring system at the discretion of their administrations.
- 1879** § 8. Administrations having determined whether the monitoring stations meet adequate technical standards, shall notify to the Secretary-General pertinent information on the centralizing office and on the stations they wish to have included in List VIII, clearly identifying those stations which may participate in the international monitoring system (see Article 26 and Appendix 9).
- 1880** § 9. (1) Results of measurements forwarded to the Board or other administrations shall indicate the estimated accuracy obtained at the time the measurements were made.

- 1881 (2) Where the results supplied by any monitoring station appear to be doubtful or insufficient for its purposes, the Board shall advise the administration or international organization concerned giving the appropriate details.
- 1882 § 10. When rapid action is required, communications between the Board and centralizing offices should be transmitted by the most expeditious means available.
- 1883 § 11. Administrations shall make every effort to arrange for monitoring observations (see Appendix 21) to be submitted to the Board as soon as possible.
- 1884 § 12. Centralizing offices may request the help of other centralizing offices in order to implement the provisions of this Article and of Article 22.
- 1885 § 13. The Board shall record the results supplied by the monitoring stations participating in the international monitoring system, and shall prepare periodically, for publication by the Secretary-General, summaries of the useful monitoring data received by it including a list of the stations contributing the data.
- 1886 § 14. When an administration, in supplying monitoring observations from one of its monitoring stations taking part in the international monitoring system, states to the Board that a clearly identified emission is not in conformity with these Regulations, the Board shall draw the attention of the administration concerned to those observations.
- 1887
to
1914 NOT allocated.

ARTICLE 21

Reports of Infringements

- 1915** § 1. Infringements of the Convention or Radio Regulations shall be reported to their respective administrations by the control organization, stations or inspectors detecting them. For this purpose they shall use forms similar to the specimen given in Appendix 22.
- 1916** § 2. Representations relating to any serious infringement committed by a station shall be made to the administration of the country having jurisdiction over the station, by the administrations which detect it.
- 1917** § 3. If an administration has information of an infringement of the Convention or Radio Regulations, committed by a station over which it may exercise authority, it shall ascertain the facts, fix the responsibility and take the necessary action.
- 1918**
to
1942 NOT allocated.

ARTICLE 22

Procedure in a Case of Harmful Interference

- 1943** § 1. It is essential that Members exercise the utmost goodwill and mutual assistance in the application of the provisions of Article 35 of the Convention and of this Article to the settlement of problems of harmful interference.
- 1944** § 2. In the settlement of these problems, due consideration shall be given to all factors involved, including the relevant technical and operating factors, such as: adjustment of frequencies, characteristics of transmitting and receiving antennae, time sharing, change of channels within multichannel transmissions.
- 1945** § 3. When a case of such harmful interference is reported by a receiving station, it shall give to the transmitting station whose service is being interfered with all possible information which will assist in determining the source and characteristics of the interference.
- 1946** § 4. Where practicable, and subject to agreement by administrations concerned, the case of harmful interference may be dealt with directly by their specially designated monitoring stations or by direct coordination between their operating organizations.
- 1947** § 5. For the purpose of this Article, the term "administration" may include the centralizing office designated by the administration, in accordance with No. 1875.
- 1948** § 6. If a case of harmful interference so justifies, the administration having jurisdiction over the receiving station experiencing the interference shall inform the administration having jurisdiction over the transmitting station whose service is being interfered with, giving all possible information.

- 1949** § 7. If further observations and measurements are necessary to determine the source and characteristics of and to establish the responsibility for the harmful interference, the administration having jurisdiction over the transmitting station whose service is being interfered with may seek the cooperation of other administrations, particularly of the administration having jurisdiction over the receiving station experiencing the interference, or of other organizations.
- 1950** § 8. Having determined the source and characteristics of the harmful interference, the administration having jurisdiction over the transmitting station whose service is being interfered with shall inform the administration having jurisdiction over the interfering station, giving all useful information in order that this administration may take such steps as may be necessary to eliminate the interference.
- 1951** § 9. When a safety service suffers harmful interference the administration having jurisdiction over the receiving station experiencing the interference may also approach directly the administration having jurisdiction over the interfering station. The same procedure may also be followed in other cases with the prior approval of the administration having jurisdiction over the transmitting station whose service is being interfered with.
- 1952** § 10. An administration receiving a communication to the effect that one of its stations is causing harmful interference to a safety service shall promptly investigate the matter and take any necessary remedial action.
- 1953** § 11. When the service rendered by an earth station suffers harmful interference, the administration having jurisdiction over the receiving station experiencing such interference may also approach directly the administration having jurisdiction over the interfering station.
- 1954** § 12. On being informed that a station over which it has jurisdiction is believed to have been the cause of harmful interference, an administration shall, as soon as possible, acknowledge receipt of that information by telegram. Such acknowledgement shall not constitute an acceptance of responsibility.

- 1955** § 13. When cases of harmful interference occur as a result of emissions from space stations, the administrations having jurisdiction over these interfering stations shall, upon request from the administration having jurisdiction over the station experiencing the interference, furnish current ephemeral data necessary to allow determination of the positions of the space stations when not otherwise known.
- 1956** § 14. In cases of harmful interference where rapid action is required, communications between administrations shall be transmitted by the quickest means available and, subject to prior authorisation by the administrations concerned in such cases, information may be exchanged directly between specially designated stations of the international monitoring system.
- 1957** § 15. Recognizing that transmissions on the distress and safety frequencies (see Article 38) require absolute international protection and that the elimination of harmful interference to such transmissions is imperative, administrations undertake to act immediately when their attention is drawn to any such harmful interference.
- 1958** § 16. Full particulars relating to harmful interference shall, whenever possible, be given in the form indicated in Appendix 23.
- 1959** § 17. If the harmful interference persists in spite of the action taken in accordance with the procedures outlined above, the administration having jurisdiction over the transmitting station whose service is being interfered with may address to the administration having jurisdiction over the interfering station a report of irregularity or infraction in accordance with the provisions of Article 21.
- 1960** § 18. If there is a specialized international organization for a particular service, reports of irregularities and of infractions relating to harmful interference caused or suffered by stations in this service may be addressed to such organization at the same time as to the administration concerned.
- 1961** § 19. (1) If it is considered necessary, and particularly if the steps taken in accordance with the procedures described above have not produced satisfactory results, the administration concerned shall forward details of the case to the International Frequency Registration Board for its information.

1962 (2) In such a case, the administration concerned may also request the Board to act in accordance with the provisions of Sections VII and VIII of Article 12 and Sections VII and VIII of Article 13; but it shall then supply the Board with the full facts of the case, including all the technical and operational details and copies of the correspondence.

1963 § 20. (1) In the case where an administration has difficulty in identifying a source of harmful interference and urgently wishes to seek the assistance of the Board, in a case affecting an assignment selected by the Board in response to a request under No. 1218, it shall promptly inform the Board.

1964 (2) On receipt of this information, the Board shall immediately request the cooperation of appropriate administrations or specially designated stations of the international monitoring system that may be able to help in identifying the source of harmful interference.

1965 (3) The Board shall consolidate all reports received in response to requests under No. 1964 and, using such other information as it has available, shall promptly attempt to identify the source of harmful interference.

1966 (4) The Board shall thereafter forward its conclusions and recommendations by telegram to the administration reporting the case of harmful interference. These shall also be forwarded by telegram to the administration believed to be responsible for the source of harmful interference, together with a request for prompt action.

1967
to
1991 NOT allocated.

CHAPTER VI

Administrative Provisions for Stations

ARTICLE 23

Secrecy

- 1992** In the application of the appropriate provisions of the Convention, administrations bind themselves to take the necessary measures to prohibit and prevent:
- 1993** *a)* the unauthorized interception of radiocommunications not intended for the general use of the public;
- 1994** *b)* the divulgence of the contents, simple disclosure of the existence, publication or any use whatever, without authorization of information of any nature whatever obtained by the interception of the radio-communications mentioned in No. **1993**.
- 1995**
to
2019 NOT allocated.

ARTICLE 24

Licences

- 2020** § 1. (1) No transmitting station may be established or operated by a private person or by any enterprise without a licence issued in an appropriate form and in conformity with the provisions of these Regulations by the government of the country to which the station in question is subject. (However, see Nos. **2021**, **2027** and **2030**.)
- 2021** (2) However, the government of a country may conclude with the government of one or more neighbouring countries a special agreement concerning one or several stations of its broadcasting service or of its land mobile services, operating on frequencies above 41 MHz, situated in the territory of a neighbouring country and intended to improve national coverage. This agreement, which shall be compatible with the provisions of the present Regulations as well as of those regional agreements to which the countries concerned are signatories, may allow exceptions to the provisions of No. **2020** and shall be communicated to the Secretary-General in order that it may be brought to the notice of administrations for their information.
- 2022** (3) Mobile stations which are registered in a territory or group of territories which does not have full responsibility for its international relations may be considered, in so far as the issue of licences is concerned, as subject to the authority of that territory or group of territories.
- 2023** § 2. The holder of a licence is required to preserve the secrecy of telecommunications, as provided in the relevant provisions of the Convention. Moreover, the licence shall mention, specifically or by reference, that if the station includes a receiver, the interception of radiocommunication correspondence, other than that which the station is authorized to receive, is forbidden, and that in the case where such correspondence is involuntarily received, it shall not be reproduced, nor communicated to third parties, nor used for any purpose, and even its existence shall not be disclosed.

2024 § 3. To facilitate the verification of licences issued to mobile
Mob-87 stations and mobile earth stations, a translation of the text in one of the working languages of the Union shall be added, when necessary, to the text written in the national language.

2025 § 4. (1) The government which issues a licence to a mobile
Mob-87 station or a mobile earth station shall indicate therein in clear form the particulars of the station, including its name, call sign and, where appropriate, the public correspondence category, as well as the general characteristics of the installation.

2026 (2) For land mobile stations, including stations consisting only of one or more receivers, a clause shall be included in the licence, specifically or by reference, under which the operation of these stations shall be forbidden in countries other than the country in which the licence is issued, except as may be provided by special agreement between the governments of the countries concerned.

2027 § 5. (1) In the case of a new registration of a ship or aircraft in
Mob-87 circumstances where delay is likely to occur in the issue of a licence by the country in which it is to be registered, the administration of the country from which the mobile station or mobile earth station wishes to make its voyage or flight may, at the request of the operating company, issue a certificate to the effect that the station complies with these Regulations. This certificate, drawn up in a form determined by the issuing administration, shall give the particulars mentioned in No. **2025** and shall be valid only for the duration of the voyage or flight to the country in which the registration of the ship or aircraft will be effected, or for a period of three months, whichever is less.

2028 (2) The administration issuing the certificate shall inform the administration responsible for issuing the licence of the action taken.

2029 (3) The holder of the certificate shall comply with the provisions of these Regulations applicable to licence holders.

2030 § 6. In the case of hire, lease or interchange of aircraft, the administration having authority over the aircraft operator receiving an aircraft under such an arrangement may, by agreement with the administration of the country in which the aircraft is registered, issue a licence in conformity with that specified in No. **2025** as a temporary substitute for the original licence.

2031
to NOT allocated.
2054

ARTICLE 25

Identification of Stations**Section I. General Provisions**

2055 § 1. All transmissions shall be capable of being identified either by identification signals or by other means ¹.

2056 § 2. (1) All transmissions with false or misleading identification are prohibited.

2057 (2) Where practicable and in appropriate services, identification signals should be automatically transmitted in accordance with relevant CCIR Recommendations.

2058 (3) All transmissions in the following services should, except as provided in Nos. **2066** to **2068**, carry identification signals:

- 2059** a) amateur service;
- 2060** b) broadcasting service;
- 2061** c) fixed service in the bands below 28 000 kHz;
- 2062** d) mobile service;
- 2063** e) standard frequency and time signal service.

2064 (4) All operational transmissions by radiobeacons shall carry identification signals. However, it is recognized that, for radiobeacons and for certain other radionavigation services that normally carry identification signals, during periods of malfunction or other non-operational service the deliberate removal of identification signals is an agreed means of warning users that the transmissions cannot safely be used for navigational purposes.

2055.1

¹ In the present state of the technique, it is recognized nevertheless that the transmission of identifying signals for certain radio systems (e.g. radiodetermination, radio relay systems and space systems) is not always possible.

- 2064A** (4A) All transmissions by satellite emergency position-
Mob-87 indicating radiobeacons (EPIRBs) operating in the band 406-406.1 MHz or the band 1 645.5 - 1 646.5 MHz, or by EPIRBs using digital selective calling techniques, shall carry identification signals.
- 2065** (5) When identification signals are transmitted they shall comply with the provisions of this Article.
- 2066** (6) However, the requirements for certain transmissions to carry identification signals need not apply to:
- 2067** a) survival craft stations when transmitting distress signals automatically;
- 2068** b) emergency position-indicating radiobeacons (except
Mob-87 for those in No. **2064A**).
- 2069** § 3. In transmissions carrying identification signals a station
Mob-87 shall be identified by a call sign, by a maritime mobile service identity in accordance with Appendix 43 or by other recognized means of identification which may be one or more of the following: name of station, location of station, operating agency, official registration mark, flight identification number, selective call number or signal, selective call identification number or signal, characteristic signal, characteristic of emission or other clearly distinguishing features readily recognized internationally.
- 2070** § 4. For transmissions carrying identification signals, in order that stations may be readily identified, each station shall transmit its identification as frequently as practicable during the course of transmissions, including those made for tests, adjustments or experiments. During such transmissions, however, identification signals shall be transmitted at least hourly, preferably within the period from five minutes before to five minutes after the hour (UTC) unless to do so would cause unreasonable interruption of traffic, in which case identification shall be given at the beginning and end of transmissions.

2071 § 5. Identification signals shall wherever practicable be in one of the following forms:

2072 a) speech, using simple amplitude or frequency modulation;

2073 b) international Morse code transmitted at manual speed;

2074 c) a telegraph code compatible with conventional printing equipment;

2075 d) any other form recommended by the CCIR.

2076 § 6. To the extent possible the identification signal should be transmitted in accordance with relevant CCIR Recommendations.

2077 § 7. Administrations should ensure that wherever practicable superimposed identification methods be employed in accordance with CCIR Recommendations.

2078 § 8. When a number of stations work simultaneously in a common circuit, either as relay stations, or in parallel on different frequencies, each station shall, as far as practicable, transmit its own identification or those of all the stations concerned.

2079 § 9. Administrations shall ensure, except in the cases mentioned in Nos. **2066** to **2068**, that all transmissions not carrying identification signals can be identified by other means when they are capable of causing harmful interference to the services of another administration operating in accordance with these Regulations.

2080 § 10. Administrations shall, having regard to the provisions of these Regulations relating to the notification of assignments for recording in the Master Register, adopt their own measures to ensure compliance with the provisions of No. **2079**.

2081 § 11. Each Member reserves the right to establish its own measures for identifying its stations used for national defence. However, it shall use, as far as possible, call signs recognizable as such, and containing the distinctive characters of its nationality.

**Section II. Allocation of International Series
and Assignment of Call Signs**

- 2082** § 12. (1) All stations open to the international public correspondence service, all amateur stations, and other stations which are capable of causing harmful interference beyond the boundaries of the country to which they belong, shall have call signs from the international series allocated to each country as given in the Table of Allocation of International Call Sign Series in Appendix 42.
- 2083** (2) As the need arises, ship stations and ship earth stations
Mob-87 to which the provisions of Chapter XI apply, and coast stations or coast earth stations capable of communicating with such ships, shall have assigned to them maritime mobile service identities in accordance with Appendix 43.
- 2084** (3) It is not compulsory to assign call signs from the international series to stations identified by maritime mobile service identities or which are easily identified by other means (see No. 2069) and whose signals of identification or characteristics of emission are published in international documents.
- 2085** § 13. Should the available call sign series in Appendix 42 be exhausted, new call sign series may be allocated according to the principles set out in Resolution 13 relating to the formation of call signs and the allocation of new international series.
- 2086** § 14. Between administrative radio conferences, the Secretary-General is authorized to deal with questions relating to changes in the allocation of series of call signs, on a provisional basis, and subject to confirmation by the following conference (see also No. 2085).

2087 § 15. The Secretary-General shall be responsible for allocating
Mob-87 maritime identification digits to countries¹ not included in the
 Table of Maritime Identification Digits (see Appendix 43).

2087A § 15A. The Secretary-General shall be responsible for allocating
Mob-87 additional maritime identification digits to countries¹.

2088 § 16. The Secretary-General shall be responsible for supplying
 series of selective call numbers or signals (see Nos. 2143 to 2146) at
 the request of the administrations concerned.

2089 § 17. (1) Each country shall choose the call signs and, if the
 selective calling system used is in accordance with Appendix 39,
 the ship station selective call number and the coast station identifi-
 cation numbers of its stations from the international series allo-
 cated or supplied to it; and shall, in accordance with Article 26,
 notify this information to the Secretary-General together with the
 information which is to appear in Lists I, II, IV, V, VI and VIII A.
 These notifications do not include call signs assigned to amateur
 and experimental stations.

2090 (2) Each country shall choose the maritime mobile service
 identities of its stations from the maritime identification digits
 allocated to it and notify this information to the Secretary-
 General for inclusion in the relevant lists, as provided for in
 Article 26.

2087.1 . SUP
Mob-87

2087.2 }
2087A.1 }
Mob-83 } in No. 2246.

¹ The word "country" is used with the meaning attributed to it

- 2091** (3) The Secretary-General shall ensure that the same call sign, the same maritime mobile service identity, the same selective call number or the same identification number is not assigned more than once and that call signs which might be confused with distress signals, or with other signals of the same nature, are not assigned.
- 2092** § 18. (1) When a fixed station uses more than one frequency in the international service, each frequency may be identified by a separate call sign used solely for this frequency.
- 2093** (2) When a broadcasting station uses more than one frequency in the international service, each frequency may be identified by a separate call sign used solely for this frequency or by some other appropriate means, such as announcing the name of the place and frequency used.
- 2094** (3) When a land station uses more than one frequency, each frequency may, if desired, be identified by a separate call sign.
- 2095** (4) Where practicable, coast stations should use a common call sign for each frequency series ¹.

Section III. Formation of Call Signs

- 2096** § 19. (1) The twenty-six letters of the alphabet, as well as digits in the cases specified below, may be used to form call signs. Accented letters are excluded.

2095.1 ¹ By "frequency series" is meant a group of frequencies each of which belongs to one of the different bands between 4 000 kHz and 27 500 kHz that are allocated exclusively to the maritime mobile service.

2097 (2) However, the following combinations shall not be used as call signs:

2098 a) combinations which might be confused with distress signals or with other signals of a similar nature;

2099 b) combinations reserved for the abbreviations to be used in the radiocommunication services (see Appendices 13 and 14);

2100 c) for amateur stations, combinations commencing with a digit when the second character is the letter O or the letter I.

2101 § 20. Call signs in the international series are formed as indicated in Nos. **2102** to **2122**. The first two characters shall be two letters or a letter followed by a digit or a digit followed by a letter. The first two characters or in certain cases the first character of a call sign constitute the nationality identification ¹.

2102 *Land and fixed stations*

2103 § 21. (1) — two characters and one letter, *or*
— two characters and one letter followed by not more than three digits (other than the digits 0 and 1 in cases where they immediately follow a letter).

2104 (2) However, it is recommended that, as far as possible, the call signs of fixed stations consist of:

— two characters and one letter followed by two digits (other than the digits 0 and 1 in cases where they immediately follow a letter).

2101.1
Mob-87

¹ For call sign series beginning with B, F, G, I, K, M, N, R, U and W, only the first character is required for nationality identification. In the cases of half series, the first three characters are required for nationality identification.

2105 *Ship stations*

- 2106** § 22. (1) — two characters and two letters, *or*
 — two characters, two letters and one digit (other than
 the digits 0 or 1).

2107 (2) However, ship stations employing only radiotelephony
may also use a call sign consisting of:

- two characters (provided that the second is a letter)
 followed by four digits (other than the digits 0 or 1
 in cases where they immediately follow a letter), *or*
- two characters and one letter followed by four
 digits (other than the digits 0 or 1 in cases where
 they immediately follow a letter).

2108 *Aircraft stations*

- 2109** § 23. — two characters and three letters.

2110 *Ship's survival craft stations*

- 2111** § 24. — the call sign of the parent ship followed by two
 digits (other than the digits 0 or 1 in cases where
 they immediately follow a letter).

2112 *Emergency position-indicating radiobeacon stations*

- 2113** § 25. — the Morse letter B and/or the call sign of the parent
 ship to which the radiobeacon belongs.

2114 *Aircraft survival craft stations*

- 2115** § 26. — the complete call sign of the parent aircraft (see
 No. **2109**), followed by a single digit other than 0
 or 1.

2116 *Land mobile stations*

- 2117** § 27. — two characters (provided that the second is a letter) followed by four digits (other than the digits 0 or 1 in cases where they immediately follow a letter), *or*
- two characters and one or two letters followed by four digits (other than the digits 0 or 1 in cases where they immediately follow a letter).

2118 *Amateur and experimental stations*

- 2119** § 28. (1) — one character (see No. **2101.1**) and a single digit (other than 0 or 1), followed by a group of not more than three letters, *or*
- two characters and a single digit (other than 0 or 1), followed by a group of not more than three letters.
- 2120** (2) However, the prohibition of the use of the digits 0 and 1 does not apply to amateur stations.

2121 *Stations in the space service*

- 2122** § 29. When call signs for stations in the space service are employed, it is recommended that they consist of:
- two characters followed by two or three digits (other than the digits 0 and 1 in cases where they immediately follow a letter).

Section IV. Identification of Stations Using Radiotelephony

- 2123** § 30. Stations using radiotelephony shall be identified as indicated in Nos. **2124** to **2133**.

2124 § 31. (1) *Coast stations*

- a call sign (see No. **2103**); *or*
- the geographical name of the place as it appears in the List of Coast Stations, followed preferably by the word RADIO or by any other appropriate indication.

2125

(2) *Ship stations*

- a call sign (see Nos. **2106** and **2107**); *or*
- the official name of the ship preceded, if necessary, by the name of the owner on condition that there is no possible confusion with distress, urgency and safety signals; *or*
- its selective call number or signal.

2126

(3) *Ship's survival craft stations*

- a call sign (see No. **2111**); *or*
- a signal of identification consisting of the name of the parent ship followed by two digits.

2127

(4) *Emergency position-indicating radiobeacon stations*

When speech transmission is used (see No. **3265**):

- the name and/or the call sign of the parent ship to which the radiobeacon belongs.

2128

§ 32. (1) *Aeronautical stations*

- the name of the airport or geographical name of the place followed, if necessary, by a suitable word indicating the function of the station.

2129

(2) *Aircraft stations*

- a call sign (see No. **2109**), which may be preceded by a word designating the owner or the type of aircraft; *or*
- a combination of characters corresponding to the official registration mark assigned to the aircraft; *or*
- a word designating the airline, followed by the flight identification number.

- 2130** (3) In the exclusive aeronautical mobile frequency bands, aircraft stations using radiotelephony may use other methods of identification, after special agreement between governments, and on condition that they are internationally known.
- 2131** (4) *Aircraft survival craft stations*
- a call sign (see No. **2115**).
- 2132** § 33. (1) *Base stations*
- a call sign (see No. **2103**); *or*
 - the geographical name of the place followed, if necessary, by any other appropriate indication.
- 2133** (2) *Land mobile stations*
- a call sign (see No. **2117**); *or*
 - the identity of the vehicle or any other appropriate indication.

Section V. Selective Call Numbers in the Maritime Mobile Service

- 2134** § 34. When stations of the maritime mobile service use selective calling devices in accordance with Appendices **38** and **39**, their call numbers shall be assigned by the responsible administrations in accordance with the provisions below.
- 2135** *Formation of ship station selective call numbers and coast station identification numbers*
- 2136** § 35. (1) The ten digits from 0 to 9 inclusive shall be used to form selective call numbers.

- 2137** (2) However, combinations of numbers commencing with the digits 00 (zero, zero) shall not be used when forming the identification numbers for coast stations.
- 2138** (3) Ship station selective call numbers and coast station identification numbers in the series are formed as indicated in Nos. **2139**, **2140** and **2141**.
- 2139** (4) *Coast station identification numbers*
- four digits (see No. **2137**).
- 2140** (5) *Ship station selective call numbers*
- five digits.
- 2141** (6) *Predetermined groups of ship stations*
- five digits consisting of:
 - the same digit repeated five times; or
 - two different digits repeated alternately.
- 2142** *Assignment of ship station selective call numbers and coast station identification numbers*
- 2143** § 36. (1) In cases where selective call numbers for ship stations and identification numbers for coast stations are required for use in the maritime mobile service and the selective calling system is in accordance with Appendix **39**, the selective call numbers and identification numbers shall be supplied by the Secretary-General on request. Upon notification by an administration of the introduction of selective calling for use in the maritime mobile service:
- 2144** a) selective call numbers for ships will be supplied as required in blocks of 100 (one hundred);
- 2145** b) coast station identification numbers will be supplied in blocks of 10 (ten) to meet actual requirements;

- 2146** c) selective call numbers for selective calling of predetermined groups of ship stations in accordance with No. **2141** will be supplied as required as single numbers.
- 2147** (2) Each administration shall choose the selective call numbers to be assigned to its ship stations from the blocks of the series supplied to it.
- 2148** (3) Each administration shall choose the coast station identification numbers to be assigned to its coast stations from the blocks of the series supplied to it.

Section VI. Maritime Mobile Service Identities in the Maritime Mobile Service and the Maritime Mobile-Satellite Service

- 2149** § 37. When a station in the maritime mobile service or the
Mob-87 maritime mobile-satellite service is required to use maritime mobile service identities, the responsible administration shall assign the identity to the station in accordance with the provisions described in Appendix 43, taking into consideration relevant CCIR and CCITT Recommendations.

Section VII. Special Provisions

- 2150** § 38. (1) In the aeronautical mobile service, after communication has been established by means of the complete call sign, the aircraft station may use, if confusion is unlikely to arise, an abbreviated call sign or identification consisting of:
- 2151** a) in radiotelegraphy, the first character and last two letters of the complete call sign (see No. **2109**);
- 2152** b) in radiotelephony:
- the first character of the complete call sign; *or*

- the abbreviation of the name of the owner of the aircraft (company or individual); *or*
- the type of aircraft;

followed by the last two letters of the complete call sign (see No. **2109**) or by the last two characters of the registration mark.

2153 (2) The provisions of Nos. **2150**, **2151** and **2152** may be amplified or modified by agreement between administrations concerned.

2154 § 39. The distinguishing signals allotted to ships for visual and aural signalling shall, in general, agree with the call signs of ship stations.

2155
to NOT allocated.
2179

CHAPTER VII

ARTICLE 26

Service Documents

Section I. Titles, Contents and Publication of Service Documents

- 2180** § 1. The following documents shall be published by the Secretary-General. As circumstances warrant and in response to individual requests by administrations, the published information shall also be available in computer printed form, machine readable form, film, microfiche or by other appropriate means.
- 2181** § 2. *List I. The International Frequency List.*
- 2182** (1) This list shall be based on information prepared by the IFRB and shall contain:
- 2183** a) particulars of frequency assignments recorded in the Master International Frequency Register;
- 2184** b) the frequencies (e.g. 500 kHz or 2 182 kHz) prescribed by these Regulations for common use by certain services;
- 2185** c) the allotments in the Allotment Plans included in Appendices **25** (see No. **4212**), **26** and **27 Aer2** *.
- Mob-87**
- 2186** (2) An indication of the use of the frequencies and allotments in Nos. **2184** and **2185** shall be included in the entries concerned.
- 2187** (3) Frequency assignments in the International Frequency List shall be arranged in numerical ascending order of the frequencies assigned.

* Note by the General Secretariat: See No. **5189**.

2188 (4) The International Frequency List above 28 MHz shall be in four separate parts as follows:

2189 a) frequency assignments in bands between 28 MHz and 50 MHz, excluding broadcasting stations;

2190 b) frequency assignments in Region 1 in the bands above 50 MHz, and frequency assignments¹ to broadcasting stations in Region 1 in the bands between 28 MHz and 50 MHz;

2191 c) frequency assignments in Region 2 in the bands above 50 MHz;

2192 d) frequency assignments in Region 3 in the bands above 50 MHz, and frequency assignments to broadcasting stations in Region 3 in the bands between 28 MHz and 50 MHz.

2193 (5) New editions of the International Frequency List shall be published at intervals to be determined by the Secretary-General, but not exceeding two years. This list shall be kept up to date by quarterly recapitulative supplements published in the same form as the list itself. New or modified entries made in the Master International Frequency Register after the publication of the latest recapitulative supplement and which appear in a new recapitulative supplement or in a new edition of the list shall be indicated therein in an appropriate manner.

2194 (6) The recapitulative supplements shall be divided into two sections as follows:

2195 a) Section A shall contain new entries and modifications of entries already listed in the International Frequency List;

2196 b) Section B shall contain entries in the International Frequency List which have been deleted in their entirety.

2190.1 ¹ In the case of television broadcasting stations in Region 1, separate entries shall be inserted in List I for the carrier frequencies of the vision and sound channels.

2197 § 3. *List II. List of Fixed Stations Operating International Circuits.*

2198 (1) This list shall contain the particulars of the fixed stations operating international circuits, the frequencies of which appear in List I.

2199 (2) List II shall be republished at intervals to be determined by the Secretary-General. The list shall be kept up to date by the publication of recapitulative supplements at intervals of three months.

2200 § 4. *List III. (Spare)*

2201 § 5. *List IV. List of Coast Stations.*

2201A (1) This list shall contain particulars of coast stations and
Mob-87 coast earth stations providing a public correspondence service, and

2202 a) an annex containing a table of inland telegraph
Mob-87 rates, rates for telegrams destined for adjacent countries, etc., taking into account the relevant CCITT Recommendations;

2202A b) an annex giving important information concerning
Mob-87 the operation of maritime mobile-satellite systems which may be forwarded to the Secretary-General by participating administrations;

2202B c) an annex ¹ giving in tabulated form the following
Mob-87 particulars of coast stations and coast earth stations participating in the Global Maritime Distress and Safety System (GMDSS):

2202C i) coast stations participating in VHF, MF and
Mob-87 HF watchkeeping using digital selective calling techniques;

2202B.1 ¹ The annex shall be first published following entry into force
Mob-87 of Chapter N IX (see Resolution 331 (**Mob-87**)), and updated as necessary.

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- ii) coast earth stations operating in the geostationary satellite system and capable of providing distress and safety communications with ship earth stations including distress alerting using radiotelephony and/or direct-printing, or transmitting maritime safety information using direct-printing techniques;

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Mob-87

- iii) coast stations transmitting navigational and meteorological warnings and urgent information to ships using narrow-band direct-printing techniques.

2203

- (2) List IV shall be republished every two years and kept up to date by recapitulative supplements issued every six months.

2204 § 6. *List V. List of Ship Stations.*

2205

- (1) This list shall contain particulars of:

2206

- a)* ship stations fitted with radiotelegraph installations;

2207

- b)* ship stations fitted with radiotelegraph and radiotelephone installations;

2208

- c)* ship stations which are fitted with radiotelephone installations only and which communicate with stations of the maritime mobile service other than those of their own nationality or stations on ships which make international voyages;

2209

- d)* ship stations fitted with mobile earth stations.

2210

- (2) This list shall contain a table and a chart showing the zones and hours of service of ships of the second and third categories (see Appendix 12) and an annex giving details of maritime mobile-satellite systems which may be forwarded to the Secretary-General by participating administrations.

- 2211** (3) List V shall be republished each year. It shall be kept up to date by means of a quarterly supplement in addition to a half-yearly recapitulative supplement.
- 2212** § 7. *List VI. List of Radiodetermination and Special Service Stations.*
- 2213** (1) This list shall contain particulars of radio direction-finding stations and radiobeacon stations of the maritime radionavigation service, including radiobeacon stations of the aeronautical radionavigation service reliable for maritime navigation, and the particulars of radiodetermination-satellite systems available for maritime use, ocean-station vessels, direction-finder calibration stations as well as stations transmitting standard frequency and time signals, regular meteorological bulletins, notices to navigators, medical advice, epidemiological bulletins and ursigrams. In this list, each class of station shall occupy a special section.
- 2214** (2) List VI shall be republished at intervals to be determined by the Secretary-General. It shall be kept up to date by recapitulative supplements to be published every six months.
- 2215** § 8. *List VII A. List of Call Signs and Numerical Identities of Stations Used by the Maritime Mobile and Maritime Mobile-Satellite Services.*
- 2216** (1) This list shall contain an alphabetical list of call signs and a numerical table of identities of stations used by the maritime mobile service and maritime mobile-satellite service (coast, coast earth, ship, ship earth, radiodetermination and special service stations), maritime mobile service identities and selective call numbers or signals of ship and ship earth stations, and maritime mobile service identities and identification numbers or signals of coast and coast earth stations.
- Mob-87**

- 2217** (2) This list shall be preceded by the Table of Allocation of
Mob-87 International Call Sign Series and the Table of Maritime Identification Digits Series given in Appendices 42 and 43 respectively and a table of signals characterizing the emissions of radiobeacons used in the maritime mobile service.
- 2218** (3) List VII A shall be republished every two years and kept
Mob-87 up to date by recapitulative supplements every three months.
- 2219** § 8A. *List VII B. Alphabetical List of Call Signs of Stations*
Mob-87 *Other than Amateur Stations, Experimental Stations and Stations of the Maritime Mobile Service.*
- 2220** (1) This list shall be preceded by the Table of Allocation of
Mob-87 International Call Sign Series given in Appendix 42 and by a table indicating the form of call signs assigned by each administration to its amateur and experimental stations.
- 2221** (2) List VII B shall be republished at intervals determined
Mob-87 by the Secretary-General, and kept up to date by recapitulative supplements issued every three months.
- 2222** § 9. *List VIII. List of International Monitoring Stations.*
- 2223** (1) This list shall contain, in tabulated form, particulars of
monitoring stations participating in international monitoring.
- 2224** (2) List VIII shall be published at intervals to be determined by the Secretary-General. It shall be kept up to date by the publication of recapitulative supplements at intervals to be determined by the Secretary-General.
- 2225** § 10. *List VIII A. List of Stations in the Space Radiocommunication Services and in the Radio Astronomy Service.*
- 2226** (1) This list shall contain particulars of earth and space stations and of radio astronomy stations. The Board shall prepare and keep up to date the contents of this list grouped in such a way as to permit administrations to more easily identify all stations

pertaining to a given satellite network. Furthermore, the Board shall introduce the necessary improvements in the presentation of the list without in any way altering the basic data specified in the present Regulations. However, mobile earth stations of the maritime mobile-satellite service shall not be listed. Instead, a general reference to the List of Ship Stations shall be included in List VIII A.

2227 (2) List VIII A shall be republished at intervals to be determined by the Secretary-General. It shall be kept up to date by recapitulative supplements published every six months.

2228 § 11. *Map of Coast Stations Open to Public Correspondence.*
Mob-87

The Map shall be republished in a form and at intervals to be determined by the Secretary-General.

2229 § 12. *Chart in Colours Showing Frequency Allocations* as specified in Article 8.

2230 § 13. *Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services.*

2231 (1) This Manual shall contain the relevant extracts from:

2232 a) the International Telecommunication Convention in force;

2233 b) the Radio Regulations in force;

2234 c) the Telegraph Regulations in force, the current "Instructions for the Operation of the International Public Telegram Service" and CCITT Resolutions and Recommendations;

2235 d) the Telephone Regulations in force and the current "Instructions for the International Telephone Service" and CCITT Resolutions and Recommendations.

2236 (2) The Manual should be revised as needed, especially after administrative conferences and Plenary Assemblies of the CCITT and/or the CCIR. New editions shall be published at intervals to be determined by the Secretary-General.

Section II. Preparation and Amendment of Service Documents

- 2237 § 14. (1) The Secretary-General shall publish the amendments to the documents listed in Section I of this Article. Administrations shall take all appropriate measures to notify the Secretary-General immediately as changes in operational information contained in Lists IV, V and VI are made, in view of the importance of this information particularly with regard to safety. At least once a month, administrations shall inform the Secretary-General, in the form shown for the lists themselves in Appendix 9, of the additions, modifications or deletions to be made in Lists IV, V and VI using for this purpose the appropriate symbols shown in Appendix 10. Furthermore, in order to make the necessary additions, modifications and deletions to Lists I, II and VIII A, he shall use the data provided by the International Frequency Registration Board obtained from the information received in application of the provisions of Articles 11, 12, 13 and 17. He shall make the requisite amendments to List VII by using the data he has received for Lists I, II, IV, V, VI and VIII A. Lists IV and VI shall be coordinated with the information appearing in List I. The Secretary-General shall refer any discrepancies to the administrations concerned.
- 2238 (2) For permanent changes affecting the operation of radio-determination stations (List VI), see No. 2833.
- 2239 § 15. (1) The forms in which Lists II, IV, V, VI, VIII and VIII A are to be prepared are given in Appendix 9. Information concerning the use of these documents and of List I shall be given in the Prefaces thereto. Each entry shall include the appropriate symbol, as shown in Appendix 10, to designate the category of station concerned. Additional symbols, where necessary, may be selected by the Secretary-General, any such new symbol being notified by the Secretary-General to administrations.
- 2240 (2) In the service documents, the names of coast, aeronautical, radio direction-finding and radiobeacon stations are followed by the words:
- 2241 a) RADIO for coast stations;
- 2242 b) AERADIO for aeronautical stations;

- 2243** *c)* GONIO for maritime radio direction-finding stations;
- 2244** *d)* PHARE for maritime radiobeacon stations;
- 2245** *e)* AEROPHARE for aeronautical radiobeacon stations.
- 2246** § 16. For the purpose of the service documents, a “country” shall be understood to mean the territory within the limits of which the station is located; a territory which does not have full responsibility for its international relations shall also be considered as a country for this purpose.
- 2247**
to
2500 NOT allocated.

PART B

CHAPTER VIII

Provisions Relating to Groups of Services and to Specific Services and Stations*

ARTICLE 27

Terrestrial Radiocommunication Services Sharing Frequency Bands with Space Radiocommunication Services Above 1 GHz

Section I. Choice of Sites and Frequencies

- 2501** § 1. Sites and frequencies for terrestrial stations, operating in frequency bands shared with equal rights between terrestrial radio-communication and space radiocommunication services, shall be selected having regard to the relevant CCIR Recommendations with respect to geographical separation from earth stations.

Orb-88

* For provisions governing the mobile services and the special services related to safety, see:

Special services related to safety:	Chapter IX
Aeronautical mobile service and aeronautical mobile-satellite service:	Chapter X
Maritime mobile service:	Chapter XI
Maritime mobile-satellite service:	Chapter XI
Land mobile service and land mobile-satellite service:	Chapter XII

2502 § 2. (1) As far as practicable, sites for transmitting¹ stations, in the fixed or mobile service, employing maximum values of equivalent isotropically radiated power (e.i.r.p.) exceeding +35 dBW in the frequency bands between 1 GHz and 10 GHz, should be selected so that the direction of maximum radiation of any antenna will be at least 2° away from the geostationary-satellite orbit, taking into account the effect of atmospheric refraction².

2502.1 ¹ For their own protection receiving stations in the fixed or mobile service operating in bands shared with space radiocommunication services (space-to-Earth) should also avoid directing their antennae towards the geostationary-satellite orbit if their sensitivity is sufficiently high that interference from space station transmissions may be significant.

2502.2 ² Information on this subject is given in the most recent version of CCIR Report 393.

2503 (2) As far as practicable, sites for transmitting³ stations, in the fixed or mobile service, employing maximum values of equivalent isotropically radiated power (e.i.r.p.) exceeding +45 dBW in the frequency bands between 10 GHz and 15 GHz, should be selected so that the direction of maximum radiation of any antenna will be at least 1.5° away from the geostationary-satellite orbit, taking into account the effect of atmospheric refraction⁴.

2503.1 ³ See No. **2502.1**.

2503.2 ⁴ See No. **2502.2**.

2504 (3) In the frequency bands above 15 GHz there shall be no restriction⁵ as to the direction of maximum radiation for stations in the fixed or mobile service, except as noted in No. **2504A**.

2504.1 ⁵ The provisions of No. **2504** shall apply until such time as the CCIR has made a Recommendation as to the need for restrictions in frequency bands specified in No. **2511**, at which time all systems introduced after 1 January 1982 should as far as practicable meet any such restriction.

WARC-92

2504A As far as practicable, sites for transmitting stations, in the
WARC-92 fixed or mobile service, employing maximum values of equivalent isotropic radiated power (e.i.r.p.) density exceeding 24 dBW in any 1 MHz band in the frequency band 25.25 - 27.5 GHz should be selected so that the direction of maximum radiation of any antenna will be at least 1.5° away from the geostationary-satellite orbit, taking into account the effect of atmospheric refraction¹.

2504A.1 ¹ The provisions of No. **2504A** shall apply until such time as the
WARC-92 CCIR has made a recommendation on the e.i.r.p. density limits which should apply in the band.

Section II. Power Limits

2505 § 3. (1) The maximum equivalent isotropically radiated power (e.i.r.p.) of a station in the fixed or mobile service shall not exceed +55 dBW.

2506 (2) Where compliance with No. **2502** is impracticable the maximum equivalent isotropically radiated power (e.i.r.p.) of a station in the fixed or mobile service shall not exceed:

+47 dBW in any direction within 0.5° of the geostationary-satellite orbit; *or*

+47 dBW to +55 dBW, on a linear decibel scale (8 dB per degree), in any direction between 0.5° and 1.5° of the geostationary-satellite orbit, taking into account the effect of atmospheric refraction².

2506.1 ² Information on this subject is given in the most recent version of CCIR Report 393.

2507 (3) The power delivered by a transmitter to the antenna of a station in the fixed or mobile service in frequency bands between 1 GHz and 10 GHz shall not exceed +13 dBW.

2508 (4) The power delivered by a transmitter to the antenna of a station in the fixed or mobile service in frequency bands above 10 GHz shall not exceed +10 dBW.

2509 (5) The limits given in Nos. **2502**, **2505**, **2506** and **2507**
WARC-92 apply in the following frequency bands allocated to the fixed-satellite service, the meteorological-satellite service, the space research service, the space operation service, the earth exploration-satellite service or the mobile-satellite service for reception by space stations, where these bands are shared with equal rights with the fixed or mobile service:

1 610 - 1 645.5 MHz	(for countries mentioned in No. 730)
1 646.5 - 1 660 MHz	(for countries mentioned in No. 730)
1 675 - 1 690 MHz	(for Region 2)
1 690 - 1 700 MHz	(for countries of Region 2 mentioned in No. 740)
1 700 - 1 710 MHz	(for Region 2)
1 970 - 1 980 MHz	(for Region 2)
1 980 - 2 010 MHz	
2 025 - 2 110 MHz	
2 200 - 2 290 MHz	
2 655 - 2 670 MHz ¹	(for Regions 2 and 3)
2 670 - 2 690 MHz	
5 725 - 5 755 MHz ¹	(for countries of Region 1 mentioned in Nos. 803 and 805)

2509.1 ¹ The equality of right to operate when a band of frequencies is allocated in different Regions to different services of the same category is established in No. **346**. Therefore any limits concerning inter-Regional interference which may appear in CCIR Recommendations should, as far as practicable, be observed by administrations.

5755 - 5850 MHz¹ (for countries of Region 1 mentioned in Nos. **803**, **805** and **807**)

5850 - 7075 MHz

7900 - 8400 MHz

2509.1 ¹ The equality of right to operate when a band of frequencies is allocated in different Regions to different services of the same category is established in No. **346**. Therefore any limits concerning inter-Regional interference which may appear in CCIR Recommendations should, as far as practicable, be observed by administrations.

2509A Trans-horizon systems in the 1700 - 1710 MHz, 1970 -
WARC-92 2010 MHz, 2025 - 2110 MHz and 2200 - 2290 MHz bands may exceed the limits given in Nos. **2505** and **2507**, but the provisions of Nos. **2502** and **2506** should be observed. Considering the difficult sharing conditions with other services and keeping in mind the provisions of Recommendation **100** (CAMR-92), administrations are urged to keep the number of trans-horizon systems in these bands to a minimum.

2510 (6) The limits given in Nos. **2503**, **2505** and **2508** apply in
Orb-88 the following frequency bands allocated to the fixed-satellite service for reception by space stations, where these bands are shared with equal rights with the fixed or mobile service:

10.7 - 11.7 GHz² (for Region 1)

12.5 - 12.75 GHz² (for countries mentioned in Nos. **848** and **850**)

12.7 - 12.75 GHz² (for Region 2)

12.75 - 13.25 GHz

2510.1 ² The equality of right to operate when a band of frequencies is allocated in different Regions to different services of the same category is established in No. **346**. Therefore any limits concerning inter-Regional interference which may appear in CCIR Recommendations should, as far as practicable, be observed by administrations.

RR27-6

- 14.0 - 14.25 GHz (for countries mentioned in No. **857**)
- 14.25 - 14.3 GHz (for countries mentioned in Nos. **857**, **860** and **861**)
- 14.3 - 14.4 GHz¹ (for Regions 1 and 3)
- 14.4 - 14.5 GHz
- 14.5 - 14.8 GHz

2510.1 ¹ The equality of right to operate when a band of frequencies is allocated in different Regions to different services of the same category is established in No. **346**. Therefore any limits concerning inter-Regional interference which may appear in CCIR Recommendations should, as far as practicable, be observed by administrations.

2510.2 SUP
Orb-88

2511 (7) The limits given in Nos. **2505** and **2508** apply in the
WARC-92 following frequency bands allocated to the fixed-satellite service or the inter-satellite service for reception by space stations, where these bands are shared with equal rights with the fixed or mobile service:

- 17.7 - 18.4 GHz
- 24.45 - 24.75 GHz
- 24.75 - 25.25 GHz (for Region 3)
- 25.25 - 29.5 GHz

2511.1 SUP
Orb-88

2511.2 SUP
WARC-92

2512
to NOT allocated.
2538

ARTICLE 28

**Space Radiocommunication Services Sharing Frequency Bands
with Terrestrial Radiocommunication Services Above 1 GHz**

Section I. Choice of Sites and Frequencies

- 2539** § 1. Sites and frequencies for earth stations, operating in frequency bands shared with equal rights between terrestrial radiocommunication and space radiocommunication services, shall be selected having regard to the relevant CCIR Recommendations with respect to geographical separation from terrestrial stations.

Section II. Power Limits

- 2540** § 2. (1) Earth stations.
- 2541** (2) The equivalent isotropically radiated power (e.i.r.p.) transmitted in any direction towards the horizon by an earth station operating in frequency bands between 1 GHz and 15 GHz shall not exceed the following limits except as provided in No. **2544** or **2546**:

+40 dBW in any 4 kHz band for $\theta \leq 0^\circ$

+40 + 3 θ dBW in any 4 kHz band for $0^\circ < \theta \leq 5^\circ$

where θ is the angle of elevation of the horizon viewed from the centre of radiation of the antenna of the earth station and measured in degrees as positive above the horizontal plane and negative below it.

- 2542** (3) The equivalent isotropically radiated power (e.i.r.p.) transmitted in any direction towards the horizon by an earth station

operating in frequency bands above 15 GHz shall not exceed the following limits except as provided in No. **2545** or **2546**:

+64 dBW in any 1 MHz band for $\theta \leq 0^\circ$

+64 + 3 θ dBW in any 1 MHz band for $0^\circ < \theta \leq 5^\circ$

where θ is as defined in No. **2541**.

- 2543** (4) For angles of elevation of the horizon greater than 5° there shall be no restriction as to the equivalent isotropically radiated power (e.i.r.p.) transmitted by an earth station towards the horizon.
- 2544** (5) As an exception to the limits given in No. **2541**, the equivalent isotropically radiated power (e.i.r.p.) towards the horizon for an earth station in the space research service (deep space) shall not exceed +55 dBW in any 4 kHz band.
- 2545** (6) As an exception to the limits given in No. **2542**, the equivalent isotropically radiated power (e.i.r.p.) towards the horizon for an earth station in the space research service (deep space) shall not exceed +79 dBW in any 1 MHz band.
- 2546** (7) The limits given in Nos. **2541**, **2542**, **2544** and **2545**, as applicable, may be exceeded by not more than 10 dB. However, when the resulting coordination area extends into the territory of another country, such increase shall be subject to agreement by the administration of that country.
- 2547** (8) The limits given in No. **2541** apply in the following frequency bands allocated to the fixed-satellite service, the earth exploration-satellite service, and in particular the meteorological-satellite service, the mobile-satellite service and the space research

service for transmission by earth stations where these bands are shared with equal rights with the fixed or mobile service:

5 670	- 5 725	MHz	(for the countries mentioned in No. 804 with respect to the countries mentioned in Nos. 803 and 805)
5 725	- 5 755	MHz ¹	(for Region 1 with respect to the countries mentioned in Nos. 803 and 805)
5 755	- 5 850	MHz ¹	(for Region -1 with respect to the countries mentioned in Nos. 803 , 805 and 807)
5 850	- 7 075	MHz	
7 900	- 8 400	MHz	
10.7	- 11.7	GHz ¹	(for Region 1)
12.5	- 12.75	GHz ¹	(for Region 1 with respect to the countries mentioned in No. 848)
12.7	- 12.75	GHz ¹	(for Region 2)
12.75	- 13.25	GHz	
14.0	- 14.25	GHz	(with respect to the countries mentioned in No. 857)
14.2	- 14.3	GHz	(with respect to the countries mentioned in Nos. 857 , 860 and 861)
14.3	- 14.4	GHz ¹	(for Regions 1 and 3)
14.4	- 14.8	GHz	

2547.1

¹ The equality of right to operate when a band of frequencies is allocated in different Regions to different services of the same category is established in No. **346**. Therefore any limits concerning inter-Regional interference which may appear in CCIR Recommendations should, as far as practicable, be observed by administrations.

2548 (9) The limits given in No. **2542** apply in the following frequency bands allocated to the fixed-satellite service, the earth exploration-satellite service, the mobile-satellite service and the space research service for transmission by earth stations where shared with equal rights with the fixed or mobile service:

17.7 - 18.1 GHz

27.0 - 27.5 GHz¹ (for Regions 2 and 3)

27.5 - 29.5 GHz

31.0 - 31.3 GHz (for the countries mentioned in No. **885**)

34.2 - 35.2 GHz (for the countries mentioned in Nos. **895** and **896** with respect to the countries mentioned in No. **894**)

2548.1 ¹ The equality of right to operate when a band of frequencies is allocated in different Regions to different services of the same category is established in No. **346**. Therefore any limits concerning inter-Regional interference which may appear in CCIR Recommendations should, as far as practicable, be observed by administrations.

2548A (10) The equivalent isotropically radiated power (e.i.r.p.)
Mob-87 transmitted in any direction by an earth station in the radiodetermination-satellite service in the band 1 610 - 1 626.5 MHz shall not exceed -3 dBW in any 4 kHz band.

Section III. Minimum Angle of Elevation

2549 § 3. (1) Earth stations.

2550 (2) Earth station antennae shall not be employed for transmission at elevation angles of less than 3° measured from the horizontal plane to the direction of maximum radiation, except when agreed to by administrations concerned and those whose services may

be affected. In case of reception by an earth station, the above value shall be used for coordination purposes if the operating angle of elevation is less than that value.

- 2551** (3) As an exception to No. **2550**, earth station antennae in the space research service (near Earth) shall not be employed for transmission at elevation angles of less than 5°, and earth station antennae in the space research service (deep space) shall not be employed for transmission at elevation angles of less than 10°, both angles being those measured from the horizontal plane to the direction of maximum radiation. In the case of reception by an earth station, the above values shall be used for coordination purposes if the operating angle of elevation is less than those values.

Section IV. Limits of Power Flux-Density from Space Stations

- 2552** § 4. (1) Power flux-density limits between 1 670 MHz and 1 700 MHz.

- 2553** a) The power flux-density at the Earth's surface produced by emissions from a space station, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, shall not exceed -133 dB(W/m²) in any 1.5 MHz band. This limit relates to the power flux-density which would be obtained under assumed free-space propagation conditions.

- 2554** b) The limit given in No. **2553** applies in the frequency band listed in No. **2555** which is allocated to the earth exploration-satellite service and in particular the meteorological-satellite service for transmission by space stations where this band is shared with equal rights with the meteorological aids service.

- 2555** 1 670 - 1 700 MHz

2556 (2) Power flux-density limits between 1 525 MHz and 2 500 MHz.

2557 *a)* The power flux-density at the Earth's surface produced by emissions from a space station, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, shall not exceed the following values:

–154 dB(W/m²) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

–154 + 0.5(δ – 5) dB(W/m²) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

–144 dB(W/m²) in any 4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

These limits relate to the power flux-density which would be obtained under assumed free-space propagation conditions.

2558 *b)* The limits give in No. **2557** apply in the frequency
WARC-92 bands listed in No. **2559** which are allocated to the following space radiocommunication services:

- meteorological-satellite service (space-to-Earth);
- space research service (space-to-Earth) (space-to-space);
- space operation service (space-to-Earth) (space-to-space);
- earth exploration-satellite service (space-to-Earth) (space-to-space);

for transmission by space stations where these bands are shared with equal rights with the fixed or mobile service.

- 2559** 1 525 - 1 530 MHz¹ (for Regions 1 and 3)
WARC-92 1 670 - 1 690 MHz
 1 690 - 1 700 MHz (on the territory of the countries mentioned
 in Nos. **740** and **741**)
 1 700 - 1 710 MHz
 2 025 - 2 110 MHz
 2 200 - 2 300 MHz

2559.1 ¹ The equality of right to operate when a band of frequencies is allocated in different Regions to different services of the same category is established in No. **346**. Therefore any limits concerning inter-Regional interference which may appear in CCIR Recommendations should, as far as practicable, be observed by administrations.

2560 c) The power flux-density values given in No. **2557** are derived on the basis of protecting the fixed service using line-of-sight techniques. Where a fixed service using tropospheric scatter operates in the bands listed in No. **2559** and where there is insufficient frequency separation, there must be sufficient angular separation between the direction to the space station and the direction of maximum radiation of the antenna of the receiving station of the fixed service using tropospheric scatter to ensure that the interference power at the receiver input of the station of the fixed service does not exceed -168 dBW in any 4 kHz band.

2561 (3) Power flux-density limits between 2 500 MHz and 2 690 MHz.

2562 a) The power flux-density at the Earth's surface produced
WARC-92 by emissions from a space station in the broadcasting-satellite service, the fixed-satellite service, or the radiodetermination-satellite service

for all conditions and for all methods of modulation shall not exceed the following values:

–152 dB(W/m²) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

–152 + 0.75(δ – 5) dB(W/m²) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

–137 dB(W/m²) in any 4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

These limits relate to the power flux-density which would be obtained under assumed free-space propagation conditions.

2563 *b)* The limits given in No. **2562** apply in the frequency
WARC-92 band 2500 - 2690 MHz which is shared by the fixed-satellite service with the fixed or mobile service, in the frequency band 2520 - 2670 MHz which is shared by the broadcasting-satellite service with the fixed or mobile service; and in the frequency band 2500 - 2516.5 MHz (in the countries mentioned in No. **754A**) allocated to the radiodetermination-satellite service.

2564 *c)* The power flux-density values given in No. **2562** are
WARC-92 derived on the basis of protecting the fixed service using line-of-sight techniques. Where a fixed service using tropospheric scatter operates in the bands mentioned in No. **2563**, and where there is insufficient frequency separation, there must be sufficient angular separation between the direction to the space station and the direction of maximum radiation of the antenna of the receiving station of the fixed service using tropospheric scatter to ensure that the interference power at the receiver input of the station of the fixed service does not exceed –168 dBW in any 4 kHz band.

2565 (4) Power flux-density limits between 3400 MHz and 7750 MHz.

2566 a) The power flux-density at the Earth's surface produced by emissions from a space station, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, shall not exceed the following values:

–152 dB(W/m²) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

–152 + 0.5(δ – 5) dB(W/m²) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

–142 dB(W/m²) in any 4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

These limits relate to the power flux-density which would be obtained under assumed free-space propagation conditions.

2567 b) The limits given in No. **2566** apply in the frequency bands listed in No. **2568** which are allocated to the following space radiocommunication services:

- fixed-satellite service (space-to-Earth)
- meteorological-satellite service (space-to-Earth)
- mobile-satellite service
- space research service

for transmission by space stations where these bands are shared with equal rights with the fixed or mobile service.

2568 3 400 - 4 200 MHz

4 500 - 4 800 MHz

5 670 - 5 725 MHz (on the territory of countries mentioned in Nos. **803** and **805**)

7 250 - 7 750 MHz

2569 (5) Power flux-density limits between 8 025 MHz and 11.7 GHz.

2570 a) The power flux-density at the Earth's surface produced by emissions from a space station, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, shall not exceed the following values:

–150 dB(W/m²) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

–150 + 0.5(δ – 5) dB(W/m²) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

–140 dB(W/m²) in any 4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

These limits relate to the power flux-density which would be obtained under assumed free-space propagation conditions.

2571 b) The limits given in No. **2570** apply in the frequency bands listed in No. **2572** which are allocated to the following space radiocommunication services:

- earth exploration-satellite service (space-to-Earth)
- space research service (space-to-Earth)
- fixed-satellite service (space-to-Earth)

for transmission by space stations where these bands are shared with equal rights with the fixed or mobile service.

2572 8 025 - 8 500 MHz

10.7 - 11.7 GHz

2573 (6) Power flux-density limits between 12.2 GHz and 12.75 GHz.

2574 a) The power flux-density at the Earth's surface produced by emissions from a space station, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, shall not exceed the following values:

–148 dB(W/m²) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

–148 + 0.5(δ – 5) dB(W/m²) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

–138 dB(W/m²) in any 4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

These limits relate to the power flux-density which would be obtained under assumed free-space propagation conditions.

2575 b) The limits given in No. **2574** apply in the frequency bands indicated in No. **2576** which are allocated to the fixed-satellite service for transmission by space stations where these bands are shared with equal rights with the fixed or mobile service.

2576 12.2 - 12.5 GHz¹ (for Region 3)

12.5 - 12.75 GHz² (for Region 3 and for Region 1 on the territory of countries mentioned in Nos. **848** and **850**).

2576.1 ¹ The equality of right to operate when a band of frequencies is allocated in different Regions to different services of the same category is established in No. **346**. Therefore any limits concerning inter-Regional interference which may appear in CCIR Recommendations should, as far as practicable, be observed by administrations.

2576.2 ² See No. **2576.1** and Resolution **34**.

Orb-88

2577 (7) Power flux-density limits between 17.7 GHz and
WARC-92 27.5 GHz.

2578 a) The power flux-density at the Earth's surface produced by emissions from a space station, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, shall not exceed the following values:

–115 dB(W/m²) in any 1 MHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

–115 + 0.5(δ – 5) dB(W/m²) in any 1 MHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

–105 dB(W/m²) in any 1 MHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

These limits relate to the power flux-density which would be obtained under assumed free-space propagation conditions.

2579 b) The limits given in No. **2578** apply in the frequency
WARC-92 bands listed in No. **2580** which are allocated to the following space radiocommunication services:

- fixed-satellite service (space-to-Earth);
- earth exploration-satellite including meteorological-satellite service (space-to-Earth);
- inter-satellite service,

for transmission by space stations where this band is shared with equal rights with the fixed or mobile service.

2580 17.7 - 19.7 GHz¹

WARC-92

22.55 - 23.55 GHz

24.45 - 24.75 GHz

25.25 - 27.5 GHz

2580.1 ¹ The equality of right to operate when a band of frequencies is allocated in different Regions to different services of the same category is established in No. **346**. Therefore any limits concerning inter-Regional interference which may appear in CCIR Recommendations should, as far as practicable, be observed by administrations.

2581 (8) Power flux-density limits between 31.0 GHz and 40.5 GHz.

2582 a) The power flux-density at the Earth's surface produced by emissions from a space station, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, shall not exceed the values given in No. **2578**².

2582.1 ² The provisions of No. **2582** shall apply until such time as the CCIR has made a Recommendation as to the values of power flux-density limits which should apply in the frequency band specified in No. **2584**, at which time all systems shall meet those power flux-density limits recommended by the CCIR and endorsed by a competent world administrative radio conference.

2583 b) The limits given in No. **2582** apply in the frequency bands given in No. **2584** which are allocated to the fixed-satellite service, the mobile-satellite service and the space research service for transmission by space stations where these bands are shared with equal rights with the fixed or mobile services.

2584 31.0 - 31.3 GHz

WARC-92

34.7 - 35.2 GHz (for space-to-Earth transmissions under No. **896** on the territory of countries mentioned in No. **894**)

37.0 - 40.5 GHz

2585 (9) The limits given in Nos. **2553, 2557, 2562, 2566, 2570, 2574, 2578, 2582** and **2582.1** may be exceeded on the territory of any country the administration of which has so agreed.

2586
to NOT allocated.
2611

ARTICLE 29

Special Rules Relating to Space Radiocommunication Services**Section I. Cessation of Emissions**

- 2612** § 1. Space stations shall be fitted with devices to ensure immediate cessation of their radio emissions by telecommand, whenever such cessation is required under the provisions of these Regulations.

Section II. Control of Interference to Geostationary-Satellite Systems

- 2613** § 2. Non-geostationary space stations shall cease or reduce to a negligible level their emissions, and their associated earth stations shall not transmit to them, whenever there is insufficient angular separation between non-geostationary satellites and geostationary satellites resulting in unacceptable interference¹ to geostationary-satellite space systems in the fixed-satellite service operating in accordance with these Regulations.

- 2613.1** ¹ The level of accepted interference shall be fixed by agreement between the administrations concerned, using the relevant CCIR Recommendations as a guide.

- 2613A** Whenever the emissions from geostationary satellites in the inter-satellite service are directed towards space stations at distances from Earth greater than that of the geostationary-satellite orbit, the boresight of the antenna mainbeam of the geostationary satellite shall not be pointed within 15° of any point on the geostationary-satellite orbit.

- 2614** § 3. In the frequency band 29.95 - 30 GHz space stations in the earth exploration-satellite service on board geostationary satellites

and operating with space stations in the same service on board non-geostationary satellites shall have the following restriction:

Whenever the emissions from the geostationary satellites are directed towards the geostationary-satellite orbit and cause unacceptable interference¹ to any geostationary-satellite space system in the fixed-satellite service, these emissions shall be reduced to a level at or less than accepted interference¹.

- 2614.1** ¹ The level of accepted interference shall be fixed by agreement between the administrations concerned, using the relevant CCIR Recommendations as a guide.

Section III. Station Keeping of Space Stations²

- A.29** ² In the case of space stations on board geosynchronous satellites
S.III.1 with circular orbits having an angle of inclination greater than 5 degrees, the
Orb-88 positional tolerance shall relate to the nodal point.

- 2615** § 4. (1) Space stations on board geostationary satellites which use any frequency band allocated to the fixed-satellite service or the broadcasting-satellite service³:

- 2615.1** ³ Space stations in the broadcasting-satellite service on geostationary satellites operating in the band 11.7 - 12.7 GHz are exempted from these provisions but shall maintain their positions in accordance with Appendix 30^{*}.

- 2616** a) shall have the capability of maintaining their positions within ± 0.1 degree of the longitude of their nominal positions;

- 2617** b) shall maintain their positions within ± 0.1 degree of longitude of their nominal positions; *but*

^{*} *Note by the Secretary-General:* Appendix 30 has been revised by the First Session of the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It, Geneva, 1985, and becomes Appendix 30 (**Orb-85**).

2618 c) experimental stations on board geostationary satellites need not comply with No. **2616** nor No. **2617**, but shall maintain their positions within ± 0.5 degree of longitude of their nominal positions;

2619 d) however, space stations need not comply with No. **2617** nor No. **2618** as appropriate as long as the satellite network to which the space station belongs does not cause unacceptable interference¹ to any other satellite network whose space station complies with the limits given in Nos. **2617** and **2618**.

2619.1 ¹ The level of accepted interference shall be fixed by agreement between the administrations concerned, using the relevant CCIR Recommendations as a guide.

2620 (2) Space stations on board geostationary satellites which do not use any frequency band allocated to the fixed-satellite service or the broadcasting-satellite service:

2621 a) shall have the capability of maintaining their positions within ± 0.5 degree of the longitude of their nominal positions;

2622 b) shall maintain their positions within ± 0.5 degree of longitude of their nominal positions; *but*

2623 c) need not comply with No. **2622** as long as the satellite network to which the space station belongs does not cause unacceptable interference² to any other satellite network whose space station complies with the limits given in No. **2622**.

2623.1 ² The level of accepted interference shall be fixed by agreement between the administrations concerned, using the relevant CCIR Recommendations as a guide.

2624 (3) Space stations¹ on board geostationary satellites which are put into service prior to 1 January 1987, with the advance publication information for the network having been published before 1 January 1982, are exempted from the provisions of Nos. **2615** to **2623** inclusive; however they

2624.1 ¹ Space stations in the broadcasting-satellite service on geostationary satellites operating in the band 11.7 - 12.7 GHz are exempted from these provisions but shall maintain their positions in accordance with Appendix 30*.

2625 a) shall have the capability of maintaining their positions within ± 1 degree of the longitude of their nominal positions, but efforts should be made to achieve a capability of maintaining their positions at least within ± 0.5 degree of the longitude of their nominal positions;

2626 b) shall maintain their positions within ± 1 degree of longitude of their nominal positions; *but*

2627 c) need not comply with No. **2626** as long as the satellite network to which the space station belongs does not cause unacceptable interference² to any other satellite network whose space station complies with the limits given in No. **2626**.

2627.1 ² The level of accepted interference shall be fixed by agreement between the administrations concerned, using the relevant CCIR Recommendations as a guide.

* *Note by the Secretary-General:* Appendix 30 has been revised by the First Session of the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It, Geneva, 1985, and becomes Appendix 30 (**Orb-85**).

Section IV. Pointing Accuracy of Antennae on Geostationary Satellites

2628 § 5. (1) The pointing direction of maximum radiation of any earthward beam of antennae on geostationary satellites¹ shall be capable of being maintained within:

- a) 10 % of the half power beamwidth relative to the nominal pointing direction, *or*
- b) 0.3 degree relative to the nominal pointing direction,

whichever is greater. This position applies only when such a beam is intended for less than global coverage.

2628.1 ¹ Transmitting antennae of space stations in the broadcasting-satellite service operating in the band 11.7 - 12.7 GHz are not subject to these provisions but shall maintain their pointing accuracy in accordance with paragraph 3.14.1 of Annex 8 to Appendix 30*.

2629 (2) In the event that the beam is not rotationally symmetrical about the axis of maximum radiation, the tolerance in any plane containing this axis shall be related to the half power beamwidth in that plane.

2630 (3) This accuracy shall be maintained only if it is required to avoid unacceptable interference² to other systems.

2630.1 ² The level of accepted interference shall be fixed by agreement between the administrations concerned, using the relevant CCIR Recommendations as a guide.

* *Note by the Secretary-General:* Appendix 30 has been revised by the First Session of the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It, Geneva, 1985, and becomes Appendix 30 (Orb-85).

Section V. Power Flux-Density at the Geostationary-Satellite Orbit

- 2631** § 6. In the frequency band 8 025 MHz - 8 400 MHz, which the earth exploration-satellite service using non-geostationary satellites shares with the fixed-satellite service (Earth-to-space) or the meteorological-satellite service (Earth-to-space), the maximum power flux-density produced at the geostationary-satellite orbit by any earth exploration-satellite service space station shall not exceed $-174 \text{ dB(W/m}^2\text{)}$ in any 4 kHz band.

Section VI. Radio Astronomy in the Shielded Zone of the Moon

- 2632** § 7. (1) In the shielded zone of the Moon¹ emissions causing harmful interference to radio astronomy observations² and to other users of passive services shall be prohibited in the entire frequency spectrum except in the following bands:

2632.1 ¹ The shielded zone of the Moon comprises the area of the Moon's surface and an adjacent volume of space which are shielded from emissions originating within a distance of 100 000 km from the centre of the Earth.

2632.2 ² The level of harmful interference is determined by agreement between the administrations concerned, with the guidance of the relevant CCIR Recommendations.

2633 a) the frequency bands allocated to the space research service using active sensors;

2634 b) the frequency bands allocated to the space operation service, the earth exploration-satellite service using active sensors, and the radiolocation service using stations on spaceborne platforms, which are required for the support of space research, as well as for radiocommunications and space research transmissions within the lunar shielded zone.

- 2635** (2) In frequency bands in which emissions are not prohibited by Nos. **2632** to **2634**, radio astronomy observations and passive space research in the shielded zone of the Moon may be protected from harmful interference by agreement between administrations concerned.

Section VII. Earth Station Off-Axis Power Limitations

- 2636** § 8. The level of equivalent isotropically radiated power (e.i.r.p.) emitted by an earth station at angles in the direction of the geostationary-satellite orbit off the main-beam axis has a significant impact on interference caused to other geostationary-satellite networks. Enhanced utilization of the geostationary-satellite orbit and easier coordination would be attained by minimizing such off-axis radiation and administrations are encouraged to achieve the lowest values practicable bearing in mind the latest CCIR Recommendations. Minimizing such levels is particularly important in intensively used up-link bands.

- 2637**
to
2663 NOT allocated.

ARTICLE 30

**Broadcasting Service and
Broadcasting-Satellite Service****Section I. Broadcasting Service****2664** *A. General*

2665 § 1. (1) The establishment and use of broadcasting stations (sound broadcasting and television broadcasting stations) on board ships, aircraft or any other floating or airborne objects outside national territories is prohibited.

2666 (2) In principle, except in the frequency band 3 900 - 4 000 kHz, broadcasting stations using frequencies below 5 060 kHz or above 41 MHz shall not employ power exceeding that necessary to maintain economically an effective national service of good quality within the frontiers of the country concerned.

2667 *B. Broadcasting in the Tropical Zone*

2668 § 2. (1) In these Regulations, the expression "broadcasting in the Tropical Zone" indicates a type of broadcasting for internal national use in countries in the zone defined in Nos. 406 to 411, where it may be shown that because of the difficulty of high atmospheric noise level and propagation it is not possible to provide economically a more satisfactory service by using low, medium, or very high frequencies.

2669 (2) The use by the broadcasting service of the bands listed below is restricted to the Tropical Zone:

2 300 - 2 498 kHz (Region 1)

2 300 - 2 495 kHz (Regions 2 and 3)

3 200 - 3 400 kHz (all Regions)

4 750 - 4 995 kHz (all Regions)

5 005 - 5 060 kHz (all Regions)

- 2670** (3) The carrier power of the transmitters operating in this service in the bands listed in No. **2669** shall not exceed 50 kW.
- 2671** (4) Within the Tropical Zone, the broadcasting service has priority over the other services with which it shares the bands listed in No. **2669**.
- 2672** (5) However, in that part of Libya north of parallel 30° North the broadcasting service in the bands listed in No. **2669** has equal rights to operate with other services in the Tropical Zone with which it shares these bands.
- 2673** (6) The broadcasting service operating inside the Tropical Zone, and other services operating outside this zone, are subject to the provisions of No. **346**.

2673A *C. HF Bands Allocated Exclusively*
HFBC-87 *to the Broadcasting Service*

- 2673B** § 2A. Double-sideband and single-sideband transmitting stations operating in the HF bands allocated exclusively to the Broadcasting Service shall meet the system specifications contained in Appendix 45.
HFBC-87

Section II. Broadcasting-Satellite Service

- 2674** § 3. In devising the characteristics of a space station in the broadcasting-satellite service, all technical means available shall be used to reduce, to the maximum extent practicable, the radiation over the territory of other countries unless an agreement has been previously reached with such countries.

- 2675**
to
2699 NOT allocated.

ARTICLE 31

Fixed Service

Section I. General

- 2700** § 1. (1) Administrations are urged to discontinue, in the fixed service, the use of double-sideband radiotelephone (class A3E) transmissions.
- 2701** (2) Class F3E or G3E emissions are prohibited in the fixed service in the bands below 30 MHz.

Section II. Frequencies for the International Exchange of Police Information

- 2702** § 2. (1) The frequencies necessary for the international exchange of information to assist in the apprehension of criminals shall be selected from the bands allocated to the fixed service, if necessary by special agreement concluded between the administrations concerned under the provision for special arrangements in Article 31 of the Convention.
- 2703** (2) To obtain economy in the use of frequencies, the International Frequency Registration Board should be consulted by the administrations concerned whenever such agreements are under discussion on a regional or worldwide basis.

Section III. Frequencies for the International Exchange of Synoptic Meteorological Information

- 2704** § 3. (1) The frequencies necessary for the international exchange of synoptic meteorological information shall be selected from the bands allocated to the fixed service, if necessary by special agreement concluded between the administrations concerned under the provision for special arrangements in Article 31 of the Convention.

2705 (2) To obtain economy in the use of frequencies, the International Frequency Registration Board should be consulted by the administrations concerned whenever such agreements are under discussion on a regional or worldwide basis.

2706
to NOT allocated.
2730

ARTICLE 32

Amateur Service and Amateur-Satellite Service**Section I. Amateur Service**

- 2731 § 1. Radiocommunications between amateur stations of different countries shall be forbidden if the administration of one of the countries concerned has notified that it objects to such radio-communications.
- 2732 § 2. (1) When transmissions between amateur stations of different countries are permitted, they shall be made in plain language and shall be limited to messages of a technical nature relating to tests and to remarks of a personal character for which, by reason of their unimportance, recourse to the public telecommunications service is not justified.
- 2733 (2) It is absolutely forbidden for amateur stations to be used for transmitting international communications on behalf of third parties.
- 2734 (3) The preceding provisions may be modified by special arrangements between the administrations of the countries concerned.
- 2735 § 3. (1) Any person seeking a licence to operate the apparatus of an amateur station shall prove that he is able to send correctly by hand and to receive correctly by ear, texts in Morse code signals. The administrations concerned may, however, waive this requirement in the case of stations making use exclusively of frequencies above 30 MHz.
- 2736 (2) Administrations shall take such measures as they judge necessary to verify the operational and technical qualifications of any person wishing to operate the apparatus of an amateur station.
- 2737 § 4. The maximum power of amateur stations shall be fixed by the administrations concerned, having regard to the technical qualifications of the operators and to the conditions under which these stations are to operate.

2738 § 5. (1) All the general rules of the Convention and of these Regulations shall apply to amateur stations. In particular, the emitted frequency shall be as stable and as free from spurious emissions as the state of technical development for such stations permits.

2739 (2) During the course of their transmissions, amateur stations shall transmit their call sign at short intervals.

Section II. Amateur-Satellite Service

2740 § 6. The provisions of Section I of this Article shall apply equally, as appropriate, to the amateur-satellite service.

2741 § 7. Space stations in the amateur-satellite service operating in bands shared with other services shall be fitted with appropriate devices for controlling emissions in the event that harmful interference is reported in accordance with the procedure laid down in Article 22. Administrations authorizing such space stations shall inform the IFRB and shall ensure that sufficient earth command stations are established before launch to guarantee that any harmful interference which might be reported can be terminated by the authorizing administration (see No. 2612).

2742
to
2766 NOT allocated.

ARTICLE 33

Standard Frequency and Time Signal Service

- 2767** § 1. (1) To facilitate more efficient use of the radio frequency spectrum and to assist other technical and scientific activities, administrations providing or intending to provide a standard frequency and time signal service shall coordinate, in accordance with the provisions in this Article, the establishment and operation of such a service on a worldwide basis. Attention should be given to the extension of this service to those areas of the world not adequately served.
- 2768** (2) To this end, each administration shall take steps to coordinate, with the assistance of the International Frequency Registration Board, any new standard frequency or time signal transmission or any change in existing transmissions in the standard frequency bands. For this purpose, administrations shall exchange between themselves, and furnish to the Board, all relevant information. On this matter the Board shall consult the Director of the CCIR who shall also continue to seek the advice and cooperation of the International Time Bureau (BIH), the International Scientific Radio Union (URSI) and other international organizations having a direct and substantial interest in the subject.
- 2769** (3) In so far as is practicable, a new frequency assignment in the standard frequency bands should not be made or notified to the Board until appropriate coordination has been completed.
- 2770** § 2. Administrations shall cooperate in reducing interference in the standard frequency bands in accordance with CCIR Recommendations.
- 2771** § 3. Administrations which provide this service shall cooperate through the CCIR in the collation and distribution of the results of the measurements of standard frequencies and time signals, as well as details concerning adjustments to the frequencies and time signals.

2772 § 4. In selecting the technical characteristics of standard
frequency and time signal transmissions, administrations shall be
guided by the relevant CCIR Recommendations.

2773
to NOT allocated.
2797

ARTICLE 34

Experimental Stations

- 2798** § 1. (1) An experimental station may enter into communication with an experimental station of another country only after it has been authorized to do so by its administration. Each administration shall notify other administrations concerned when such authorizations are issued.
- 2799** (2) The administrations concerned determine by special arrangement the conditions under which communications may be established.
- 2800** § 2. (1) In experimental stations any person operating radiotelegraph apparatus, either on his own account or for another, shall have proved his ability to transmit by hand and to receive by ear, texts in Morse code signals.
- 2801** (2) Administrations shall take such measures as they judge necessary to verify the operational and technical qualifications of any person wishing to operate the apparatus of an experimental station.
- 2802** § 3. The administrations concerned shall fix the maximum power of experimental stations, having regard to the purpose for which their establishment has been authorized and the conditions under which they are to operate.
- 2803** § 4. (1) All the general rules of the Convention and of these Regulations shall apply to experimental stations. In particular, experimental stations shall comply with the technical conditions imposed upon transmitters operating in the same frequency bands, except where the technical principles of the experiments prevent this. In such a case, the administration which authorizes the operation of these stations may grant a dispensation in an appropriate form.
- 2804** (2) During the course of their transmissions, experimental stations shall transmit, at short intervals, their call sign or any other recognized form of identification (see Article 25).

2805 § 5. Where there is no risk of an experimental station
causing harmful interference to a service of another country, the
administration concerned may, if considered desirable, adopt dif-
ferent provisions from those contained in this Article.

2806
to NOT allocated.
2830

ARTICLE 35

**Radiodetermination Service and
Radiodetermination-Satellite Service****Section I. General Provisions**

- 2831** § 1. Administrations which have established a radiodetermination service shall take the necessary steps to ensure the effectiveness and regularity of that service; however they accept no responsibility for the consequences that might arise from the use of inaccurate information furnished, defective working, or failure of their stations.
- 2832** § 2. In the case of doubtful or unreliable observations, the station taking the bearing or fixing the position shall, whenever possible, notify the station to which this information is given of any such doubt or unreliability.
- 2833** § 3. Administrations shall notify to the Secretary-General the characteristics of each radiodetermination station providing an international service of value to the maritime mobile service and, if considered necessary, for each station or group of stations, the sectors in which the information furnished is normally reliable. This information is published in the List of Radiodetermination and Special Service Stations, and the Secretary-General shall be notified of any change of a permanent nature.
- 2834** § 4. The method of identification of radiodetermination stations shall be so chosen as to avoid any doubt as to their identity.
- 2835** § 5. Signals sent by radiodetermination stations shall be such as to permit accurate and precise measurements.

2836 § 6. Any information concerning modification or irregularity of working of a radiodetermination station shall be notified without delay in the following manner:

2837 a) land stations of countries operating a radiodetermination service shall send out daily, if necessary, notices of modifications or irregularities in working until such time as normal working is restored or, if a permanent alteration has been made, until such time as it can reasonably be taken that all navigators interested have been warned;

2838 b) permanent alterations or irregularities of long duration shall be published as soon as possible in the relevant notices to navigators.

Section II. Provisions for the Radiodetermination-Satellite Service

2839 § 7. (1) The provisions of Nos. **2831** to **2838** excluding No. **2832** shall be applied to the maritime radionavigation-satellite service.

2840 (2) The provisions of Nos. **2831** to **2838** excluding Nos. **2832** and **2833** shall be applied to the aeronautical radionavigation-satellite service.

2840A (3) The provisions of Nos. **2831** to **2838**, excluding
Mob-87 Nos. **2832** and **2833**, shall be applied to the radiodetermination-satellite service.

Section III. Radio Direction-Finding Stations

2841 § 8. (1) In the maritime radionavigation service, the radiotelegraph frequency normally used for radio direction-finding is 410 kHz. All direction-finding stations of the maritime radionavigation service using radiotelegraphy shall be able to use this frequency. They shall, in addition, be able to take bearings on 500 kHz, especially for locating stations sending signals of distress, alarm and urgency.

- 2842** (2) Where a radio direction-finding service is provided in the authorized bands between 1 605 kHz and 2 850 kHz, the radio direction-finding stations should be able to take bearings on the radiotelephone distress and calling frequency 2 182 kHz.
- 2842A Mob-87** (2A) Where a radio direction-finding station as defined in No. 13, operates in the bands between 156 MHz and 174 MHz, it should be able to take bearings on the VHF distress and calling frequency 156.8 MHz and on the VHF digital selective calling frequency 156.525 MHz.
- 2843** § 9. The procedure to be followed by radio direction-finding stations is given in Appendix 41.
- 2844** § 10. In the absence of prior arrangements, an aircraft station which calls a radio direction-finding station for a bearing shall use for this purpose a frequency on which the station called normally keeps watch.
- 2845** § 11. In the aeronautical radionavigation service, the procedure contemplated for radio direction-finding in this Section is applicable, except where special procedures are in force as a result of arrangements concluded between the administrations concerned.

Section IV. Radiobeacon Stations

2846

A. General

- 2847** § 12. When an administration thinks it desirable in the interests of navigation to organize a service of radiobeacon stations, it may use for this purpose:
- 2848** a) radiobeacons properly so-called, established on land or on ships permanently moored or, exceptionally, on ships navigating in a restricted area, the limits of which are known and published. The emissions of these radiobeacons may have either directional or non-directional patterns;

2849 b) fixed stations, coast stations or aeronautical stations designated to function as radiobeacons, at the request of mobile stations.

2850 § 13. (1) Radiobeacons properly so-called shall use the frequency bands which are available to them under Chapter III.

2851 (2) Other stations notified as radiobeacons shall use for this purpose their normal working frequency and their normal class of emission.

2852 (3) The power radiated by each radiobeacon properly so-called shall be adjusted to the value necessary to produce the stipulated field strength at the limit of the range required (see Nos. **2855** and **2860**).

2853 *B. Aeronautical Radiobeacons*

2854 § 14. (1) The assignment of frequencies to aeronautical radio-
Mob-87 beacons operating in the bands between 160 kHz and 535 kHz shall be based on a protection ratio against interference of at least 15 dB for each beacon throughout its service area.

2855 (2) The radiated power should be kept to the minimum value necessary to give the desired field strength at the service range.

2856 (3) The daylight service range of radiobeacons referred to in No. **2854** shall be based on the following field strengths:

2857 (4) *Regions 1 and 2*

- 70 microvolts per metre for radiobeacons north of 30° N;
- 120 microvolts per metre for radiobeacons between 30° N and 30° S;
- 70 microvolts per metre for radiobeacons south of 30° S.

2858

(5) *Region 3*

- 70 microvolts per metre for radiobeacons north of 40° N;
- 120 microvolts per metre for radiobeacons between 40° N and 50° S;
- 70 microvolts per metre for radiobeacons south of 50° S.

2859

C. Maritime Radiobeacons

2860

Mob-83

§ 15. (1) The protection ratio required for assignment of frequencies to maritime radiobeacons operating in the bands between 283.5 kHz and 335 kHz shall be based on the effective radiated power being kept to the minimum value necessary to give the desired field strength at the service range and the need to provide adequate geographical separation between radiobeacons operating on the same frequency and at the same time, to avoid harmful interference.

2861

(2) The daylight service range of the radiobeacons referred to in No. 2860 shall be based on the following field strengths:

2862

(3) *Region 1*

- 50 microvolts per metre for radiobeacons north of 43° N;
- 75 microvolts per metre for radiobeacons between 43° N and 30° N;
- 100 microvolts per metre for radiobeacons between 30° N and 30° S;
- 75 microvolts per metre for radiobeacons between 30° S and 43° S;
- 50 microvolts per metre for radiobeacons south of 43° S.

2863

(4) *Region 2*

- 50 microvolts per metre for radiobeacons north of 40° N;
- 75 microvolts per metre for radiobeacons between 40° N and 31° N;

- 100 microvolts per metre for radiobeacons between 31° N and 30° S;
- 75 microvolts per metre for radiobeacons between 30° S and 43° S;
- 50 microvolts per metre for radiobeacons south of 43° S.

2864

(5) *Region 3*

- 75 microvolts per metre for radiobeacons north of 40° N;
- 100 microvolts per metre for radiobeacons between 40° N and 50° S;
- 75 microvolts per metre for radiobeacons south of 50° S.

2865

Mob-83

(6) The carrier frequencies of maritime radiobeacons and the separation between channels shall be based on the use of integer multiples of 100 Hz. The separation between adjacent carrier frequencies should be based on relevant CCIR Recommendations.

2866

Mob-83

SUP

2867

to

2891

NOT allocated.

ARTICLE 36

Radio Astronomy Service**Section I. General Provisions**

- 2892** § 1. Administrations shall cooperate in protecting the radio astronomy service from interference, bearing in mind:
- 2893** a) the exceptionally high sensitivity of radio astronomy stations;
- 2894** b) the frequent need for long periods of observation without harmful interference; *and*
- 2895** c) that the small number of radio astronomy stations in each country and their known locations often make it practicable to give special consideration to the avoidance of interference.
- 2896** § 2. The locations of the radio astronomy stations to be protected and their frequencies of observation shall be notified to the IFRB in accordance with No. **1492** and published by the Secretary-General in accordance with No. **2237** for communication to Members.

**Section II. Measures to Be Taken in the
Radio Astronomy Service**

- 2897** § 3. The locations of radio astronomy stations shall be selected with due regard to the possibility of harmful interference to these stations.
- 2898** § 4. All practicable technical means shall be adopted at radio astronomy stations to reduce their susceptibility to interference. The development of improved techniques for reducing susceptibility to interference shall be pursued, including participation in cooperative studies through the CCIR.

Section III. Protection of the Radio Astronomy Service

- 2899** § 5. The status of the radio astronomy service in the various frequency bands is specified in the Table of Frequency Allocations, Article 8. Administrations shall provide protection from interference to stations in the radio astronomy service in accordance with the status of this service in those bands (see also Nos. **344**, **2632** to **2634** and **2635**).
- 2900** § 6. In providing protection from interference to the radio astronomy service on a permanent or temporary basis, administrations shall use appropriate means such as geographical separation, site shielding, antenna directivity and the use of time-sharing and the minimum practicable transmitter power.
- 2901** § 7. In bands adjacent to those in which observations are carried out in the radio astronomy service, operating in accordance with these Regulations, administrations are urged, when assigning frequencies to stations of other services, to take all practicable steps to protect the radio astronomy service from harmful interference in accordance with No. **343**. In addition to the measures referred to in No. **2900**, technical means for minimizing the power radiated at frequencies within the band used for radio astronomy should be given special consideration (see also No. **344**).
- 2902** § 8. When assigning frequencies to stations in other bands, administrations are urged, as far as practicable, to take into consideration the need to avoid spurious emissions which could cause harmful interference to the radio astronomy service operating in accordance with these Regulations (see also No. **344**).
- 2903** § 9. In applying the measures outlined in this Section, administrations are urged to bear in mind that the radio astronomy service is extremely susceptible to interference from space and airborne transmitters.

2904 § 10. Administrations shall take note of the relevant CCIR
Recommendations with the aim of limiting interference to the
radio astronomy service from other services.

2905
to NOT allocated.
2929

Distress and Safety Communications ¹

General Provisions

2931 § 2. The procedure specified in this Chapter is obligatory in the maritime mobile-satellite service and for communications between stations on board aircraft and stations of the maritime mobile-satellite service, where this service or stations of this service are specifically mentioned. Nos. **3086, 3090, 3095, 3096, 3097, 3098, 3200, 3203** and **3223** are also applicable.

2932 § 3. (1) No provision of these Regulations prevents the use by a
Mob-83 mobile station or mobile earth station in distress of any means at
its disposal to attract attention, make known its position, and
obtain help.

C.IX ¹ For the purposes of this Chapter, distress and safety commu-
Mob-83 nications include distress, urgency and safety calls and messages.

2933 (2) No provision of these Regulations prevents the use by
Mob-83 stations on board aircraft or ships engaged in search and rescue operations, in exceptional circumstances, of any means at their disposal to assist a mobile station or mobile earth station in distress.

2934 (3) No provision of these Regulations prevents the use by a
Mob-83 land station or coast earth station, in exceptional circumstances, of any means at its disposal to assist a mobile station or mobile earth station in distress (see also No. 959).

2934A § 3A. Ship earth stations located at Rescue Coordination
Mob-87 Centres¹ may be authorized by an administration to communicate for distress and safety purposes with any other station using bands allocated to the maritime mobile-satellite service, when special circumstances make it essential, notwithstanding the methods of working provided for in these Regulations.

2935 § 4. In cases of distress, urgency or safety, transmissions:

2936 a) by telegraphy, when using Morse, shall not in
Mob-83 general exceed a speed of sixteen words a minute;

2937 b) by radiotelephony, shall be made slowly and distinctly, each word being clearly pronounced to facilitate transcription.

2937A § 4A. Distress, urgency and safety transmissions may also be
Mob-87 made, taking into account No. 2945, using digital selective calling and satellite techniques and/or direct-printing telegraphy, in accordance with relevant CCIR Recommendations.

2934A.1 ¹ The term "Rescue Coordination Centre" as defined in the
Mob-87 International Convention on Maritime Search and Rescue, 1979, refers to a unit responsible for promoting the efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.

2938 § 5. The abbreviations and signals of Appendix 14 and the
Mob-87 Phonetic Alphabet and Figure Code in Appendix 24 should be used where applicable.¹

2939 § 6. (1) The International Convention for the Safety of Life at Sea prescribes which ships and which of their survival craft shall be fitted with radio equipment and which ships shall carry portable radio equipment for use in survival craft. It also prescribes the requirements which shall be complied with by such installations.

2940 (2) The Annexes to the Convention on International Civil
Mob-87 Aviation state which aircraft should be fitted with radio equipment and which aircraft should carry portable survival radio equipment. They state also the requirements which should be complied with by such installations.

2941 § 7. The applicable provisions of the present Regulations shall, however, be observed in the use of all such installations.

2942 § 8. Mobile stations² of the maritime mobile service may
Mob-87 communicate, for safety purposes, with stations of the aeronautical mobile service. Such communications shall normally be made on the frequencies authorized, and under the conditions specified, in Section I of Article 38 (see also No. 2932).

2938.1 ¹ The use of the Standard Marine Navigational Vocabulary
Mob-87 and, where language difficulties exist, the International Code of Signals, both published by the International Maritime Organization, is also recommended.

2942.1 ² Mobile stations communicating with the stations of the
Mob-87 aeronautical mobile (R) service in bands allocated to the aeronautical mobile (R) service shall conform to the provisions of the Regulations which relate to that service and, as appropriate, any special arrangements between the governments concerned by which the aeronautical mobile (R) service is regulated.

2942A § 8A. Mobile stations of the aeronautical mobile service may
Mob-87 communicate, for distress and safety purposes, with stations of the maritime mobile service in conformity with the provisions of this Chapter.

2943 § 9. Any aircraft required by national or international regu-
Mob-87 lations to communicate for distress, urgency or safety purposes with stations of the maritime mobile service shall be capable:

2943A a) until the full implementation of the global maritime
Mob-87 distress and safety system (GMDSS), of transmitting preferably class A2A or H2A and receiving preferably class A2A and H2A emissions on the carrier frequency 500 kHz or, on the carrier frequency 2 182 kHz, transmitting class J3E or H3E and receiving class A3E, J3E and H3E emissions¹ or, on the carrier frequency 4 125 kHz, transmitting and receiving J3E emissions or, on the frequency 156.8 MHz, transmitting and receiving class G3E emissions (see also Resolution 331 (**Mob-87**));

2943B b) after the full implementation of the GMDSS, of
Mob-87 transmitting and receiving class J3E emissions when using the carrier frequency 2 182 kHz or the carrier frequency 4 125 kHz or class G3E emissions when using the frequency 156.8 MHz and, optionally, 156.3 MHz.

2943.1 SUP
Mob-87

2943A.1 ¹ As an exception, the requirement to receive class A3E emis-
Mob-87 sions on the carrier frequency 2182 kHz may be made optional when permitted by national regulations.

2944 SUP
Mob-87

2945 § 11. Until the full implementation of the GMDSS and until a
Mob-87 competent conference decides otherwise, all provisions of the
Radio Regulations pertaining to the present distress, urgency and
safety communications shall be maintained in force (see Resolu-
tion 331 (**Mob-87**)).

2946 to 2949 SUP
Mob-87

2950
to NOT allocated.
2966

ARTICLE 38

Frequencies for Distress and Safety**Section 1. Availability of Frequencies**

2967 and 2968 SUP
Mob-87

2969 *A. 500 kHz*
Mob-87

2970 § 1. (1) The frequency 500 kHz is the international distress
Mob-87 frequency for Morse telegraphy (see also No. 472); it shall be used for this purpose by ship, aircraft and survival craft stations which employ Morse telegraphy on frequencies in the bands between 415 kHz and 535 kHz when requesting assistance from the maritime services. It shall be used for the distress call and distress traffic, for the urgency signal and urgency messages, for the safety signal and, outside regions of heavy traffic, for short safety messages. When practicable, safety messages shall be transmitted on the working frequency after a preliminary announcement on 500 kHz (see also No. 4236). For distress and safety purposes, the classes of emission to be used on 500 kHz shall be A2A, A2B, H2A or H2B (see also No. 3042 and Resolution 331 (Mob-87)).

2971 (2) However, ship and aircraft stations which cannot transmit on 500 kHz should use any other available frequency on which attention might be attracted.

2971A *B. 518 kHz*
Mob-87

2971B § 1A. In the maritime mobile service, the frequency 518 kHz is
Mob-87 used exclusively for the transmission by coast stations of meteorological and navigational warnings and urgent information to ships, by means of narrow-band direct-printing telegraphy using the international NAVTEX system.

2971C and 2971D SUP
Mob-87

2972*C. 2 182 kHz***Mob-87****2973****Mob-87**

§ 2. (1) The carrier frequency 2 182 kHz¹ is an international distress frequency for radiotelephony (see also Nos. **500** and **501**); it shall be used for this purpose by ship, aircraft and survival craft stations and by emergency position-indicating radiobeacons using frequencies in the authorized bands between 1 605 kHz and 4 000 kHz when requesting assistance from the maritime services. It is used for distress calls and distress traffic, for signals of emergency position-indicating radiobeacons, for the urgency signal and urgency messages and for the safety signal. Safety messages shall be transmitted, where practicable, on a working frequency after a preliminary announcement on 2 182 kHz. The class of emission to be used for radiotelephony on the frequency 2 182 kHz shall be H3E. Class of emission A3E may continue to be used by apparatus intended solely for distress, urgency and safety purposes (see No. **4127**). The class of emission to be used by emergency position-indicating radiobeacons shall be as specified in Appendix 37 (see also No. **3265**). The class of emission J3E may be used for the exchange of distress traffic on 2 182 kHz following the acknowledged reception of a distress call using digital selective calling techniques on 2 187.5 kHz taking into account that other shipping in the vicinity may not be able to receive this traffic (see also No. N **2974** and Resolution 331 (**Mob-87**)).

2974**Mob-87**

(2) If a distress message on the carrier frequency 2 182 kHz has not been acknowledged, the radiotelephone alarm signal, whenever possible followed by the distress call and message, may be transmitted again on a carrier frequency of 4 125 kHz or 6 215 kHz, as appropriate (see Nos. **2982**, **2986** and **3054**).

2973.1**Mob-83**

¹ Where administrations provide at their coast stations a watch on 2 182 kHz for receiving class J3E emissions as well as class A3E and H3E emissions, ship stations may communicate with them using class J3E emissions.

2975 (3) However, ship and aircraft stations which can transmit
Mob-87 neither on the carrier frequency 2 182 kHz nor, in accordance with No. **2974**, on the carrier frequencies 4 125 kHz or 6 215 kHz, should use any other available frequency on which attention might be attracted.

2976 SUP
Mob-83

2977 (4) Any coast station using the carrier frequency 2 182 kHz for distress purposes shall be able to transmit the radiotelephone alarm signal described in No. **3270** (see also Nos. **3277**, **3278** and **3279**).

2978 (5) Any coast station authorized to send navigational warnings should be able to transmit the navigational warning signal described in Nos. **3284**, **3285** and **3286**.

2978A and 2978B SUP
Mob-87

2979 *D. 3 023 kHz*
Mob-87

2980 § 3. The aeronautical carrier (reference) frequency 3 023 kHz
Mob-83 may be used for intercommunication between mobile stations when they are engaged in coordinated search and rescue operations, and for communication between these stations and participating land stations, in accordance with the provisions of Appendix **27 Aer2** (see Nos. **501** and **505**).

2981 *E. 4 125 kHz*
Mob-87

2982 § 4. (1) The carrier frequency 4 125 kHz is used to supplement
Mob-87 the carrier frequency 2 182 kHz for distress and safety purposes and for call and reply (see also No. **520**). This frequency is also used for distress and safety traffic by radiotelephony (see also No. N **2980** and Resolution **331 (Mob-87)**).

2982A (2) The carrier frequency 4 125 kHz may be used by aircraft
Mob-87 stations to communicate with stations of the maritime mobile service for distress and safety purposes, including search and rescue (see Nos. **2943**, **2943A** and **2943B**).

2982B to 2982E SUP
Mob-87

2983 *F. 5 680 kHz*
Mob-87

2984 § 5. The aeronautical carrier (reference) frequency 5 680 kHz
Mob-83 may be used for intercommunication between mobile stations when they are engaged in coordinated search and rescue operations, and for communication between these stations and participating land stations, in accordance with the provisions of Appendix 27 **Aer2** (see also Nos. **501** and **505**).

2985 *G. 6 215 kHz*
Mob-87

2986 § 6. The carrier frequency 6 215 kHz is used to supplement
Mob-87 the carrier frequency 2 182 kHz for distress and safety purposes and for call and reply (see also No. **520**). This frequency is also used for distress and safety traffic by radiotelephony (see also No. N **2986** and Resolution **331 (Mob-87)**).

2986A to 2986H SUP
Mob-87

2987 *H. 8 364 kHz*
Mob-87

2988 § 7. The frequency 8 364 kHz is designated for use by sur-
Mob-87 vival craft stations if they are equipped to transmit on frequencies in the bands between 4 000 kHz and 27 500 kHz and if they wish to establish communications relating to search and rescue operations with stations of the maritime and aeronautical mobile services (see also No. **501** and Resolution **331 (Mob-87)**).

2988A to 2988N SUP
Mob-87

2989
Mob-87

I. 121.5 MHz and 123.1 MHz

2990
Mob-83

SUP

2990A § 8. (1A)The aeronautical emergency frequency 121.5 MHz¹ is
Mob-83 used for the purposes of distress and urgency for radiotelephony by stations of the aeronautical mobile service using frequencies in the band between 117.975 MHz and 136 MHz (137 MHz after 1 January 1990). This frequency may also be used for these purposes in survival craft stations and emergency position-indicating radiobeacons.

2990B (1B)The aeronautical auxiliary frequency 123.1 MHz, which
Mob-83 is auxiliary to the aeronautical emergency frequency 121.5 MHz, is for use by stations of the aeronautical mobile service and by other mobile and land stations engaged in coordinated search and rescue operations (see also No. **593**).

2991 (2) Mobile stations of the maritime mobile service may
Mob-83 communicate with stations of the aeronautical mobile service on the aeronautical emergency frequency 121.5 MHz for the purposes of distress and urgency only, and on the aeronautical auxiliary frequency 123.1 MHz for coordinated search and rescue operations, using class A3E emissions for both frequencies (see also Nos. **501** and **593**). They shall then comply with any special arrangements between the governments concerned by which the aeronautical mobile service is regulated.

2992
Mob-87

J. 156.3 MHz

2993 § 9. The frequency 156.3 MHz may be used for communica-
Mob-83 tion between ship stations and aircraft stations, using G3E emission, engaged in coordinated search and rescue operations. It may

2990A.1 ¹ Normally aircraft stations transmit distress and urgency
Mob-83 messages on the working frequency in use at the time of the distress or urgency incident.

also be used by aircraft stations to communicate with ship stations for other safety purposes (see also note *g*) of Appendix 18).

2993A and 2993B SUP

Mob-87

2993C

K. 156.650 MHz

Mob-87

2993D § 9B. The frequency 156.650 MHz is used for ship-to-ship
Mob-87 communications relating to the safety of navigation in accordance with note *p*) of Appendix 18.

2993E

L. 156.8 MHz

Mob-87

2994 § 10. (1) The frequency 156.8 MHz is the international distress,
Mob-87 safety and calling frequency for radiotelephony for stations of the maritime mobile service when they use frequencies in the authorized bands between 156 MHz and 174 MHz (see also Nos. 501 and 613). It is used for the distress signal, the distress call and distress traffic, as well as for the urgency signal, urgency traffic and the safety signal (see also No. 2995A). Safety messages shall be transmitted where practicable on a working frequency after a preliminary announcement on 156.8 MHz (see No. N 3041, Appendix 19 and also Resolution 331 (Mob-87)).

2995 (2) However, ship stations which cannot transmit on 156.8 MHz should use any other available frequency on which attention might be attracted.

2995A (3) The frequency 156.8 MHz may be used by aircraft
Mob-83 stations for safety purposes only.

2995B and 2995C SUP

Mob-87

2996

M. 243 MHz

Mob-87

(See Nos. 501 and 642)

2997
Mob-87

N. 406 - 406.1 MHz Band

2997A § 10B. The frequency band 406 - 406.1 MHz is used exclusively
Mob-83 by satellite emergency position-indicating radiobeacons in the Earth-to-space direction (see No. **649**).

2998
Mob-87

O. 1 544 - 1 545 MHz Band

2998A § 10C. Use of the band 1 544 - 1 545 MHz (space-to-Earth) is
Mob-87 limited to distress and safety operations (see No. **727A**); including:

2998B a) feeder links of satellites needed to relay the emis-
Mob-83 sions of satellite emergency position-indicating radiobeacons to earth stations;

2998C b) narrow-band (space-to-Earth) links from space sta-
Mob-83 tions to mobile stations.

2998D
Mob-87

P. 1 645.5 - 1 646.5 MHz Band

2998E § 10D. Use of the band 1 645.5 - 1 646.5 MHz (Earth-to-space)
Mob-87 is limited to distress and safety operations (see No. **734B**); including:

2998EA a) transmissions from satellite EPIRBs;
Mob-87

2998EB b) relay of distress alerts received by satellites in low
Mob-87 polar earth orbits to geostationary satellites.

2999
Mob-87

Q. Aircraft in Distress

3000 § 11. Any aircraft in distress shall transmit the distress call on
the frequency on which watch is kept by the land or mobile stations capable of helping it. When the call is intended for stations in the maritime mobile service, the provisions of Nos. **2970** and **2971** or **2973** and **2975** or **2994** and **2995** shall be complied with.

3001
Mob-87

R. Survival Craft Stations

3002 § 12. Equipment provided for use in survival craft stations shall, if capable of operating on any frequency:

3003
Mob-83

a) *in the authorized bands between 415 kHz and 526.5 kHz*, be able to transmit with a carrier frequency of 500 kHz using either class A2A and A2B * or H2A and H2B * emissions. If a receiver is provided for any of these bands, it shall be able to receive class A2A and H2A emissions on a carrier frequency of 500 kHz;

3004

b) *in the bands between 1 605 kHz and 2 850 kHz*, be able to transmit with a carrier frequency of 2 182 kHz using class A3E or H3E emissions. If a receiver is provided for any of these bands, it shall be able to receive class A3E and H3E emissions on a carrier frequency of 2 182 kHz;

3005

c) *in the bands between 4 000 kHz and 27 500 kHz*, be able to transmit with a carrier frequency of 8 364 kHz using class A2A or H2A emissions. If a receiver is provided for any of these bands, it shall be able to receive class A1A, A2A and H2A emissions throughout the band 8 341.75 - 8 728.5 kHz;

3006
Mob-83

d) *in the bands between 117.975 MHz and 136 MHz (137 MHz after 1 January 1990)*, be able to transmit on 121.5 MHz, using amplitude modulated emissions. If a receiver is provided for any of these bands, it shall be able to receive class A3E emissions on 121.5 MHz;

* This is to cater for the automatic reception of the radiotelegraph alarm signal.

- | | |
|--|--|
| 3007 | e) <i>in the bands between 156 MHz and 174 MHz, be able to transmit on 156.8 MHz using class G3E emissions. If a receiver is provided for any of these bands it shall be able to receive class G3E emissions on 156.8 MHz;</i> |
| 3008 | f) <i>in the bands between 235 MHz and 328.6 MHz, be able to transmit on the frequency 243 MHz.</i> |
| 3008A to 3008D
Mob-87 | SUP |

Mob-83 Section II. Protection of Distress and Safety Frequencies3009 *A. General*

- 3010** § 13. Except as provided for in these Regulations, any emission capable of causing harmful interference to distress, alarm, urgency or safety communications on the frequencies 500 kHz, 2 174.5 kHz, 2 182 kHz, 2 187.5 kHz, 4 125 kHz, 4 177.5 kHz, 4 207.5 kHz, 6 215 kHz, 6 268 kHz, 6 312 kHz, 8 291 kHz, 8 376.5 kHz, 8 414.5 kHz, 12 290 kHz, 12 520 kHz, 12 577 kHz, 16 420 kHz, 16 695 kHz, 16 804.5 kHz, 121.5 MHz, 156.525 MHz, 156.8 MHz or in the frequency bands 406 - 406.1 MHz, 1 544 - 1 545 MHz and 1 645.5 - 1 646.5 MHz (see also No. N 3067) is prohibited. Any emission causing harmful interference to distress and safety communications on any of the other discrete frequencies identified in Section I of this Article and in Section I of Article N 38 is prohibited.
- 3011** § 14. (1) Test transmissions shall be kept to a minimum on the frequencies identified in Section I of this Article and should, wherever practicable, be carried out on artificial antennas or with reduced power.

3012 to 3015 SUP
Mob-83

3016 (2) It is not permitted to transmit complete alarm signals
Mob-87 for testing purposes on any frequency except for essential tests coordinated with the competent authorities. As an exception, such tests are permitted for radiotelephone equipment which can operate only on either of the international distress frequencies 2 182 kHz and 156.8 MHz, in which case a suitable artificial antenna shall be employed.

3016A § 14A.(1) Before transmitting on any of the frequencies identified
Mob-83 in Section I for distress and safety, a station shall listen on the frequency concerned to make sure that no distress transmission is being sent (see No. **4915**).

3016B (2) The provisions of No. **3016A** do not apply to stations in
Mob-83 distress.

3017 *B. 500 kHz*

3018 § 15. (1) Apart from the transmissions authorized on 500 kHz,
Mob-87 and taking account of No. **4226**, all transmissions on the frequencies included between 490 kHz and 510 kHz are forbidden (see No. **471** and Resolution **210 (Mob-87)**).

3019 (2) In order to facilitate the reception of distress calls, other transmissions on the frequency 500 kHz shall be reduced to a minimum, and in any case shall not exceed one minute.

3020 and 3021 SUP
Mob-83

3022*C. 2 182 kHz*

3023 § 16. (1) Except for transmissions authorized on the carrier frequency 2 182 kHz and on the frequencies 2 174.5 kHz, 2 177 kHz, 2 187.5 kHz and 2 189.5 kHz, all transmissions on the frequencies between 2 173.5 kHz and 2 190.5 kHz are forbidden (see also No. N 3071).

3024 and 3025 SUP
Mob-83

3026 (2) To facilitate the reception of distress calls, all transmissions on 2 182 kHz shall be kept to a minimum.

3027 (3) At sea it is not permitted to radiate test transmissions of the radiotelephone alarm signal on the carrier frequency 2 182 kHz. The function of the generator of the radiotelephone alarm signal shall be checked by aural monitoring without operating a transmitter. The transmitter shall be checked independently. During tests of the radio installation carried out by an administration or on behalf of an administration the radiotelephone alarm signal device should be checked with a suitable artificial antenna on frequencies other than 2 182 kHz. If the installation is capable of operating only on the frequency 2 182 kHz a suitable artificial antenna should be employed (see No. 3016).

3028 (4) Before and after the tests performed using an artificial antenna in accordance with No. 3027, a suitable announcement should be made on the test frequency that the signals are or were for testing purposes only. The identification of the station should be included in the announcement.

3029 to 3031 SUP
Mob-83

3031A *D. 121.5 MHz, 123.1 MHz and 243 MHz*
Mob-87

3031B § 17A. On the frequencies 121.5 MHz, 123.1 MHz and 243 MHz transmissions other than those authorized are forbidden (see Nos. 501, 593, 642, 2990A and 2990B).

3031C § 17B. In order to avoid unjustified alerts in automatic emergency systems, transmissions of non-operational test signals on the emergency frequencies 121.5 MHz and 243 MHz should be coordinated with the competent authorities and carried out only during the first five minutes of each hour, with each test transmission lasting no longer than ten seconds (see also No. **3011**).
Mob-87

3032 *E. 156.7625 - 156.8375 MHz Band*
Mob-87

3033 § 18. (1) All emissions in the band 156.7625 - 156.8375 MHz capable of causing harmful interference to the authorized transmissions of stations of the maritime mobile service on 156.8 MHz are forbidden.
Mob-87

3034 and 3035 SUP
Mob-83

3036 (2) To facilitate the reception of distress calls all transmissions on 156.8 MHz shall be kept to a minimum and shall not exceed one minute.

Section III. Watch on Distress Frequencies

3037 *A. 500 kHz*

3038 § 19. (1) In order to increase the safety of life at sea and over the sea, all stations of the maritime mobile service normally keeping watch on frequencies in the authorized bands between 415 kHz and 526.5 kHz which employ Morse telegraphy shall, during their hours of service, take the necessary measures to ensure watch on the international distress frequency 500 kHz for three minutes twice an hour beginning at x h 15 and x h 45, Coordinated Universal Time (UTC), by an operator using headphones or loudspeaker (see also Resolution **331 (Mob-87)**).
Mob-87

3033.1 SUP
Mob-83

3038A (1A) No. **3038** does not apply to a coast station open to
Mob-87 public correspondence when its operational area for distress purposes is covered by one or more coast stations keeping watch on 500 kHz in accordance with an agreement between the administrations concerned. These administrations shall inform the Secretary-General of the details of such agreements for publication in the List of Coast Stations (see Article **26** and Appendix **9**).

3039 (2) During the periods mentioned above, except for the
Mob-83 emissions provided for in this Chapter on the frequency 500 kHz:

3040 a) transmissions shall cease in the band between
Mob-87 490 kHz and 510 kHz (see also Resolution **210 (Mob-87)**);

3041 b) outside these bands, transmissions of stations of the
Mob-87 mobile service may continue; stations of the maritime mobile service may listen to these transmissions on the express condition that they first ensure watch on the distress frequency as required by No. **3038** (see also Resolution **331 (Mob-87)**).

3042 § 20. (1) Stations of the maritime mobile service open to Morse
Mob-87 telegraphy public correspondence and using frequencies in the authorized bands between 415 kHz and 526.5 kHz shall, during their hours of service, remain on watch on 500 kHz except in the situation referred to in No. **3038A**. This watch is obligatory only for class A2A and H2A emissions (see also Resolution **331 (Mob-87)**).

3043 (2) These stations, while observing the provisions of
Mob-87 No. **3038**, are authorized to relinquish this watch only when they are engaged in communications on other frequencies.

3044 (3) When they are engaged in such communications:

3045 a) ship stations may maintain this watch on 500 kHz
 by means of an operator using headphones or a loudspeaker or by some appropriate means such as an automatic alarm receiver;

3046 *b)* coast stations may maintain this watch on 500 kHz by means of an operator using headphones or a loudspeaker; in the latter case an indication may be inserted in the List of Coast Stations.

3046A (4) Ship stations, while observing the provisions of
Mob-87 No. **3038**, are also authorized to relinquish this watch¹ when it is impractical to listen by split headphones or by loudspeaker, and by order of the master in order to repair or carry out maintenance required to prevent imminent malfunction of:

3046B *a)* equipment for radiocommunication used for safety;
Mob-83

3046C *b)* radionavigational equipment;
Mob-83

3046D *c)* other electronic navigational equipment.
Mob-83

3046E (5) Ship stations fitted with an automatic alarm receiver
Mob-83 should ensure the equipment is in operation whenever watch is relinquished under the terms of No. **3046A**.

3047 *B. 2 182 kHz*

3048 § 21. (1) Coast stations which are open to public correspondence
Mob-87 and which form an essential part of the coverage of the area for distress purposes on 2 182 kHz shall, during their hours of service, maintain a watch on 2 182 kHz (see also Resolution **331 (Mob-87)**).

3049 (2) These stations shall maintain this watch by means of an operator using some aural method, such as headphones, split headphones or loudspeaker.

3046A.1 ¹ For additional information see the relevant provisions of the
Mob-87 International Convention for the Safety of Life at Sea (see also Resolution **331 (Mob-87)**).

3050 (3) In addition, ship stations should keep the maximum watch practicable on the carrier frequency 2 182 kHz for receiving by any appropriate means the radiotelephone alarm signal described in No. **3270**, and the navigational warning signal described in Nos. **3284**, **3285** and **3286**, as well as distress, urgency and safety signals.

3051 § 22. Ship stations open to public correspondence should, as far as possible during their hours of service, keep watch on 2 182 kHz.

3052 § 23. In order to increase the safety of life at sea and over the
Mob-87 sea, all stations of the maritime mobile service normally keeping watch on frequencies in the authorized bands between 1 605 kHz and 2 850 kHz shall, during their hours of service, and as far as possible, take steps to keep watch on the international distress carrier frequency 2 182 kHz for three minutes twice each hour beginning at x h 00 and x h 30, Coordinated Universal Time (UTC) (see also Resolution **331 (Mob-87)**).

3052A § 23A. During the periods referred to in No. **3052** all trans-
Mob-87 missions in the band 2 173.5-2 190.5 kHz shall cease, except those on 2 177 kHz and 2 189.5 kHz and those provided for in this Chapter and in Chapter N IX.

3053 *C. 4 125 kHz and 6 215 kHz*
Mob-87

3054 § 24. (1) All coast stations which are open to public correspon-
Mob-87 dence and which form an essential part of the coverage of the area for distress purposes may, during their hours of service, maintain a watch on the carrier frequencies 4 125 kHz or 6 215 kHz or both (see Nos. **2982** and **2986**). Such watch should be indicated in the List of Coast Stations.

3055 (2) These stations should maintain this watch by means of an operator using some aural method, such as headphones, split headphones or loudspeaker.

3056

D. 156.8 MHz

3057 § 25. (1) A coast station providing an international maritime
Mob-87 mobile radiotelephone service in the band 156-174 MHz and which forms an essential part of the coverage of the area for distress purposes should, during its working hours in that band, maintain an efficient aural watch on 156.8 MHz (see also Resolution **331 (Mob-87)** and Recommendation **306**).

3058 (2) Ship stations should, where practicable, maintain watch
Mob-87 on 156.8 MHz when within the service area of a coast station providing international maritime mobile radiotelephone service in the band 156 - 174 MHz. Ship stations fitted only with radiotelephone equipment operating in the authorized bands between 156 MHz and 174 MHz, should maintain watch on 156.8 MHz when at sea (see also Resolution **331 (Mob-87)**).

3059 (3) Ship stations, when in communication with a port
Mob-87 station, may, on an exceptional basis and subject to the agreement of the administration concerned, continue to maintain watch, on the appropriate port operations frequency only, provided that watch on 156.8 MHz is being maintained by the port station (see also Resolution **331 (Mob-87)**).

3060 (4) Ship stations, when in communication with a coast
Mob-87 station in the ship movement service and subject to the agreement of the administrations concerned, may continue to maintain watch on the appropriate ship movement service frequency only, provided the watch on 156.8 MHz is being maintained by the coast station (see also Resolution **331 (Mob-87)**).

3061

to

3085

NOT allocated.

ARTICLE 39

Distress Communications**Section I. General**

- 3086** § 1. The distress call shall have absolute priority over all other transmissions. All stations which hear it shall immediately cease any transmission capable of interfering with the distress traffic and shall continue to listen on the frequency used for the emission of the distress call. This call shall not be addressed to a particular station and acknowledgement of receipt shall not be given before the distress message which follows it is sent.
- 3087** § 2. The distress call and message shall be sent only on the authority of the master or person responsible for the ship, aircraft or other vehicle carrying the mobile station or ship earth station.

Section II. Distress Signal

- 3088** § 3. (1) The Morse radiotelegraph distress signal consists of the
Mob-87 group . . . — — . . ., symbolized herein by \overline{SOS} , transmitted as a single signal in which the dashes are emphasized so as to be distinguished clearly from the dots.
- 3089** (2) The radiotelephone distress signal consists of the word MAYDAY pronounced as the French expression "m'aider".
- 3090** (3) These distress signals indicate that a ship, aircraft or
Mob-87 other vehicle is threatened by grave and imminent danger and requests immediate assistance (see also No. 3279).

Section III. Distress Call

- 3091** § 4. (1) The distress call sent by Morse radiotelegraphy consists
Mob-87 of:
- the distress signal \overline{SOS} , sent three times;
 - the word DE;
 - the call sign of the mobile station in distress, sent three times.

- 3092** (2) The distress call sent by radiotelephony consists of:
- the distress signal MAYDAY, spoken three times;
 - the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
 - the call sign or other identification of the mobile station in distress, spoken three times.

Section IV. Distress Messages

- 3093** § 5. (1) The Morse radiotelegraph distress message consists of:
Mob-87
- the distress signal \overline{SOS} ;
 - the name, or other identification, of the mobile station in distress;
 - particulars of its position;
 - the nature of the distress and the kind of assistance desired;
 - any other information which might facilitate the rescue.

- 3094** (2) The radiotelephone distress message consists of:
- the distress signal MAYDAY;
 - the name, or other identification, of the mobile station in distress;
 - particulars of its position;
 - the nature of the distress and the kind of assistance desired;
 - any other information which might facilitate the rescue.

3095 § 6. (1) As a general rule, a ship shall signal its position in
Mob-87 latitude and longitude (Greenwich), using figures for the degrees and minutes, together with one of the words NORTH or SOUTH and one of the words EAST or WEST. In Morse radiotelegraphy, the signal · — · — · — shall be used to separate the degrees from the minutes; however, this shall not necessarily apply to the maritime mobile-satellite service. When practicable, the true bearing and distance in nautical miles from a known geographical position may be given.

3096 (2) As a general rule, and if time permits, an aircraft shall transmit in its distress message the following information:

- estimated position and time of the estimate;
- heading in degrees (state whether magnetic or true);
- indicated air speed;
- altitude;
- type of aircraft;
- nature of distress and type of assistance desired;
- any other information which might facilitate the rescue (including the intention of the person in command, such as forced alighting on the sea or crash landing).

3097 (3) As a general rule, an aircraft in flight shall signal its
Mob-87 position either in radiotelephony or Morse radiotelegraphy;

- by latitude and longitude (Greenwich) using figures for the degrees and minutes, together with one of the words NORTH or SOUTH and one of the words EAST or WEST; or
- by the name of the nearest place, and its approximate distance in relation thereto, together with one of the words NORTH, SOUTH, EAST or WEST, as the case may be, or when practicable, by words indicating intermediate directions.

3098 (4) However, in Morse radiotelegraphy, the words NORTH
Mob-87 or SOUTH and EAST or WEST, indicated in Nos. **3095** and **3097**, may be replaced by the letters N or S and E or W.

Section V. Procedures

3099

A. Morse Radiotelegraphy

Mob-87

3100 § 7. (1) The Morse radiotelegraph distress procedure shall consist of:
Mob-87

3101 — the alarm signal; followed in order by:

3102 — the distress call and an interval of two minutes;

3103 — the distress call;

3104 — the distress message;

3105 — two dashes of ten to fifteen seconds' duration each;

3106 — the call sign of the station in distress.

3107 (2) However, when time is vital, the second step of this procedure (No. **3102**) or even the first and second steps (Nos. **3101** and **3102**), may be omitted or shortened. These two steps of the distress procedure may also be omitted in circumstances where transmission of the alarm signal is considered unnecessary.

3108 § 8. (1) The distress message, preceded by the distress call, shall be repeated at intervals, especially during the periods of silence prescribed in No. **3038** for Morse radiotelegraphy, until an answer is received.
Mob-87

3109 (2) The intervals shall, however, be sufficiently long to allow time for stations preparing to reply to start their sending apparatus.

3110 (3) The alarm signal may also be repeated, if necessary.

3111 § 9. The transmissions under Nos. **3105** and **3106**, which are to permit direction-finding stations to determine the position of the station in distress, may be repeated at frequent intervals if necessary.

3112 § 10. When the mobile station in distress receives no answer to a distress message sent on the distress frequency, the message may be repeated on any other available frequency on which attention might be attracted.

3113 § 11. Immediately before a crash landing or a forced landing (on land or sea) of an aircraft, as well as before total abandonment of a ship or an aircraft, the radio apparatus should be set for continuous emission, if considered necessary and circumstances permit.

3114 *B. Radiotelephony*

3115 § 12. The radiotelephone distress procedure shall consist of:

- 3116** — the alarm signal (whenever possible) followed by:
- 3117** — the distress call;
- 3118** — the distress message.

3119 § 13. After the transmission by radiotelephony of its distress message, the mobile station may be requested to transmit suitable signals followed by its call sign or other identification, to permit direction-finding stations to determine its position. This request may be repeated at frequent intervals if necessary.

3120 § 14. (1) The distress message, preceded by the distress call, shall be repeated at intervals, especially during the periods of silence prescribed in No. **3052** for radiotelephony, until an answer is received.

3121 (2) The intervals shall, however, be sufficiently long to allow time for stations preparing to reply to start their sending apparatus.

3122 (3) This repetition shall be preceded by the alarm signal whenever possible.

3123 § 15. When the mobile station in distress receives no answer to a distress message sent on the distress frequency, the message may be repeated on any other available frequency on which attention might be attracted.

- 3124** § 16. Immediately before a crash landing or a forced landing (on land or sea) of an aircraft, as well as before total abandonment of a ship or an aircraft, the radio apparatus should be set for continuous emission, if considered necessary and circumstances permit.

Section VI. Acknowledgement of Receipt of a Distress Message

- 3125** § 17. (1) Stations of the mobile service which receive a distress message from a mobile station which is, beyond any possible doubt, in their vicinity, shall immediately acknowledge receipt.

- 3126** (2) However, in areas where reliable communications with one or more coast stations are practicable, ship stations should defer this acknowledgement for a short interval so that a coast station may acknowledge receipt.

- 3127** (3) Stations of the mobile service which receive a distress message from a mobile station which, beyond any possible doubt, is not in their vicinity, shall allow a short interval of time to elapse before acknowledging receipt of the message, in order to permit stations nearer to the mobile station in distress to acknowledge receipt without interference.

- 3128** (4) However, stations in the maritime mobile service which receive a distress message from a mobile station which, beyond any possible doubt, is a long distance away, need not acknowledge receipt of messages except as specified in No. **3160**.

- 3129** § 18. The acknowledgement of receipt of a distress message shall be given in the following form:

- 3130** a) Morse radiotelegraphy:
Mob-87
- the distress signal $\overline{\text{SOS}}$;
 - the call sign of the station sending the distress message, sent three times;
 - the word DE;
 - the call sign of the station acknowledging receipt, sent three times;
 - the group RRR;
 - the distress signal $\overline{\text{SOS}}$.

3131

b) Radiotelephony:

- the distress signal MAYDAY;
- the call sign or other identification of the station sending the distress message, spoken three times;
- the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
- the call sign or other identification of the station acknowledging receipt, spoken three times;
- the word RECEIVED (or RRR spoken as ROMEO ROMEO ROMEO in case of language difficulties);
- the distress signal MAYDAY.

3132

§ 19. (1) Every mobile station which acknowledges receipt of a distress message shall, on the order of the master or person responsible for the ship, aircraft or other vehicle, transmit, as soon as possible, the following information in the order shown:

- its name;
- its position in the form prescribed in Nos. **3095**, **3097** and **3098**;
- the speed at which it is proceeding towards, and the approximate time it will take to reach, the mobile station in distress;
- additionally, if the position of the ship in distress appears doubtful, ship stations should also transmit, when available, the true bearing of the ship in distress preceded by the abbreviation QTE (for classification of bearings, see Appendix 41).

3133

(2) Before transmitting the message specified in No. **3132**, the station shall ensure that it will not interfere with the emissions of other stations better situated to render immediate assistance to the station in distress.

Section VII. Distress Traffic

- 3134** § 20. Distress traffic consists of all messages relating to the immediate assistance required by the mobile station in distress.
- 3135** § 21. In distress traffic, the distress signal shall be sent before the call and at the beginning of the preamble of any radiotelegram.
- 3136** § 22. The control of distress traffic is the responsibility of the mobile station in distress or of the station which, by the application of the provisions of Section VIII of the present Article, has sent the distress message. These stations may, however, delegate the control of the distress traffic to another station.
- 3137** § 23. The station in distress or the station in control of distress traffic may impose silence either on all stations of the mobile service in the area or on any station which interferes with the distress traffic. It shall address these instructions "to all stations" (CQ) or to one station only, according to circumstances. In either case, it shall use:
- 3138** a) in Morse radiotelegraphy, the abbreviation QRT,
Mob-87 followed by the distress signal SOS;
 - 3139** b) in radiotelephony, the signal SEELONCE
MAYDAY, pronounced as the French expression
"silence, m'aider".
- 3140** § 24. If it is believed to be essential, any station of the mobile service near the ship, aircraft or other vehicle in distress may also impose silence. It shall use for this purpose:
- 3141** a) in Morse radiotelegraphy, the abbreviation QRT,
Mob-87 followed by the word DISTRESS and its own call sign;
 - 3142** b) in radiotelephony, the word SEELONCE, pronounced as the French word "silence", followed by the word DISTRESS and its own call sign.
- 3143** § 25. (1) In Morse radiotelegraphy, the use of the signal QRT
Mob-87 SOS shall be reserved for the mobile station in distress and for the station controlling distress traffic.

- 3144** (2) In radiotelephony, the use of the signal SEELONCE MAYDAY shall be reserved for the mobile station in distress and for the station controlling distress traffic.
- 3145** § 26. (1) Any station of the mobile service which has knowledge of distress traffic and which cannot itself assist the station in distress shall nevertheless follow such traffic until it is evident that assistance is being provided.
- 3146** (2) Until they receive the message indicating that normal working may be resumed (see No. **3150**), all stations which are aware of the distress traffic, and which are not taking part in it, are forbidden to transmit on the frequencies on which the distress traffic is taking place.
- 3147** § 27. A station of the mobile service which, while following distress traffic, is able to continue its normal service, may do so when the distress traffic is well established and on condition that it observes the provisions of No. **3146** and does not interfere with the distress traffic.
- 3148** § 28. In cases of exceptional importance and provided that no interference or delay is caused to the handling of distress traffic, urgency and safety messages may be announced during a lull in the distress traffic, preferably by coast stations, on the distress frequencies. This announcement shall include an indication of the working frequency on which the urgency or safety message will be transmitted. In this case, the signals provided for in Nos. **3196**, **3197**, **3221** and **3222** should only be sent once (e.g. XXX DE ABC QSW ...).
- 3149** § 29. A land station or an earth station in the maritime mobile-satellite service at a specified fixed point receiving a distress message shall, without delay, take the necessary action to advise the appropriate authorities responsible for providing for the operation of rescue facilities.
- 3150** § 30. (1) When distress traffic has ceased on a frequency which has been used for distress traffic, the station which has controlled this traffic shall transmit on that frequency a message addressed "to all stations" (CQ) indicating that normal working may be resumed.

3151 (2) When complete silence is no longer necessary on a frequency which is being used for distress traffic, the station controlling the traffic shall transmit on that frequency a message addressed “to all stations” (CQ) indicating that restricted working may be resumed.

3152 (3) *a*) In Morse radiotelegraphy, the message referred to
Mob-87 in No. **3150** consists of:

- the distress signal $\overline{\text{SOS}}$;
- the call “to all stations” (CQ) sent three times;
- the word DE;
- the call sign of the station sending the message;
- the time of handing in of the message;
- the name and call sign of the mobile station which was in distress;
- the service abbreviation QUM.

3153 *b*) In Morse radiotelegraphy, the message referred to
Mob-87 in No. **3151** consists of:

- the distress signal $\overline{\text{SOS}}$;
- the call “to all stations” (CQ) sent three times;
- the word DE;
- the call sign of the station sending the message;
- the time of handing in of the message;
- the name and call sign of the mobile station which is in distress;
- the service abbreviation QUZ.

3154 (4) *a*) In radiotelephony, the message referred to in No. **3150** consists of:

- the distress signal MAYDAY;
- the call “Hello all stations” or CQ (spoken as CHARLIE QUEBEC) spoken three times;

- the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
- the call sign or other identification of the station sending the message;
- the time of handing in of the message;
- the name and call sign of the mobile station which was in distress;
- the words SEELONCE FEENEE pronounced as the French words “silence fini”.

3155

b) In radiotelephony, the message referred to in No. **3151** consists of:

- the distress signal MAYDAY;
- the call “Hello all stations” or CQ (spoken as CHARLIE QUEBEC) spoken three times;
- the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
- the call sign or other identification of the station sending the message;
- the time of handing in of the message;
- the name and call sign of the mobile station which is in distress;
- the word PRU-DONCE pronounced as the French word “prudence”.

3156

§ 31. When a station in distress has delegated control of distress working to another station, the person in charge of the station in distress should, when he considers silence no longer justified, immediately inform the controlling station, which will act in accordance with the provisions of No. **3150**.

**Section VIII. Transmission of a Distress Message
by a Station Not Itself in Distress**

3157 § 32. A mobile station or a land station which learns that a mobile station is in distress shall transmit a distress message in any of the following cases:

3158 a) when the station in distress is not itself in a position to transmit the distress message;

3159 b) when the master or person responsible for the ship, aircraft or other vehicle not in distress, or the person responsible for the land station, considers that further help is necessary;

3160 c) when, although not in a position to render assistance, it has heard a distress message which has not been acknowledged.

3161 § 33. (1) The transmission of a distress message under the conditions prescribed in Nos. **3158** to **3160** shall be made on one or more of the international distress frequencies (500 kHz, 2 182 kHz, 156.8 MHz) or on any other frequency which may be used in case of distress (see Nos. **2970**, **2971**, **2973**, **2975**, **2994**, **2995** and **3000**).

3162 (2) This transmission of the distress message shall always be preceded by the call indicated below, which shall itself be preceded whenever possible by the radiotelegraph or radiotelephone alarm signal.

3163 (3) This call consists of:

3164 a) Morse radiotelegraphy:

Mob-87

— the signal $\overline{DDD} \overline{SOS} \overline{SOS} \overline{SOS} \overline{DDD}$;

— the word DE;

— the call sign of the transmitting station, sent three times.

3165

b) Radiotelephony:

- the signal MAYDAY RELAY pronounced as the French expression “m’aider relais”, spoken three times;
- the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
- the call sign or other identification of the transmitting station, spoken three times.

3166

Mob-87

§ 34. When the Morse radiotelegraph alarm signal is used, an interval of two minutes shall be allowed, whenever this is considered necessary, before the transmission of the call mentioned in No. 3164.

3167

§ 35. When a station of the mobile service transmits a distress message under the conditions mentioned in No. 3160, it shall take all necessary steps to notify the authorities who may be able to render assistance.

3168

§ 36. A ship station should not acknowledge receipt of a distress message transmitted by a coast station under the conditions mentioned in Nos. 3157 to 3160 until the master or person responsible has confirmed that the ship station concerned is in a position to render assistance.

3169

to

3195

NOT allocated.

ARTICLE 40

Urgency and Safety Transmissions, and Medical Transports**Section I. Urgency Signal and Messages**

- 3196** § 1. (1) In Morse radiotelegraphy, the urgency signal consists of
Mob-87 three repetitions of the group XXX, sent with the letters of each group and the successive groups clearly separated from each other. It shall be transmitted before the call.
- 3197** (2) In radiotelephony, the urgency signal consists of the
Mob-87 group of words PAN PAN, each word of the group pronounced as the French word “panne”. The urgency signal shall be repeated three times before the call.
- 3198** § 2. (1) The urgency signal shall be sent only on the authority of the master or the person responsible for the ship, aircraft or other vehicle carrying the mobile station or mobile earth station in the maritime mobile-satellite service.
- 3199** (2) The urgency signal may be transmitted by a land station or an earth station in the maritime mobile-satellite service at specified fixed points only with the approval of the responsible authority.
- 3200** § 3. (1) The urgency signal indicates that the calling station has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle, or the safety of a person.
- 3201** (2) The urgency signal and message following it shall be
Mob-87 sent on one or more of the international distress frequencies 500 kHz, 2 182 kHz, 156.8 MHz, the supplementary distress frequencies 4 125 kHz and 6 215 kHz, the aeronautical emergency frequency 121.5 MHz, the frequency 243 MHz, or on any other frequency which may be used in case of distress (see also No. N 3204).

3202 (3) However, in the maritime mobile service, the message shall be transmitted on a working frequency:

- a)* in the case of a long message or a medical call; *or*
- b)* in areas of heavy traffic in the case of the repetition of a message transmitted in accordance with the provisions laid down in No. **3201**.

An indication to this effect shall be given at the end of the call.

3203 (4) The urgency signal shall have priority over all other communications, except distress. All stations which hear it shall take care not to interfere with the transmission of the message which follows the urgency signal.

3204 (5) In the maritime mobile service, urgency messages may be addressed either to all stations or to a particular station.

3205 § 4. Messages preceded by the urgency signal shall, as a general rule, be drawn up in plain language.

3206 § 5. (1) Mobile stations which hear the urgency signal shall continue to listen for at least three minutes. At the end of this period, if no urgency message has been heard, a land station should, if possible, be notified of the receipt of the urgency signal. Thereafter, normal working may be resumed.

3207 (2) However, land and mobile stations which are in communication on frequencies other than those used for the transmission of the urgency signal and of the call which follows it may continue their normal work without interruption provided the urgency message is not addressed "to all stations" (CQ).

3208 § 6. When the urgency signal has been sent before transmitting a message "to all stations" (CQ) which calls for action by the stations receiving the message, the station responsible for its transmission shall cancel it as soon as it knows that action is no longer necessary. This message of cancellation shall likewise be addressed "to all stations" (CQ).

Section II. Medical Transports

3209 § 7. The term “medical transports”, as defined in the 1949
Mob-83 Geneva Conventions and Additional Protocols, refers to any means of transportation by land, water or air, whether military or civilian, permanent or temporary, assigned exclusively to medical transportation and under the control of a competent authority of a party to a conflict or of neutral States and of other States not parties to an armed conflict, when these ships, craft and aircraft assist the wounded, the sick and the shipwrecked.

3210 § 8. For the purpose of announcing and identifying medical
Mob-87 transports which are protected under the above-mentioned Conventions, a complete transmission of the urgency signals described in Nos. **3196** and **3197** shall be followed by the addition of the single group YYY in Morse radiotelegraphy and by the addition of the single word MAY-DEE-CAL, pronounced as in French “médical”, in radiotelephony.

3211 § 9. The frequencies specified in No. **3201** may be used by medical transports for the purpose of self-identification and to establish communications. As soon as practicable, communications shall be transferred to an appropriate working frequency.

3212 § 10. The use of the signals described in No. **3210** indicates that the message which follows concerns a protected medical transport. The message shall convey the following data:

- 3213** a) the call sign or other recognized means of identification of the medical transport;
- 3214** b) position of the medical transport;
- 3215** c) number and type of medical transports;
- 3216** d) intended route;
- 3217** e) estimated time en route and of departure and arrival, as appropriate;
- 3218** f) any other information, such as flight altitude, radio frequencies guarded, languages used and secondary surveillance radar modes and codes.

- 3219** § 11. The provisions of Section I of this Article shall apply as appropriate to the use of the urgency signal by medical transports.
- 3219A** § 11A. The identification and location of medical transports at
Mob-87 sea may be effected by means of appropriate standard maritime radar transponders (see Recommendation 14 (**Mob-87**)).
- 3219B** § 11B. The identification and location of aircraft medical trans-
Mob-83 ports may be effected by the use of the secondary surveillance radar (SSR) system specified in Annex 10 to the Convention on International Civil Aviation.
- 3220** § 12. The use of radiocommunications for announcing and identifying medical transports is optional; however, if they are used, the provisions of these Regulations and particularly of this Section and of Articles 37 and 38 shall apply.

Section III. Safety Signal and Messages

- 3221** § 13. (1) In Morse radiotelegraphy, the safety signal consists of
Mob-87 three repetitions of the group TTT, the individual letters of each group and the successive groups being clearly separated from each other. It shall be sent before the call.
- 3222** (2) In radiotelephony, the safety signal consists of the word
Mob-87 SÉCURITÉ pronounced clearly as in French. The safety signal shall be repeated three times before the call.
- 3223** § 14. (1) The safety signal indicates that the station is about to transmit a message containing an important navigational or an important meteorological warning.
- 3224** (2) The safety signal and call shall be sent on one or more
Mob-87 of the international distress frequencies (500 kHz, 2 182 kHz, 156.8 MHz) or on any other frequency which may be used in case of distress (see also No. N 3227).
- 3225** (3) The safety message which follows the call should be sent on a working frequency. A suitable announcement to this effect shall be made at the end of the call.

- 3226** (4) In the maritime mobile service, safety messages shall generally be addressed to all stations. In some cases, however, they may be addressed to a particular station.
- 3227** § 15. (1) With the exception of messages transmitted at fixed times, the safety signal, when used in the maritime mobile service, shall be transmitted towards the end of the first available period of silence (see No. **3038** for radiotelegraphy and No. **3052** for radio-telephony); the message shall be transmitted immediately after the period of silence.
- 3228** (2) In the cases prescribed in Nos. **3328**, **3331** and **3335**, the safety signal and the message which follows it shall be transmitted as soon as possible, and shall be repeated at the end of the first period of silence which follows.
- 3229** § 16. All stations hearing the safety signal shall listen to the safety message until they are satisfied that the message is of no concern to them. They shall not make any transmission likely to interfere with the message.
- 3230**
to
3254 NOT allocated.

ARTICLE 41

Alarm and Warning Signals

**Mob-87 Section I. Emergency Position-Indicating Radiobeacon
 and Satellite Emergency Position-Indicating
 Radiobeacon Signals**

3255 § 1. The emergency position-indicating radiobeacon signal consists of:

3256 a) for medium frequencies, i.e. 2 182 kHz ¹:

3257 1) a keyed emission modulated by a tone of
Mob-83 1 300 Hz (\pm 20 Hz) having a period of emission of 1.0 to 1.2 s and a period of silence (carrier suppressed) of 1.0 to 1.2 s; *or*

3258 2) the radiotelephone alarm signal (see No. **3270**), followed by the Morse letter B and/or the call sign of the ship to which the radiobeacon belongs transmitted by keying a carrier modulated by a tone of either 1 300 Hz or 2 200 Hz;

3259 b) for very high frequencies, i.e. 121.5 MHz and
Mob-13 243 MHz, a signal whose characteristics shall be in accordance with those specified in Appendix **37A**.

3259A c) for ultra-high frequencies, i.e., in the bands
Mob-87 406 - 406.1 MHz and 1 645.5 - 1 646.5 MHz, signals whose characteristics shall be in accordance with the relevant CCIR Recommendations.

3256.1 ¹ In Japan, there are emergency position-indicating radio-beacons which transmit the distress signal and identification on frequencies between 2 089.5 kHz and 2 092.5 kHz using class A1A emissions.

3260 § 2. (1) The essential purpose of the emergency position-indicating radiobeacon signals is to facilitate determining the position of survivors in search and rescue operations.

3261 (2) These signals shall indicate that one or more persons are in distress, may no longer be on board a ship or an aircraft, and that receiving facilities may not be available.

3262 (3) Any mobile service station receiving one of these signals, while no distress or urgent traffic is being passed, shall consider that the provisions of Nos. **3157** and **3158** are applicable.

3263 and 3264 SUP
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3265 § 3. The keying cycles in Nos. **3257** and **3258** may be
Mob-83 interrupted for speech transmission if administrations so desire.

3266 § 4. (1) Equipment designed to transmit emergency position-indicating radiobeacon signals on the carrier frequency 2 182 kHz shall meet the requirements specified in Appendix 37.

3267 (2) Equipment designed to transmit emergency position-
Mob-83 indicating radiobeacon signals on the frequencies 121.5 MHz and 243 MHz shall meet the requirements specified in Appendix 37A.

Mob-87 **Section II. Morse Radiotelegraph
and Radiotelephone Alarm Signals**

3268 § 5. (1) The Morse radiotelegraph alarm signal consists of a
Mob-87 series of twelve dashes sent in one minute, the duration of each dash being four seconds and the duration of the interval between consecutive dashes one second. It may be transmitted by hand but its transmission by means of an automatic instrument is recommended.

- 3269** (2) Any ship station working in the bands between 415 kHz
Mob-87 and 526.5 kHz which is not provided with an automatic apparatus for the transmission of the Morse radiotelegraph alarm signal shall be permanently equipped with a clock, clearly marking the seconds preferably by means of a concentric seconds hand. This clock shall be placed at a point sufficiently visible from the operator's table so that the operator may, by keeping it in view, easily and correctly time the different elements of the alarm signal.
- 3270** § 6. (1) The radiotelephone alarm signal consists of two substantially sinusoidal audio frequency tones transmitted alternately. One tone shall have a frequency of 2 200 Hz and the other a frequency of 1 300 Hz, the duration of each tone being 250 milliseconds.
- 3271** (2) The radiotelephone alarm signal, when generated by automatic means, shall be sent continuously for a period of at least thirty seconds but not exceeding one minute; when generated by other means, the signal shall be sent as continuously as practicable over a period of approximately one minute.
- 3272** (3) The radiotelephone alarm signal transmitted by coast stations shall be that described in Nos. **3270** and **3271**, which may be followed by a single tone of 1 300 Hz for 10 seconds.
- 3273** § 7. The purpose of these special signals is:
- 3274** a) in Morse radiotelegraphy, to activate automatic
Mob-87 devices giving the alarm to attract the attention of the operator when there is no listening watch on the distress frequency;
- 3275** b) in radiotelephony, to attract the attention of the person on watch or to actuate automatic devices giving the alarm, or activating a silenced loud-speaker for the message which is to follow.
- 3276** § 8. (1) These signals shall only be used to announce:
- 3277** a) that a distress call or message is about to follow; *or*

3278 b) the transmission of an urgent cyclone warning, which should be preceded by the safety signal (see Nos. 3221 and 3222). In this case they may only be used by coast stations duly authorized by their government; *or*

3279 c) the loss of a person or persons overboard or grave
Mob-87 and imminent danger threatening a person or persons. In this case they may only be used when the assistance of other ships is required and cannot be satisfactorily obtained by the use of the urgency signal alone, but the alarm signal shall not be repeated by other stations. The message shall be preceded by the urgency signal (see Nos. 3090, 3196 and 3197).

3280 (2) In the cases referred to in Nos. 3278 and 3279, an
Mob-87 interval of two minutes should, if possible, separate the end of the Morse radiotelegraph alarm signal and the beginning of the warning or the message.

3281 § 9. Automatic devices intended for the reception of the
Mob-87 Morse radiotelegraph and radiotelephone alarm signals shall meet the requirements specified in Appendix 36.

3282 § 10. Before any such automatic device is approved for use on ships, the administration having jurisdiction over those ships shall be satisfied by practical tests made under operating conditions equivalent to those obtaining in practice (including interference, vibration, etc.) that the apparatus complies with the provisions of these Regulations.

Section III. All Ships Selective Call

3283 § 11. The characteristics of the “all ships call” in the selective calling system, which is reserved for alarm purposes only, are given in Appendix 39.

Section IV. Navigational Warning Signal

3284 § 12. (1) The navigational warning signal consists of one substantially sinusoidal tone of the frequency 2 200 Hz, interrupted so that the durations of tone and space are 250 milliseconds each.

3285 (2) The signal should be transmitted by coast stations continuously for a period of fifteen seconds before vital navigational warnings on radiotelephony in the medium frequency maritime bands.

3285A (2A) In addition, the signal specified in No. **3284** may be
Mob-87 transmitted on the carrier frequency 2 182 kHz by off-shore installations or structures in imminent danger of being struck, or by stations that consider a ship is in imminent danger of running aground. The power of this transmission should, where practicable, be limited to the minimum necessary for reception by ships in the immediate vicinity of the off-shore installations or structures or of the land concerned.

3285B (2B) The transmission specified in No. **3285A** should be
Mob-87 immediately followed by a radiotelephone transmission giving the identity and position of the off-shore installation or structure. Stations that consider a ship is in imminent danger of running around should provide as much identification and position information as possible. This transmission should be followed by a vital navigational warning.

3286 (3) The purpose of the signal is to attract the attention of the person on watch using a loudspeaker or a filtered loudspeaker, or to actuate an automatic device to activate a silenced loudspeaker for the message which is to follow.

3287
to
3311 NOT allocated.

ARTICLE 42

Special Services Relating to Safety**Section I. Meteorological Messages**

- 3312** § 1. (1) Meteorological messages comprise:
- 3313** *a)* messages addressed to meteorological services officially entrusted with weather forecasts, more specifically for the protection of maritime and air navigation;
- 3314** *b)* messages from these meteorological services intended specially for:
- 3315** – ship stations;
- 3316** – protection of aircraft;
- 3317** – the public.
- 3318** (2) The information contained in these messages may be:
- 3319** *a)* observations taken at fixed times;
- 3320** *b)* warnings of dangerous phenomena;
- 3321** *c)* forecasts and warnings;
- 3322** *d)* statements of the general meteorological situation.
- 3323** § 2. (1) The various national meteorological services mutually agree to prepare common transmission programmes so as to use the transmitters best situated to serve the regions concerned.
- 3324** (2) The meteorological observations contained in the classes mentioned in Nos. **3313** to **3316** should be drawn up in an international meteorological code, whether they are transmitted by or intended for mobile stations.
- 3325** § 3. For observation messages intended for an official meteorological service, use shall be made of the frequencies made available for meteorological purposes, in conformity with regional agreements made by the services concerned for the use of these frequencies.

3326 § 4. (1) Meteorological messages specially intended for all ship
Mob-87 stations shall in principle be sent in accordance with a definite timetable, and, as far as possible, at times when they can be received by ship stations with only one operator. In Morse radiotelegraphy the transmission speed shall not exceed sixteen words a minute.

3327 (2) During the transmission "to all stations" of meteorological messages intended for stations of the maritime mobile service, all stations of this service whose transmission might interfere with the reception of these messages shall keep silent in order to permit all stations which desire to do so to receive these messages.

3328 (3) Meteorological warning messages for the maritime mobile service shall be transmitted without delay. They shall be repeated at the end of the first silence period which follows their receipt (see Nos. **3038** and **3052**) as well as during the next appropriate broadcast as indicated in the List of Radiodetermination and Special Service Stations. They shall be preceded by the safety signal and sent on the appropriate frequencies (see No. **3224**).

3329 (4) In addition to the regular information services contemplated in the preceding sub-paragraphs, administrations shall take the necessary steps to ensure that certain stations shall, upon request, communicate meteorological messages to stations in the maritime mobile service.

3330 (5) The provisions of Nos. **3326** to **3329** are applicable to the aeronautical mobile service, in so far as they are not contrary to more detailed special agreements which ensure at least equal protection to air navigation.

3331 § 5. (1) Messages originating in mobile stations and containing information concerning the presence of cyclones shall be transmitted, with the least possible delay, to other mobile stations in the vicinity and to the appropriate authorities at the first point of the coast with which contact can be established. Their transmission shall be preceded by the safety signal.

- 3332** (2) Any mobile station may, for its own use, listen to messages containing meteorological observations sent out by other mobile stations, even those which are addressed to a national meteorological service.
- 3333** (3) Stations of the mobile services which transmit meteorological observations addressed to a national meteorological service are not required to repeat them to other stations. However, the exchange between mobile stations, on request, of information relating to the state of the weather is authorized.

Section II. Notices to Mariners

- 3334** § 6. The provisions of Nos. 3326 to 3330 shall apply to notices to mariners.
- 3335** § 7. Messages containing information concerning the presence of dangerous ice, dangerous wrecks, or any other imminent danger to marine navigation, shall be transmitted as soon as possible to other ship stations in the vicinity, and to the appropriate authorities at the first point of the coast with which contact can be established. These transmissions shall be preceded by the safety signal.
- 3336** § 8. When thought desirable, and provided the sender agrees, administrations may authorize their land stations to communicate information concerning maritime damage or casualties or information of general interest to navigation to the marine information agencies approved by them and subject to the conditions fixed by them.

Section III. Medical Advice

- 3337** § 9. Mobile stations requiring medical advice may obtain it through any of the land stations shown as providing this service in the List of Radiodetermination and Special Service Stations.
- 3338** § 10. Radiotelegrams and radiotelephone calls concerning medical advice may be preceded by the appropriate urgency signal (see Nos. 3198 to 3208).

**Mob-83 Section IV. Narrow-Band Direct-Printing Telegraphy System
 for Transmission of Navigational and Meteorological
 Warnings and Urgent Information to Ships (NAVTEX)**

3339 § 11. In addition to existing methods, navigational and me-
Mob-87 teorological warnings and urgent information shall be transmitted
by means of narrow-band direct-printing telegraphy, with forward
error correction, by selected coast stations and their operational
details shall be indicated in the List of Radiodetermination and
Special Service Stations (see Nos. **3323**, **3326** and **3334**). Informa-
tion is also published in a separate list in accordance with
Article **14A**.

3340 § 12. The mode and format of transmission should be in
Mob-83 conformity with relevant CCIR Recommendations.

3341 § 13. In the maritime mobile service the frequency 518 kHz
Mob-83 shall be used for the automatic narrow-band direct-printing tel-
egraphy system for transmission of navigational and meteoro-
logical warnings and urgent information to ship stations in the MF
band (see No. **474**).

3342
to
3361 NOT allocated.

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CHAPTER N IX

Mob-87

Distress and Safety Communications¹ for the GMDSS

Mob-87

ARTICLE N 37

Mob-87

General Provisions

N 2929 § 1. This Chapter contains the provisions for the operational
Mob-87 use of the Global Maritime Distress and Safety System (GMDSS).

N 2930 § 2. The provisions specified in this Chapter are obligatory
Mob-87 (see Resolution **331 (Mob-87)**) in the maritime mobile service for all stations using the frequencies and techniques prescribed for the functions set out herein (see also No. **N 2932**). Certain provisions of this Chapter are also applicable to the aeronautical mobile service except in the case of special arrangements between the governments concerned. However, stations of the maritime mobile service, when fitted with equipment used by stations operating in conformity with Chapter **IX**, shall comply with the appropriate provisions of that Chapter (see No. **2945**).

C.NIX

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¹ For the purposes of this Chapter, distress and safety communications include distress, urgency and safety calls and messages.

N 2931 § 3. The procedure specified in this Chapter is obligatory in
Mob-87 the maritime mobile-satellite service and for communications between stations on board aircraft and stations of the maritime mobile-satellite service, wherever this service or stations of this service are specifically mentioned.

N 2932 § 4. The International Convention for the Safety of Life at
Mob-87 Sea, SOLAS, 1974, prescribes which ships and which of their survival craft shall be provided with radio equipment, and which ships shall carry portable radio equipment for use in survival craft. It also prescribes the requirements which shall be met by such equipment.

N 2933 § 5. Stations of the land mobile service in uninhabited,
Mob-87 sparsely populated or remote areas may, for distress and safety purposes, use the frequencies provided for in this Chapter.

N 2934 § 6. The procedure specified in this Chapter is obligatory for
Mob-87 stations of the land mobile service when using frequencies provided in these Regulations for distress and safety communications.

N 2935 § 7. (1) No provision of these Regulations prevents the use by a
Mob-87 mobile station or a mobile earth station in distress of any means at its disposal to attract attention, make known its position, and obtain help.

N 2936 (2) No provision of these Regulations prevents the use by
Mob-87 stations on board aircraft or ships engaged in search and rescue operations, in exceptional circumstances, of any means at their disposal to assist a mobile station or a mobile earth station in distress.

N 2937 (3) No provision of these Regulations prevents the use by a
Mob-87 land station or coast earth station, in exceptional circumstances, of any means at its disposal to assist a mobile station or a mobile earth station in distress (see also No. 959).

N 2938 § 8. Ship earth stations located at Rescue Coordination
Mob-87 Centres¹ may be authorized by an administration to communicate for distress and safety purposes with any other station using bands allocated to the maritime mobile-satellite service, when special circumstances make it essential, notwithstanding the methods of working provided for in these Regulations.

N 2939 § 9. Transmissions by radiotelephony shall be made slowly
Mob-87 and distinctly, each word being clearly pronounced to facilitate transcription.

N 2940 § 10. Distress, urgency and safety transmissions may also be
Mob-87 made, using Morse telegraphy and radiotelephony techniques, in accordance with the provisions of Chapter IX and relevant CCIR Recommendations.

N 2941 § 11. The abbreviations and signals of Appendix 14 and the
Mob-87 Phonetic Alphabet and Figure Code in Appendix 24 should be used where applicable².

N 2938.1 ¹ The term "Rescue Coordination Centre", as defined in the
Mob-87 International Convention on Maritime Search and Rescue, 1979, refers to a unit responsible for promoting the efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.

N 2941.1 ² The use of the Standard Marine Navigational Vocabulary
Mob-87 and, where language difficulties exist, the International Code of Signals, both published by the International Maritime Organization (IMO), is also recommended.

N 2942 § 12. (1) Mobile stations¹ of the maritime mobile service may
Mob-87 communicate, for safety purposes, with stations of the aeronautical mobile service. Such communications shall normally be made on the frequencies authorized, and under the conditions specified in Section I of Article N 38 (see also No. N 2935).

N 2943 (2) Mobile stations of the aeronautical mobile service may
Mob-87 communicate, for distress and safety purposes, with stations of the maritime mobile service in conformity with the provisions of this Chapter.

N 2944 § 13. Any station on board an aircraft required by national or
Mob-87 international regulations to communicate for distress, urgency or safety purposes with stations of the maritime mobile service that comply with the provisions of this Chapter, shall be capable of transmitting and receiving class J3E emissions when using the carrier frequency 2 182 kHz, or class J3E emissions when using the carrier frequency 4 125 kHz, or class G3E emissions when using the frequency 156.8 MHz and, optionally, the frequency 156.3 MHz.

N 2945
to Not allocated.
N 2966

N 2942.1 ¹ Mobile stations communicating with the stations of the
Mob-87 aeronautical mobile (R) service in bands allocated to the aeronautical mobile (R) service shall conform to the provisions of the Regulations which relate to that service and, as appropriate, to any special arrangements between the governments concerned by which the aeronautical mobile (R) service is regulated.

Mob-87

ARTICLE N 38

**Mob-87 Frequencies for Distress and Safety Communications
for the Global Maritime Distress and
Safety System (GMDSS)**

Mob-87

Section I. Availability of Frequencies

N 2967

A. 490 kHz

Mob-87

N 2968 § 1. In the maritime mobile service, after full implementa-
Mob-87 tion of the GMDSS the frequency 490 kHz will be used exclusively
for the transmission by coast stations of meteorological and
navigational warnings and urgent information to ships, by means
of narrow-band direct-printing telegraphy (see Resolution
210 (Mob-87)).

N 2969

B. 518 kHz

Mob-87

N 2970 § 2. In the maritime mobile service, the frequency 518 kHz is
Mob-87 used exclusively for the transmission by coast stations of meteo-
rological and navigational warnings and urgent information to
ships, by means of narrow-band direct-printing telegraphy (inter-
national NAVTEX system) (see Article 14A).

N 2971

C. 2 174.5 kHz

Mob-87

N 2972 § 3. The frequency 2 174.5 kHz is used exclusively for dis-
Mob-87 tress and safety traffic using narrow-band direct-printing tele-
graphy.

N 2973

D. 2 182 kHz

Mob-87

N 2974 § 4. The carrier frequency 2 182 kHz is used for distress and
Mob-87 safety traffic by radiotelephony, using class of emission J3E (see also Nos. **2973**, **3026** and **4343**).

N 2975

E. 2 187.5 kHz

Mob-87

N 2976 § 5. The frequency 2 187.5 kHz is used exclusively for dis-
Mob-87 tress and safety calls using digital selective calling in accordance with No. **N 3110** (see Nos. **N 3112**, **N 3206** and **N 3229**).

N 2977

F. 3 023 kHz

Mob-87

N 2978 § 6. The aeronautical carrier (reference) frequency 3 023 kHz
Mob-87 may be used for intercommunication between mobile stations when they are engaged in coordinated search and rescue operations, and for communication between these stations and participating land stations, in accordance with the provisions of Appendix **27 Aer2** (see Nos. **501** and **505**).

N 2979

G. 4 125 kHz

Mob-87

N 2980 § 7. (1) The carrier frequency 4 125 kHz is used for distress and
Mob-87 safety traffic by radiotelephony (see also Nos. **2982** and **4375**).

N 2981 (2) The carrier frequency 4 125 kHz may be used by aircraft
Mob-87 stations to communicate with stations of the maritime mobile service for distress and safety purposes, including search and rescue (see No. **N 2944**).

N 2982 *H. 4 177.5 kHz*
Mob-87

N 2983 § 8. The frequency 4 177.5 kHz is used exclusively for dis-
Mob-87 tress and safety traffic using narrow-band direct-printing tele-
graphy.

N 2984 *I. 4 207.5 kHz*
Mob-87

N 2985 § 9. The frequency 4 207.5 kHz is used exclusively for dis-
Mob-87 tress and safety calls using digital selective calling in accordance
with No. N 3110 (see Nos. N 3112, N 3206 and N 3229).

N 2986 *J. 4 209.5 kHz*
Mob-87

N 2987 § 10. In the maritime mobile service, the frequency
Mob-87 4 209.5 kHz is used exclusively for NAVTEX-type transmissions by
coast stations of meteorological and navigational warnings and
urgent information to ships, by means of narrow-band direct-
printing telegraphy (see Resolution 332 (**Mob-87**)).

N 2988 *K. 4 210 kHz*
Mob-87

N 2989 § 11. The frequency 4 210 kHz is used exclusively for the
Mob-87 transmission by coast stations of maritime safety information,
by narrow-band direct-printing telegraphy (see Resolution 333
(**Mob-87**)).

N 2990 *L. 5 680 kHz*
Mob-87

N 2991 § 12. The aeronautical carrier (reference) frequency 5 680 kHz
Mob-87 may be used for intercommunication between mobile stations when
they are engaged in coordinated search and rescue operations and
for communication between these stations and participating land
stations, in accordance with the provisions of Appendix 27 **Aer2**
(see also Nos. 501 and 505).

N 2992 *M. 6 215 kHz*
Mob-87

N 2993 § 13. The carrier frequency 6 215 kHz is used for distress and
Mob-87 safety traffic by radiotelephony (see also Nos. **2986** and **4375**).

N 2994 *N. 6 268 kHz*
Mob-87

N 2995 § 14. The frequency 6 268 kHz is used exclusively for distress
Mob-87 and safety traffic using narrow-band direct-printing telegraphy.

N 2996 *O. 6 312 kHz*
Mob-87

N 2997 § 15. The frequency 6 312 kHz is used exclusively for distress
Mob-87 and safety calls using digital selective calling in accordance with
No. **N 3110** (see Nos. **N 3112**, **N 3206** and **N 3229**).

N 2998 *P. 6 314 kHz*
Mob-87

N 2999 § 16. The frequency 6 314 kHz is used exclusively for the
Mob-87 transmission by coast stations of maritime safety information,
by narrow-band direct-printing telegraphy (see Resolution **333**
(**Mob-87**)).

N 3000 *Q. 8 291 kHz*
Mob-87

N 3001 § 17. The carrier frequency 8 291 kHz is used exclusively for
Mob-87 distress and safety traffic by radiotelephony.

N 3002 *R. 8 376.5 kHz*
Mob-87

N 3003 § 18. The frequency 8 376.5 kHz is used exclusively for distress and safety traffic using narrow-band direct-printing telegraphy.
Mob-87

N 3004 *S. 8 414.5 kHz*
Mob-87

N 3005 § 19. The frequency 8 414.5 kHz is used exclusively for distress and safety calls using digital selective calling in accordance with No. **N 3110** (see Nos. **N 3112**, **N 3206** and **N 3229**).
Mob-87

N 3006 *T. 8 416.5 kHz*
Mob-87

N 3007 § 20. The frequency 8 416.5 kHz is used exclusively for the transmission by coast stations of maritime safety information, by narrow-band direct-printing telegraphy (see Resolution 333 (**Mob-87**)).
Mob-87

N 3008 *U. 12 290 kHz*
Mob-87

N 3009 § 21. The carrier frequency 12 290 kHz is used for distress and safety traffic by radiotelephony.
Mob-87

N 3010 *V. 12 520 kHz*
Mob-87

N 3011 § 22. The frequency 12 520 kHz is used exclusively for distress and safety traffic using narrow-band direct-printing telegraphy.
Mob-87

N 3012 *W. 12 577 kHz*
Mob-87

N 3013 § 23. The frequency 12 577 kHz is used exclusively for distress and safety calls using digital selective calling in accordance with No. **N 3110** (see Nos. **N 3112**, **N 3206** and **N 3229**).
Mob-87

N 3014 *X. 12 579 kHz*
Mob-87

N 3015 § 24. The frequency 12 579 kHz is used exclusively for the
Mob-87 transmission by coast stations of maritime safety information,
by narrow-band direct-printing telegraphy (see Resolution
333 (**Mob-87**)).

N 3016 *Y. 16 420 kHz*
Mob-87

N 3017 § 25. The carrier frequency 16 420 kHz is used for distress
Mob-87 and safety traffic by radiotelephony.

N 3018 *Z. 16 695 kHz*
Mob-87

N 3019 § 26. The frequency 16 695 kHz is used exclusively for distress
Mob-87 and safety traffic using narrow-band direct-printing telegraphy.

N 3020 *AA. 16 804.5 kHz*
Mob-87

N 3021 § 27. The frequency 16 804.5 kHz is used exclusively for
Mob-87 distress and safety calls using digital selective calling in accordance
with No. N 3110 (see Nos. N 3112, N 3206 and N 3229).

N 3022 *AB. 16 806.5 kHz*
Mob-87

N 3023 § 28. The frequency 16 806.5 kHz is used exclusively for the
Mob-87 transmission by coast stations of maritime safety information,
by narrow-band direct-printing telegraphy (see Resolution 333
(**Mob-87**)).

N 3024 *AC. 19 680.5 kHz*
Mob-87

N 3025 § 29. The frequency 19 680.5 kHz is used exclusively for the
Mob-87 transmission by coast stations of maritime safety information,
by narrow-band direct-printing telegraphy (see Resolution 333
(**Mob-87**)).

N 3026 *AD. 22 376 kHz*
Mob-87

N 3027 § 30. The frequency 22 376 kHz is used exclusively for the
Mob-87 transmission by coast stations of maritime safety information, by narrow-band direct-printing telegraphy (see Resolution 333 (Mob-87)).

N 3028 *AE. 26 100.5 kHz*
Mob-87

N 3029 § 31. The frequency 26 100.5 kHz is used exclusively for the
Mob-87 transmission by coast stations of maritime safety information, by narrow-band direct-printing telegraphy (see Resolution 333 (Mob-87)).

N 3030 *AF. 121.5 MHz and 123.1 MHz*
Mob-87

N 3031 § 32. (1) The aeronautical emergency frequency 121.5 MHz¹ is
Mob-87 used for the purposes of distress and urgency for radiotelephony by stations of the aeronautical mobile service using frequencies in the band between 117.975 MHz and 136 MHz (137 MHz after 1 January 1990). This frequency may also be used for these purposes by survival craft stations. Emergency position-indicating radiobeacons use the frequency 121.5 MHz as indicated in Appendix 37A.

N 3032 (2) The aeronautical auxiliary frequency 123.1 MHz, which
Mob-87 is auxiliary to the aeronautical emergency frequency 121.5 MHz, is for use by stations of the aeronautical mobile service and by other mobile and land stations engaged in coordinated search and rescue operations (see also No. 593).

N 3031.1 ¹ Normally, aircraft stations transmit distress and urgency
Mob-87 messages on the working frequency in use at the time of the distress or urgency incident.

N 3033 (3) Mobile stations of the maritime mobile service may
Mob-87 communicate with stations of the aeronautical mobile service on the aeronautical emergency frequency 121.5 MHz for the purposes of distress and urgency only, and on the aeronautical auxiliary frequency 123.1 MHz for coordinated search and rescue operations, using class A3E emissions for both frequencies (see also Nos. **501** and **593**). They shall then comply with any special arrangements between the governments concerned by which the aeronautical mobile service is regulated.

N 3034 *AG. 156.3 MHz*
Mob-87

N 3035 § 33. The frequency 156.3 MHz may be used for communica-
Mob-87 tion between ship stations and aircraft stations engaged in coordinated search and rescue operations. It may also be used by aircraft stations to communicate with ship stations for other safety purposes (see also note *g*) in Appendix 18).

N 3036 *AH. 156.525 MHz*
Mob-87

N 3037 § 34. The frequency 156.525 MHz is used in the maritime
Mob-87 mobile service for distress and safety calls using digital selective calling (see also Nos. **347**, **613A**, **N 2935**, **N 2936** and **N 2937**).

N 3038 *AI. 156.650 MHz*
Mob-87

N 3039 § 35. The frequency 156.650 MHz is used for ship-to-ship
Mob-87 communications relating to the safety of navigation in accordance with note *p*) in Appendix 18.

N 3040 *AJ. 156.8 MHz*
Mob-87

N 3041 § 36. (1) The frequency 156.8 MHz is used for distress and safety
Mob-87 traffic by radiotelephony (see also No. **2994**).

N 3042 (2) The frequency 156.8 MHz may be used by aircraft
Mob-87 stations for safety purposes only.

N 3043 *AK. 406 - 406.1 MHz Band*
Mob-87

N 3044 § 37. The frequency band 406 - 406.1 MHz is used exclusively
Mob-87 by satellite emergency position-indicating radiobeacons in the Earth-to-space direction (see No. 649).

N 3045 *AL. 1 530 - 1 544 MHz Band*
Mob-87

N 3046 § 38. In addition to its availability for routine non-safety
Mob-87 purposes, the band 1 530 - 1 544 MHz is used for distress and safety purposes in the space-to-Earth direction in the maritime mobile-satellite service.

N 3047 *AM. 1 544 - 1 545 MHz Band*
Mob-87

N 3048 § 39. Use of the band 1 544 - 1 545 MHz (space-to-Earth) is
Mob-87 limited to distress and safety operations (see No. 727A), including:

N 3049 a) feeder links of satellites needed to relay the emis-
Mob-87 sions of satellite emergency position-indicating radiobeacons to earth stations;

N 3050 b) narrow-band (space-to-Earth) links from space sta-
Mob-87 tions to mobile stations.

N 3051 *AN. 1 626.5 - 1 645.5 MHz Band*
Mob-87

N 3052 § 40. In addition to its availability for routine non-safety
Mob-87 purposes, the band 1 626.5 - 1 645.5 MHz is used for distress and safety purposes in the Earth-to-space direction in the maritime mobile-satellite service.

N 3053 *AO. 1 645.5 - 1 646.5 MHz Band*
Mob-87

N 3054 § 41. Use of the band 1 645.5-1 646.5 MHz (Earth-to-space) is
Mob-87 limited to distress and safety operations (see No. **734B**), including:

N 3055 a) transmissions from satellite EPIRBs;
Mob-87

N 3056 b) relay of distress alerts received by satellites in low
Mob-87 polar earth orbits to geostationary satellites.

N 3057 *AP. 9 200 - 9 500 MHz Band*
Mob-87

N 3058 § 42. The band 9 200 - 9 500 MHz is used by radar transpon-
Mob-87 ders to facilitate search and rescue.

N 3059 *AQ. Survival Craft Stations*
Mob-87

N 3060 § 43. (1) Equipment for radiotelephony use in survival craft
Mob-87 stations shall, if capable of operating on any frequency in the
bands between 156 MHz and 174 MHz, be able to transmit and
receive on 156.8 MHz and at least one other frequency in these
bands.

N 3061 (2) Equipment for transmitting locating signals from sur-
Mob-87 vival craft stations shall be capable of operating in the
9 200 - 9 500 MHz band.

N 3062 (3) Equipment with digital selective calling facilities for use
Mob-87 in survival craft shall, if capable of operating:

N 3063 a) in the bands between 1 605 kHz and 2 850 kHz, be
Mob-87 able to transmit on 2 187.5 kHz;

- N 3064** *b)* in the bands between 4 000 kHz and 27 500 kHz, be
Mob-87 able to transmit on 8 414.5 kHz;
- N 3065** *c)* in the bands between 156 MHz and 174 MHz, be
Mob-87 able to transmit on 156.525 MHz.

Mob-87 **Section II. Protection of Frequencies for Distress
and Safety Communications for the GMDSS**

N 3066 *A. General*
Mob-87

N 3067 § 44. Except as provided for in these Regulations, any emis-
Mob-87 sion capable of causing harmful interference to distress, alarm,
urgency or safety communications on the frequencies 500 kHz,
2 174.5 kHz, 2 182 kHz, 2 187.5 kHz, 4 125 kHz, 4 177.5 kHz,
4 207.5 kHz, 6 215 kHz, 6 268 kHz, 6 312 kHz, 8 291 kHz,
8 376.5 kHz, 8 414.5 kHz, 12 290 kHz, 12 520 kHz, 12 577 kHz,
16 420 kHz, 16 695 kHz, 16 804.5 kHz, 121.5 MHz, 156.525 MHz,
156.8 MHz or the frequency bands 406 - 406.1 MHz, 1 544 -
1 545 MHz and 1 645.5 - 1 646.5 MHz (see also No. **3010**) is prohi-
bited. Any emission causing harmful interference to distress and
safety communications on any of the other discrete frequencies
identified in Section I of this Article and in Section I of Article **38**
is prohibited.

N 3068 § 45. Test transmissions shall be kept to a minimum on the
Mob-87 frequencies identified in Section I of this Article; they should be
coordinated with a competent authority, as necessary, and, wher-
ever practicable, be carried out on artificial antennas or with
reduced power. However, testing on the distress and safety calling
frequencies should be avoided, but where this is unavoidable, it
should be indicated that these are test transmissions.

N 3069 § 46. Before transmitting for other than distress purposes on
Mob-87 any of the frequencies identified in Section I for distress and safety, a station shall, where practicable, listen on the frequency concerned to make sure that no distress transmission is being sent.

N 3070 *B. 2 173.5 - 2 190.5 kHz Band*
Mob-87

N 3071 § 47. Except for transmissions authorized on the carrier fre-
Mob-87 quency 2 182 kHz and on the frequencies 2 174.5 kHz, 2 177 kHz, 2 187.5 kHz and 2 189.5 kHz, all transmissions on the frequencies between 2 173.5 kHz and 2 190.5 kHz are forbidden.

N 3072 *C. 156.7625 - 156.8375 MHz Band*
Mob-87

N 3073 § 48. All emissions in the band 156.7625 - 156.8375 MHz
Mob-87 capable of causing harmful interference to the authorized transmissions of stations of the maritime mobile service on 156.8 MHz are forbidden.

Mob-87 **Section III. Watch on Frequencies for Distress
and Safety Communications for the GMDSS**

N 3074 *A. Coast Stations*
Mob-87

N 3075 § 49. Those coast stations assuming a watch-keeping respon-
Mob-87 sibility in the GMDSS shall maintain an automatic digital selective calling watch on frequencies and for periods of time as indicated in the information published in the List of Coast Stations (see Resolution No. 322 (Rev.Mob-87)).

N 3076
Mob-87

B. Coast Earth Stations

N 3077 § 50. Those coast earth stations assuming a watch-keeping
Mob-87 responsibility in the GMDSS shall maintain a continuous automatic watch for appropriate distress alerts relayed by space stations (see Resolution No. 322 (Rev.Mob-87)).

N 3078
Mob-87

C. Ship Stations

N 3079 § 51. (1) Ship stations complying with the provisions of this
Mob-87 Chapter shall, while at sea, maintain an automatic digital selective calling watch on the appropriate distress and safety calling frequencies in the frequency bands in which they are operating. Ship stations, where so equipped, should also maintain watch on the appropriate frequencies for the automatic reception of transmissions of meteorological and navigational warnings and other urgent information to ships. However, ship stations shall also continue to apply the appropriate watch-keeping provisions of Chapter IX (see Resolution 331 (Mob-87)).

N 3080 (2) Ship stations complying with the provisions of this
Mob-87 Chapter should, where practicable, maintain a watch on the frequency 156.650 MHz for communications related to the safety of navigation.

N 3081
Mob-87

D. Ship Earth Stations

N 3082 § 52. Ship earth stations in use for the reception of shore-
Mob-87 to-ship distress alert relays should maintain watch except when communicating on a working channel.

N 3083
to NOT allocated.
N 3105

Mob-87

ARTICLE N 39

Mob-87

**Operational Procedures for Distress and
Safety Communications in the Global Maritime
Distress and Safety System (GMDSS)**

Mob-87

Section I. General

N 3106 § 1. Distress and safety communications rely on the use of
Mob-87 terrestrial MF, HF and VHF radiocommunications and communications using satellite techniques.

N 3107 § 2. (1) The distress alert (see No. **N 3112**) shall be sent through
Mob-87 a satellite either with absolute priority in general communication channels or on exclusive distress and safety frequencies or, alternatively, on the distress and safety frequencies in the MF, HF and VHF bands using digital selective calling.

N 3108 (2) The distress alert (see No. **N 3112**) shall be sent only on
Mob-87 the authority of the person responsible for the ship, aircraft or other vehicle carrying the mobile station or the mobile earth station.

N 3109 § 3. All stations which receive a distress alert transmitted by
Mob-87 digital selective calling shall immediately cease any transmission capable of interfering with distress traffic and shall continue watch until the call has been acknowledged.

N 3110 § 4. Digital selective calling shall be in accordance with the
Mob-87 relevant CCIR Recommendations.

Mob-87

Section II. Distress Alerting

N 3111

A. General

Mob-87

N 3112 § 5. (1) The transmission of a distress alert indicates that a
Mob-87 mobile unit¹ or person² is in distress and requires immediate assistance. The distress alert is a digital selective call using a distress call format³ in bands used for terrestrial radiocommunication or a distress message format, in which case it is relayed through space stations.

N 3113 (2) The distress alert shall provide⁴ the identification of the
Mob-87 station in distress and its position.

N 3112.1 ¹ Mobile unit: A ship, aircraft or other vehicle.
Mob-87

N 3112.2 ² In this Article, where the case is of a person in distress, the
Mob-87 application of the procedures may require adaptation to meet the needs of the particular circumstances.

N 3112.3 ³ The format of distress calls and distress messages shall be in
Mob-87 accordance with the relevant CCIR Recommendations.

N 3113.1 ⁴ The distress alert may also contain information regarding the
Mob-87 nature of the distress, the type of assistance required, the course and speed of the mobile unit, the time that this information was recorded and any other information which might facilitate rescue.

N 3114 *B. Transmission of a Distress Alert*
Mob-87

Mob-87 B1. Transmission of a Distress Alert
by a Ship Station or a Ship Earth Station

N 3115 § 6. Ship-to-shore distress alerts are used to alert Rescue
Mob-87 Coordination Centres via coast stations or coast earth stations that
a ship is in distress. These alerts are based on the use of
transmissions via satellites (from a ship earth station or a satellite
EPIRB) and terrestrial services (from ship stations and EPIRBs).

N 3116 § 7. Ship-to-ship distress alerts are used to alert other ships
Mob-87 in the vicinity of the ship in distress and are based on the use of
digital selective calling in the VHF and MF bands. Additionally,
the HF band may be used.

Mob-87 B2. Transmission of a Shore-to-Ship Distress
Alert Relay

N 3117 § 8. (1) A station or a Rescue Coordination Centre which
Mob-87 receives a distress alert shall initiate the transmission of a shore-
to-ship distress alert relay addressed, as appropriate, to all ships, to
a selected group of ships or to a specific ship by satellite and/or
terrestrial means.

N 3118 (2) The distress alert relay shall contain the identification of
Mob-87 the mobile unit in distress, its position and all other information
which might facilitate rescue.

N 3120 a) when the mobile unit in distress is not itself in a
Mob-87 position to transmit the distress alert;

N 3122 § 10. A station transmitting a distress alert relay in accordance with Nos. **N 3119**, **N 3120**, **N 3121** and **N 3134** shall indicate that it is not itself in distress.

Mob-87 C1. Procedure for Acknowledgement of Receipt of Distress Alerts

N 3125 § 12. Acknowledgement through a satellite of receipt of a
Mob-87 distress alert from a ship earth station shall be sent immediately
(see No. **N 3129**).

- the distress signal MAYDAY;
- the call sign or other identification of the station sending the distress message, spoken three times;

- the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
- the call sign or other identification of the station acknowledging receipt, spoken three times;
- the word RECEIVED (or RRR spoken as ROMEO ROMEO ROMEO in case of language difficulties);
- the distress signal MAYDAY.

N 3127 (2) The acknowledgement by direct-printing telegraphy of
Mob-87 receipt of a distress alert from a ship station shall be given in the following form:

- the distress signal MAYDAY;
- the call sign or other identification of the station sending the distress alert;
- the word DE;
- the call sign or other identification of the station acknowledging receipt of the distress alert;
- the signal RRR;
- the distress signal MAYDAY.

N 3128 § 14. The acknowledgement by direct-printing telegraphy of
Mob-87 receipt of a distress alert from a ship earth station shall be given by the coast earth station receiving the distress alert, by retransmitting the ship station identity of the ship transmitting the distress alert.

Mob-87 C2. Receipt and Acknowledgement of Receipt
 by a Coast Station, a Coast Earth Station
 or a Rescue Coordination Centre

N 3129 § 15. Coast stations and appropriate coast earth stations in
Mob-87 receipt of distress alerts shall ensure that they are routed as soon as possible to a Rescue Coordination Centre. Receipt of a distress alert is to be acknowledged as soon as possible by a coast station, or by a Rescue Coordination Centre via a coast station or an appropriate coast earth station.

N 3130 § 16. A coast station using digital selective calling to acknowledge a distress call shall transmit the acknowledgement on the distress calling frequency on which the call was received and should address it to all ships. The acknowledgement shall include the identification of the ship whose distress call is being acknowledged.
Mob-87

Mob-87 C3. Receipt and Acknowledgement of Receipt by
a Ship Station or Ship Earth Station

N 3131 § 17. (1) Ship or ship earth stations in receipt of a distress alert shall, as soon as possible, inform the master or person responsible for the ship of the contents of the distress alert.
Mob-87

N 3132 (2) In areas where reliable communications with one or more coast stations are practicable, ship stations in receipt of a distress alert should defer acknowledgement for a short interval so that receipt may be acknowledged by a coast station.
Mob-87

N 3133 § 18. (1) Ship stations operating in areas where reliable communications with a coast station are not practicable which receive a distress alert from a ship station which is, beyond doubt, in their vicinity, shall, as soon as possible and if appropriately equipped, acknowledge receipt and inform a Rescue Coordination Centre through a coast station or coast earth station (see No. N 3121).
Mob-87

N 3134 (2) However, a ship station receiving an HF distress alert shall not acknowledge it but shall observe the provisions of Nos. N 3139 to N 3141, and shall, if the alert is not acknowledged by a coast station within 3 minutes, relay the distress alert.
Mob-87

N 3135 § 19. A ship station acknowledging receipt of a distress alert
Mob-87 in accordance with No. N 3132 or No. N 3133 should:

N 3136 a) in the first instance, acknowledge receipt of the
Mob-87 alert by using radiotelephony on the distress and safety traffic frequency in the band used for the alert;

N 3137 b) if acknowledgement by radiotelephony of the dis-
Mob-87 tress alert received on the MF or VHF distress alerting frequency is unsuccessful, acknowledge receipt of the distress alert by responding with a digital selective call on the appropriate frequency.

N 3138 § 20. A ship station in receipt of a shore-to-ship distress alert
Mob-87 (see No. N 3117) should establish communication as directed and render such assistance as required and appropriate.

N 3139 *D. Preparations for Handling of Distress Traffic*
Mob-87

N 3140 § 21. On receipt of a distress alert transmitted by use of
Mob-87 digital selective calling techniques, ship stations and coast stations shall set watch on the radiotelephone distress and safety traffic frequency associated with the distress and safety calling frequency on which the distress alert was received.

N 3141 § 22. Coast stations and ship stations with narrow-band
Mob-87 direct-printing equipment shall set watch on the narrow-band direct-printing frequency associated with the distress alert signal if it indicates that narrow-band direct-printing is to be used for subsequent distress communications. If practicable, they should additionally set watch on the radiotelephone frequency associated with the distress alert frequency.

Mob-87

Section III. Distress Traffic

N 3142

*A. General and Search and Rescue
Coordinating Communications*

Mob-87

N 3143 § 23. Distress traffic consists of all messages relating to the
Mob-87 immediate assistance required by the ship in distress, including search and rescue communications and on-scene communications. The distress traffic shall as far as possible be on the frequencies contained in Article N 38.

N 3144 § 24. (1) The distress signal consists of the word MAYDAY,
Mob-87 pronounced in radiotelephony as the French expression “m’aider”.

N 3145 (2) For distress traffic by radiotelephony, when establishing
Mob-87 communications, calls shall be prefixed by the distress signal MAYDAY.

N 3146 § 25. (1) Error correction techniques in accordance with relevant
Mob-87 CCIR Recommendations shall be used for distress traffic by direct-printing telegraphy. All messages shall be preceded by at least one carriage return, a line feed signal, a letter shift signal and the distress signal MAYDAY.

N 3147 (2) Distress communications by direct-printing telegraphy
Mob-87 should normally be established by the ship in distress and should be in the broadcast (forward error correction) mode. The ARQ mode may subsequently be used when it is advantageous to do so.

N 3148 § 26. (1) The Rescue Coordination Centre responsible for con-
Mob-87 trolling a search and rescue operation shall also coordinate the distress traffic relating to the incident or may appoint another station to do so.

N 3149 (2) The Rescue Coordination Centre coordinating distress
Mob-87 traffic, the unit coordinating search and rescue operations ¹ or the coast station involved may impose silence on stations which interfere with that traffic. This instruction shall be addressed to all stations or to one station only, according to circumstances. In either case, the following shall be used:

N 3150 a) in radiotelephony, the signal SEELONCE
Mob-87 MAYDAY, pronounced as the French expression “silence, m’aider”;

N 3151 b) in narrow-band direct-printing telegraphy normally
Mob-87 using forward-error correcting mode, the signal SILENCE MAYDAY. However, the ARQ mode may be used when it is advantageous to do so.

N 3152 § 27. Until they receive the message indicating that normal
Mob-87 working may be resumed (see No. N 3154), all stations which are aware of the distress traffic, and which are not taking part in it, and which are not in distress, are forbidden to transmit on the frequencies in which the distress traffic is taking place.

N 3153 § 28. A station of the mobile service which, while following
Mob-87 distress traffic, is able to continue its normal service, may do so when the distress traffic is well established and on condition that it observes the provisions of No. N 3152 and that it does not interfere with distress traffic.

N 3149.1 ¹ In accordance with the International Convention on Mari-
Mob-87 time Search and Rescue, 1979, this is the on-scene commander (OSC) or the coordinator surface search (CSS).

N 3154 § 29. When distress traffic has ceased on frequencies which
Mob-87 have been used for distress traffic, the Rescue Coordination Centre controlling a search and rescue operation shall initiate a message for transmission on these frequencies indicating that distress traffic has finished.

N 3155 § 30. (1) In radiotelephony, the message referred to in
Mob-87 No. **N 3154** consists of:

- the distress signal MAYDAY;
- the call “Hello all stations” or CQ (spoken as CHARLIE QUEBEC) spoken three times;
- the words THIS IS (or DE spoken as DELTA ECHO in the case of language difficulties);
- the call sign or other identification of the station sending the message;
- the time of handing in of the message;
- the name and call sign of the mobile station which was in distress;
- the words SEELONCE FEENEE pronounced as the French words “silence fini”.

N 3156 (2) In direct-printing telegraphy, the message referred to in
Mob-87 No. **N 3154** consists of:

- the distress signal MAYDAY;
- the call CQ;
- the word DE;
- the call sign or other identification of the station sending the message;
- the time of handing in of the message;
- the name and call sign of the mobile station which was in distress; and
- the words SILENCE FINI.

N 3157
Mob-87

B. On-scene communications

N 3158 § 31. (1) On-scene communications are those between the mobile
Mob-87 unit in distress and assisting mobile units, and between the mobile units and the unit coordinating search and rescue operations¹.

N 3159 (2) Control of on-scene communications is the responsi-
Mob-87 bility of the unit coordinating search and rescue operations¹. Simplex communications shall be used so that all on-scene mobile stations may share relevant information concerning the distress incident. If direct-printing telegraphy is used, it shall be in the forward error-correcting mode.

N 3160 § 32. (1) The preferred frequencies in radiotelephony for on-
Mob-87 scene communications are 156.8 MHz and 2 182 kHz. The frequency 2 174.5 kHz may also be used for ship-to-ship on-scene communications using narrow-band direct-printing telegraphy in the forward error correcting mode.

N 3161 (2) In addition to 156.8 MHz and 2 182 kHz, the frequen-
Mob-87 cies 3 023 kHz, 4 125 kHz, 5 680 kHz, 123.1 MHz and 156.3 MHz may be used for ship-to-aircraft on-scene communications.

N 3162 § 33. The selection or designation of on-scene frequencies is
Mob-87 the responsibility of the unit coordinating search and rescue operations¹. Normally, once an on-scene frequency is established, a continuous aural or teleprinter watch is maintained by all participating on-scene mobile units on the selected frequency.

N 3158.1

Mob-87

N 3159.1

Mob-87

N 3162.1

Mob-87

¹ In accordance with the International Convention on Maritime Search and Rescue, 1979, this is the on-scene commander (OSC) or the coordinator surface search (CSS).

N 3163

C. Locating and Homing Signals

Mob-87

N 3164 § 34. (1) Locating signals are radio transmissions intended to
Mob-87 facilitate the finding of a mobile unit in distress or the location of survivors. These signals include those transmitted by searching units, and those transmitted by the mobile unit in distress, by survival craft, by float-free EPIRBs, by satellite EPIRBs and by search and rescue radar transponders to assist the searching units.

N 3165 (2) Homing signals are those locating signals which are
Mob-87 transmitted by mobile units in distress, or by survival craft, for the purpose of providing searching units with a signal that can be used to determine the bearing to the transmitting stations.

N 3166 (3) Locating signals may be transmitted in the following
Mob-87 frequency bands:

117.975 - 136 MHz;

156 - 174 MHz;

406 - 406.1 MHz; and

9 200 - 9 500 MHz.

N 3167 (4) Locating signals shall be in accordance with the relevant
Mob-87 CCIR Recommendations.

N 3168

to

NOT allocated.

N 3195

Mob-87

ARTICLE N 40

Mob-87

**Operational Procedures for Urgency
and Safety Communications in the Global
Maritime Distress and Safety System (GMDSS)**

Mob-87

Section I. General

N 3196 § 1. Urgency and safety communications include:

Mob-87

N 3197 a) navigational and meteorological warnings and
Mob-87 urgent information;

N 3198 b) ship-to-ship safety of navigation communications;

Mob-87

N 3199 c) ship reporting communications;

Mob-87

N 3200 d) support communications for search and rescue
Mob-87 operations;

N 3201 e) other urgency and safety messages; and

Mob-87

N 3202 f) communications relating to the navigation, move-
Mob-87 ments and needs of ships and weather observation
messages destined for an official meteorological
service.

Mob-87

Section II. Urgency communications

N 3203 § 2. In a terrestrial system the announcement of the urgency
Mob-87 message shall be made on one or more of the distress and safety
calling frequencies specified in Section I of Article N 38 using
digital selective calling and the urgency call format. A separate
announcement need not be made if the urgency message is to be
transmitted through the maritime mobile-satellite service.

- N 3204** § 3. The urgency signal and message shall be transmitted on
Mob-87 one or more of the distress and safety traffic frequencies specified in Section I of Article N 38, or via the maritime mobile-satellite service or on other frequencies used for this purpose.
- N 3205** § 4. The urgency signal consists of the words PAN PAN. In
Mob-87 radiotelephony each word of the group shall be pronounced as the French word “panne”.
- N 3206** § 5. The urgency call format and the urgency signal indicate
Mob-87 that the calling station has a very urgent message to transmit concerning the safety of a mobile unit or a person.
- N 3207** § 6. (1) In radiotelephony, the urgency message shall be pre-
Mob-87 ceded by the urgency signal (see No. N 3205), repeated three times, and the identification of the transmitting station.
- N 3208** (2) In narrow-band direct-printing, the urgency message
Mob-87 shall be preceded by the urgency signal (see No. N 3205) and the identification of the transmitting station.
- N 3209** § 7. (1) The urgency call format or urgency signal shall be sent
Mob-87 only on the authority of the master or the person responsible for the mobile unit carrying the mobile station or mobile earth station.
- N 3210** (2) The urgency call format or the urgency signal may be
Mob-87 transmitted by a land station or a coast earth station with the approval of the responsible authority.
- N 3211** § 8. When an urgency message which calls for action by the
Mob-87 stations receiving the message has been transmitted, the station responsible for its transmission shall cancel it as soon as it knows that action is no longer necessary.
- N 3212** § 9. (1) Error correction techniques in accordance with relevant
Mob-87 CCIR Recommendations shall be used for urgency messages by direct-printing telegraphy. All messages shall be preceded by at least one carriage return, a line feed signal, a letter shift signal and the urgency signal PAN PAN.

N 3213 (2) Urgency communications by direct-printing telegraphy
Mob-87 should normally be established in the broadcast (forward error correction) mode. The ARQ mode may subsequently be used when it is advantageous to do so.

Mob-87 **Section III. Medical Transports**

N 3214 § 10. The term “medical transports”, as defined in the 1949
Mob-87 Geneva Conventions and Additional Protocols, refers to any means of transportation by land, water or air, whether military or civilian, permanent or temporary, assigned exclusively to medical transportation and under the control of a competent authority of a party to a conflict or of neutral States and of other States not parties to an armed conflict, when these ships, craft and aircraft assist the wounded, the sick and the shipwrecked.

N 3215 § 11. For the purpose of announcing and identifying medical
Mob-87 transports which are protected under the above-mentioned Conventions, the procedure of Section II of this Article is used. The urgency signal shall be followed by the addition of the single word MEDICAL in narrow-band direct-printing and by the addition of the single word MAY-DEE-CAL pronounced as in French “médical”, in radiotelephony.

N 3216 § 12. The use of the signals described in No. **N 3215** indicates
Mob-87 that the message which follows concerns a protected medical transport. The message shall convey the following data:

N 3217 *a)* call sign or other recognized means of identification
Mob-87 of the medical transport;

N 3218 *b)* position of the medical transport;
Mob-87

N 3219 *c)* number and type of vehicles in the medical trans-
Mob-87 port;

N 3220 *d)* intended route;
Mob-87

N 3221 *e)* estimated time en route and of departure and
Mob-87 arrival, as appropriate;

N 3222 *f)* any other information, such as flight altitude, radio
Mob-87 frequencies guarded, languages used and secondary
 surveillance radar modes and codes.

N 3223 § 13. (1) The identification and location of medical transports at
Mob-87 sea may be conveyed by means of appropriate standard maritime
 radar transponders (see Recommendation **14 (Mob-87)**).

N 3224 (2) The identification and location of aircraft medical trans-
Mob-87 ports may be conveyed by the use of the secondary surveillance
 radar (SSR) system specified in Annex 10 to the Convention on
 International Civil Aviation.

N 3225 § 14. The use of radiocommunications for announcing and
Mob-87 identifying medical transports is optional; however, if they are
 used, the provisions of these Regulations and particularly of this
 Section and of Articles **N 37** and **N 38** shall apply.

Mob-87 **Section IV. Safety Communications**

N 3226 § 15. In a terrestrial system the announcement of the safety
Mob-87 message shall be made on one or more of the distress and safety
 calling frequencies specified in Section I of Article **N 38** using
 digital selective calling techniques. A separate announcement need
 not be made if the message is to be transmitted through the
 maritime mobile-satellite service.

N 3227 § 16. The safety signal and message shall normally be trans-
Mob-87 mitted on one or more of the distress and safety traffic frequencies
 specified in Section I of Article **N 38**, or via the maritime mobile-
 satellite service or on other frequencies used for this purpose.

N 3228 § 17. The safety signal consists of the word SECURITE. In
Mob-87 radiotelephony, it shall be pronounced as in French.

N 3229 § 18. The safety call format or the safety signal indicates that
Mob-87 the calling station has an important navigational or meteorological warning to transmit.

N 3230 § 19. (1) In radiotelephony, the safety message shall be preceded
Mob-87 by the safety signal (see No. **N 3228**), repeated three times, and the identification of the transmitting station.

N 3231 (2) In narrow-band direct-printing, the safety message shall
Mob-87 be preceded by the safety signal (see No. **N 3228**), and the identification of the transmitting station.

N 3232 § 20. (1) Error correction techniques in accordance with relevant
Mob-87 CCIR Recommendations shall be used for safety messages by direct-printing telegraphy. All messages shall be preceded by at least one carriage return, a line feed signal, a letter shift signal and the safety signal SECURITE.

N 3233 (2) Safety communications by direct-printing telegraphy
Mob-87 should normally be established in the broadcast (forward error correction) mode. The ARQ mode may subsequently be used when it is advantageous to do so.

Mob-87 Section V. Transmission of Maritime Safety Information

N 3234 *A. General* **Mob-87**

N 3235 § 21. The operational details of the stations transmitting mari-
Mob-87 time safety information in accordance with Nos. **N 3238**, **N 3240**, **N 3241**, **N 3243** and **N 3245** shall be indicated in the List of Radiodetermination and Special Service Stations (see Nos. **3323**, **3326** and **3334**).

N 3236 § 22. The mode and format of the transmissions mentioned in
Mob-87 Nos. **N 3238**, **N 3240**, **N 3241** and **N 3243** shall be in accordance with the relevant CCIR Recommendations.

N 3237

B. International NAVTEX System

Mob-87

N 3238 § 23. Maritime safety information shall be transmitted by
Mob-87 means of narrow-band direct-printing telegraphy with forward error correction using the frequency 518 kHz in accordance with the international NAVTEX system (see Nos. 1632, N 2969 and N 2970).

N 3239

C. 490 kHz and 4 209.5 kHz

Mob-87

N 3240 § 24. (1) The frequency 490 kHz may be used, after full imple-
Mob-87 mentation of the GMDSS, for the transmission of maritime safety information by means of narrow-band direct-printing telegraphy with forward error correction (see No. N 2968 and Resolution 210 (Mob-87)).

N 3241

Mob-87 (2) The frequency 4 209.5 kHz is used exclusively for NAVTEX-type transmission by means of narrow-band direct-printing telegraphy with forward error correction (see Resolution 332 (Mob-87)).

N 3242

D. High Seas

Mob-87

Maritime Safety Information

N 3243 § 25. Maritime safety information is transmitted by means of
Mob-87 narrow-band direct-printing telegraphy with forward error correction using the frequencies 4 210 kHz, 6 314 kHz, 8 416.5 kHz, 12 579 kHz, 16 806.5 kHz, 19 680.5 kHz, 22 376 kHz and 26 100.5 kHz (see Resolution 333 (Mob-87)).

N 3244

E. Maritime Safety Information via Satellite

Mob-87

N 3245 § 26. Maritime safety information may be transmitted via
Mob-87 satellite in the maritime mobile-satellite service using the band 1 530 - 1 545 MHz (see Nos. 726, N 3049 and N 3050).

Mob-87

**Section VI. Internship Navigation
Safety Communications**

N 3246 § 27. (1) Internship navigation safety communications are those
Mob-87 VHF radiotelephone communications conducted between ships for
the purpose of contributing to the safe movement of ships.

N 3247 (2) The frequency 156.650 MHz is used for intership navigation safety communications (see also No. **N 3039** and note *p*) in Appendix 18).

Mob-87

Section VII. Use of Other Frequencies for Distress and Safety

N 3248 § 28. Radiocommunications for distress and safety purposes
Mob-87 may be conducted on any appropriate communications frequency, including those used for public correspondence. In the maritime mobile-satellite service, frequencies in the bands 1 530 - 1 544 MHz and 1 626.5 - 1 645.5 MHz are used for this function as well as for distress alerting purposes (see No. **N 3107**).

N 3249
to NOT allocated
N 3275

Mob-87

ARTICLE N 41

Mob-87

Alerting Signals

Mob-87

**Section I. Emergency Position-Indicating
Radiobeacon (EPIRB) and Satellite EPIRB Signals**

N 3276 § 1. The emergency position-indicating radiobeacon signal
Mob-87 transmitted on 156.525 MHz and satellite EPIRB signals in the
band 406 - 406.1 MHz or 1 645.5 - 1 646.5 MHz shall be in accordance with relevant CCIR Recommendations.

Mob-87

Section II. Digital Selective Calling

N 3277 § 2. The characteristics of the “distress call” (see
Mob-87 No. N 3112) in the digital selective calling system shall be in
accordance with relevant CCIR Recommendations.

N 3278

to NOT allocated.

N 3305

CHAPTER X

**Mob-83 Aeronautical Mobile Service and
Aeronautical Mobile-Satellite Service**

Mob-83 ARTICLE 42A

Mob-83 Introduction

3362 § 1. With the exception of Articles **43, 44, 46, 49, 50** and
Mob-87 No. 3652, the other provisions of this Chapter may be governed by
special arrangements concluded pursuant to Article **31** of the
International Telecommunication Convention, Nairobi, 1982, or
by intergovernmental agreements¹ provided their implementation
does not cause harmful interference to the radio services of other
countries.

3363 SUP
Mob-87

3362.1 ¹ For example, the International Civil Aviation Organization
Mob-83 (ICAO) has agreed upon standards and recommended practices adapted to
the needs of aircraft operation which have been proven in practice and are
well established in current use.

ARTICLE 43

**Mob-83 Authority of the Person Responsible for the Mobile
Stations in the Aeronautical Mobile Service and
in the Aeronautical Mobile-Satellite Service**

3364 § 1. The service of a mobile station is placed under the supreme authority of the person responsible for the aircraft or other vehicle carrying the mobile station.

3365 § 2. The person holding this authority shall require that each operator comply with these Regulations and that the mobile station for which the operator is responsible is used, at all times, in accordance with these Regulations.

3366 § 3. Except as otherwise provided for in these Regulations, the person responsible, as well as all the persons who may have knowledge of any information whatever obtained by means of the radiocommunication service, are placed under the obligation of observing and ensuring the secrecy of correspondence.

Mob-87 3367 § 4. The provisions of Nos. **3364**, **3365** and **3366** shall also apply to personnel of aircraft earth stations.

3368
to
3391 NOT allocated.

ARTICLE 44

**Mob-83 Operators' Certificates for Aircraft Stations
 and for Aircraft Earth Stations****Section I. General Provisions****3392 SUP
Mob-87**

**3393 (1) The service of every aircraft station and every aircraft
Mob-87** earth station shall be controlled by an operator holding a certificate issued or recognized by the government to which the station is subject. Provided the station is so controlled, other persons besides the holder of the certificate may use the radiotelephone equipment.

**3393A (2) In order to meet special needs, special agreements
Mob-87** between administrations may fix the conditions to be fulfilled in order to obtain a radiotelephone operator's certificate intended to be used in aircraft radiotelephone stations and aircraft earth stations complying with certain technical conditions and certain operating conditions. These agreements, if made, shall be on the condition that harmful interference to international services shall not result therefrom. These conditions and agreements shall be mentioned in the certificates issued to such operators.

**3394 (3) The service of automatic communication devices¹
Mob-87** installed in an aircraft station or aircraft earth station shall be controlled by an operator holding a certificate issued or recognized by the government to which the station is subject. Provided the devices are so controlled, they may be used by other persons. If

3394.1 ¹ The term "automatic communication devices" is intended to include such equipment as teleprinters, data transfer systems, etc.

such devices require for their basic function the use of Morse code signals specified in the Instructions for the Operation of the International Public Telegram Service, the service shall be performed by an operator holding a radiotelegraph operator's certificate. However, this latter requirement does not apply to automatic devices which may use Morse code signals solely for identification purposes.

3395 (4) Nevertheless, in the service of aircraft stations and
Mob-87 aircraft earth stations operating radiotelephony solely on frequencies above 30 MHz, each government shall decide for itself whether a certificate is necessary and, if so, shall define the conditions for obtaining it.

3396 (5) The provisions of No. **3395** shall not, however, apply to
Mob-87 any aircraft station or aircraft earth station working on frequencies assigned for international use.

3397 § 2. (1) In the case of complete unavailability of the operator in the course of a flight, and solely as a temporary measure, the person responsible for the station may authorize an operator holding a certificate issued by the government of another Member of the Union to perform the radiocommunication service.

3398 (2) When it is necessary to employ a person without a certificate or an operator not holding an adequate certificate as a temporary operator, his performance as such must be limited solely to signals of distress, urgency and safety, messages relating thereto, messages relating directly to the safety of life and essential messages relating to the navigation and safe movement of the aircraft. Persons employed in these cases are bound by the provisions of No. **3402** regarding the secrecy of correspondence.

3399 (3) In all cases, such temporary operators must be replaced as soon as possible by operators holding the certificate prescribed in paragraph 1 of this Article.

- 3400** § 3. (1) Each administration shall take the necessary steps to prevent, to the maximum extent possible, the fraudulent use of certificates. For this purpose, such certificates shall bear the holder's signature and shall be authenticated by the issuing administration. Administrations may employ, if they wish, other means of identification such as photographs, fingerprints, etc.
- 3401** (2) To facilitate verification of certificates, these may carry, if necessary, in addition to the text in the national language, a translation of this text in a working language of the Union.
- 3402** § 4. Each administration shall take the necessary steps to place operators under the obligation to preserve the secrecy of correspondence as provided for in No. **2023**.

Section II. Classes and Categories of Certificates

- 3403** § 5. (1) There are two classes of certificates for radiotelegraph
Mob-87 operators, as well as a special certificate.
- 3404** (2) There are two categories of radiotelephone operators'
Mob-87 certificates, general and restricted.
- 3405** § 6. (1) The holder of a first- or second-class radiotelegraph
Mob-87 operator's certificate may carry out the radiotelegraph or radiotelephone service of any aircraft station or aircraft earth station.
- 3406** (2) The holder of a radiotelephone operator's general certi-
Mob-87 ficate may carry out the radiotelephone service of any aircraft station or of any aircraft earth station.

3407 to 3409 SUP
Mob-87

3403.1 and 3404.1 SUP
Mob-87

- 3410** (3) The holder of a radiotelephone operator's restricted
Mob-87 certificate may carry out the radiotelephone service of any aircraft station or aircraft earth station operating on frequencies allocated exclusively to the aeronautical mobile service or the aeronautical mobile-satellite service, provided that the operation of the transmitter requires only the use of simple external switching devices.
- 3411** (4) The radiotelephone service of aircraft stations or aircraft
Mob-87 earth stations for which only a restricted radiotelephone operator's certificate is required may be carried out by an operator holding a radiotelegraph operator's special certificate.
- 3412** § 7. Exceptionally, the second-class radiotelegraph operator's certificate as well as the radiotelegraph operator's special certificate may be limited exclusively to the radiotelegraph service. In such cases the certificate shall be suitably endorsed.

Section III. Conditions for the Issue of Operators' Certificates

3413 *A. General*

- 3414** § 8. (1) The conditions to be imposed for obtaining the various certificates are contained in the following paragraphs and represent the minimum requirements.
- 3415** (2) Each administration is free to fix the number of examinations necessary to obtain each certificate.
- 3416** § 9. (1) The administration which issues a certificate may, before authorizing an operator to carry out the service on board aircraft, require the fulfilment of other conditions (for example: experience with automatic communication devices; further technical and professional knowledge relating particularly to navigation; physical fitness; the completion as an operator of a certain number of flying hours; etc.).
- 3417** (2) Administrations should take whatever steps they consider necessary to ensure the continued proficiency of operators after prolonged absences from operational duties.

3418 *B. First-Class Radiotelegraph Operator's Certificate*

3419 § 10. The first-class certificate is issued to candidates who have given proof of the technical and professional knowledge and qualifications enumerated below:

3420 a) knowledge both of the general principles and
Mob-87 theory of radio;

3421 b) theoretical and practical knowledge of the opera-
Mob-87 tion, maintenance and adjustment of radiotelegraph
and radiotelephone apparatus;

3422 SUP
Mob-87

3423 c) ability to send correctly by hand and receive cor-
Mob-87 rectly by ear, in the Morse code, code groups
(mixed letters, figures and punctuation marks) ¹ at a
speed of twenty groups a minute, and a plain
language text at a speed of twenty-five words ² a
minute. The duration of each test of sending and of
receiving shall be, as a rule, five minutes;

3424 d) ability to send correctly and to receive correctly by
Mob-87 radiotelephone in one of the working languages of
the Union;

3425 e) detailed knowledge of the Regulations applying to
Mob-87 radiocommunications, knowledge of the provisions
of the International Convention for the Safety of
Life at Sea which relate to radio, and, in the case of
air navigation, knowledge of the special provisions
governing the aeronautical fixed, mobile and
radionavigation services. In the latter case, the cer-
tificate states that the holder has successfully passed
the tests relating to these special provisions;

3423.1 ¹ Each code group shall comprise five characters, each figure
Mob-87 or punctuation counting as two characters.

3423.2 ² The average word of the text in plain language shall contain
Mob-87 five characters.

3426 and 3427 SUP
Mob-87

3428 *C. Second-Class Radiotelegraph
 Operator's Certificate*

3429 § 11. The second-class certificate is issued to candidates who have given proof of the technical and professional knowledge and qualifications enumerated below:

3430 a) elementary theoretical and practical knowledge of
Mob-87 basic radiocommunications;

3431 b) elementary theoretical and practical knowledge
Mob-87 of the operation, maintenance and adjustment of radiotelegraph and radiotelephone apparatus;

3432 SUP
Mob-87

3433 c) ability to send correctly by hand and to receive
Mob-87 correctly by ear, in the Morse code, code groups (mixed letters, figures and punctuation marks) at a speed of sixteen groups a minute, and a plain language text at a speed of twenty words a minute. The duration of each test of sending and of receiving shall, as a rule, be five minutes (the provisions of Nos. **3423.1** and **3423.2** also apply);

3434 d) ability to send correctly and to receive correctly by
Mob-87 radiotelephone, in one of the working languages of the Union ¹;

3435 e) knowledge of the Regulations applying to radio-
Mob-87 communications, knowledge of the provisions of the International Convention for the Safety of Life at Sea which relate to radio, and, in the case of air navigation, knowledge of the special provisions

3434.1 ¹ This provision need not apply in the case provided for in
Mob-87 No. **3412**.

governing the aeronautical fixed, mobile, and radionavigation services. In the latter case, the certificate states that the holder has successfully passed the tests relating to these special provisions.

3436 and 3437 SUP
Mob-87

3438 *D. Radiotelegraph Operator's Special Certificate*

3439 § 12. (1) The radiotelegraph operator's special certificate is issued to candidates who have given proof of the knowledge and professional qualifications enumerated below:

3440 a) knowledge of the practical operation and adjust-
Mob-87 ment of radiotelegraph and radiotelephone apparatus¹;

3441 b) ability to send correctly by hand and receive cor-
Mob-87 rectly by ear, in the Morse code, code groups (mixed letters, figures and punctuation marks) at a speed of sixteen groups a minute, and a plain language text at a speed of twenty words a minute (the provisions of Nos. **3423.1** and **3423.2** also apply);

3441A c) ability to send correctly and to receive correctly by
Mob-87 radiotelephone in one of the working languages of the Union¹;

3442 d) knowledge of the Regulations applying to radiotele-
Mob-87 graph communications and specifically of that part of those Regulations relating to safety of life at sea.

3443 (2) Each administration concerned may fix the other condi-
Mob-87 tions for obtaining this certificate.

3440.1 }
Mob-87 }
3441A.1 } No. **3412**.
Mob-87 }

¹ This provision need not apply in the case provided for in

3444 *E. Radiotelephone Operators' Certificates*

3445 § 13. The radiotelephone operator's general certificate is issued to candidates who have given proof of the knowledge and professional qualifications enumerated below (see also Nos. **3405** and **3406**):

3446 a) a knowledge of the elementary principles of radio-telephony;

3447 b) detailed knowledge of the practical operation and adjustment of radiotelephone apparatus;

3448 c) ability to send correctly and to receive correctly by
Mob-87 radiotelephone in one of the working languages of the Union;

3449 d) detailed knowledge of the Regulations applying to radiotelephone communications and specifically of that part of those Regulations relating to the safety of life.

3450 § 14. (1) The radiotelephone operator's restricted certificate is issued to candidates who have given proof of the knowledge and professional qualifications enumerated below:

3451 a) practical knowledge of radiotelephone operation and procedure;

3452 b) ability to send correctly and to receive correctly by
Mob-87 radiotelephone in one of the working languages of the Union;

3453 c) general knowledge of the Regulations applying to radiotelephone communications and specifically of that part of those Regulations relating to the safety of life.

3454 (2) For aircraft radiotelephone stations and aircraft earth
Mob-87 stations operating on frequencies allocated exclusively to the aeronautical mobile service or the aeronautical mobile-satellite service, each administration may itself fix the conditions for

obtaining a radiotelephone operator's restricted certificate, provided that the operation of the transmitter requires only the use of simple external switching devices. The administration shall ensure that the operator has an adequate knowledge of radiotelephone operation and procedure particularly as far as distress, urgency and safety are concerned. This in no way contravenes the provisions of No. **3393A**.

3455 (3) Administrations in Region 1 do not issue certificates under No. **3454**.

3456 § 15. A radiotelephone operator's certificate shall show whether it is a general certificate or a restricted certificate and, in the latter case, if it has been issued in conformity with the provisions of No. **3454**.

3457 SUP
Mob-83

3458
to NOT allocated.
3482

ARTICLE 45

Mob-87

**Personnel of Aeronautical Stations
and Aeronautical Earth Stations**

3483 Administrations shall ensure that the staff on duty in
Mob-87 aeronautical stations and in aeronautical earth stations shall be
adequately qualified to operate the stations efficiently.

3484
to NOT allocated.
3508

ARTICLE 46

Mob-83 Inspection of Aircraft Stations and Aircraft Earth Stations

3509 § 1. (1) The inspectors of governments or appropriate adminis-
Mob-87 trations of countries who visit an aircraft station or aircraft earth
station may require the production of the licence for examination.
The operator of the station, or the person responsible for the
station, shall facilitate this examination. The licence shall be kept
in such a way that it can be produced upon request.

3510 (2) The inspectors shall have in their possession an identity
card or badge, issued by the competent authority, which they shall
show on request of the person responsible for the aircraft.

3511 (3) When the licence cannot be produced or when manifest
irregularities are observed, governments or administrations may
inspect the radio installations in order to satisfy themselves that
these conform to the conditions imposed by these Regulations.

3512 (4) In addition, inspectors have the right to require the
production of the operators' certificates, but proof of professional
knowledge may not be demanded.

3513 § 2. (1) When a government or administration has found it
Mob-87 necessary to adopt the course indicated in No. 3511, or when the
operators' certificates cannot be produced, the government or
administration to which the aircraft station or aircraft earth station
is subject shall be so informed without delay. In addition, the
procedure specified in Article 21 is followed when necessary.

3514 (2) Before leaving, the inspector shall report the result of
his inspection to the person responsible for the aircraft. If any
breach of the conditions imposed by these Regulations is observed,
the inspector shall make this report in writing.

3515 § 3. Members undertake not to impose upon foreign aircraft
Mob-87 stations or aircraft earth stations which are temporarily within their
territorial limits or which make a temporary stay in their territory,
technical and operating conditions more severe than those contemplated in these Regulations. This undertaking in no way affects arrangements which are made under international agreements relating to air navigation, and which are therefore not covered by these Regulations.

3516
to NOT allocated.
3540

ARTICLE 47

**Mob-87 Working Hours of Stations in the
Aeronautical Mobile Service and in the
Aeronautical Mobile-Satellite Service**

3541 § 1. Every station of the aeronautical mobile service and the
Mob-87 aeronautical mobile-satellite service shall have an accurate clock
correctly regulated to Coordinated Universal Time (UTC).

3542 § 2. The service of an aeronautical station or an aeronautical
Mob-87 earth station shall be continuous throughout the period during
which it bears responsibility for the radiocommunication service to
aircraft in flight.

3542A § 2A. Aircraft stations and aircraft earth stations in flight shall
Mob-87 maintain service to meet the essential communications needs of the
aircraft with respect to safety and regularity of flight and shall
maintain watch as required by the competent authority and shall
not cease watch, except for reasons of safety, without informing
the aeronautical station or aeronautical earth station concerned.

3543 SUP
Mob-87

3544 NOT allocated.
to
3568

ARTICLE 48

**Mob-87 Stations on Board Aircraft Communicating
with Stations in the Maritime Mobile Service
and in the Maritime Mobile-Satellite Service**

3569 and 3570 SUP
Mob-83

3571 Stations on board aircraft may communicate, for pur-
Mob-87 poses of distress, and for public correspondence ¹, with stations of
the maritime mobile or maritime mobile-satellite services. For these
purposes, they shall conform to the relevant provisions of
Chapter IX or N IX and Chapter XI, Articles 59 (Section III), 61,
62, 63, 65 and 66 (see also Nos. 962, 963 and 3633).

3572 NOT allocated.
to
3596

3571.1 ¹ Stations on board aircraft may communicate for public
Mob-87 correspondence purposes as long as watch is maintained on the frequencies
provided for safety and regularity of flight.

ARTICLE 49

**Mob-87 Conditions to be Observed by Mobile Stations in
the Aeronautical Mobile Service and by Mobile Earth Stations
in the Aeronautical Mobile-Satellite Service**

Mob-87 Section I. Aeronautical Mobile Service

3597 § 1. Mobile stations shall be established in such a way as to conform to the provisions of Chapters **III** and **X** as regards frequencies and classes of emission.

3598 § 2. The frequencies of emission of mobile stations shall be checked as often as possible by the inspection service to which these stations are subject.

3599 § 3. The energy radiated by receiving apparatus shall be reduced to the lowest possible value and shall not cause harmful interference to other stations.

3600 § 4. Administrations shall take all practicable steps necessary to ensure that the operation of any electrical or electronic apparatus installed in mobile stations does not cause harmful interference to the essential radio services of stations which are operating in accordance with the provisions of these Regulations.

3601 and 3602 SUP
Mob-87

3603 § 6. The operation of a broadcasting service (see No. **36**) by an aircraft station at sea and over the sea is prohibited (see also No. **2665**).

3604 § 7. Mobile stations other than survival craft stations shall be provided with the documents enumerated in the appropriate section of Appendix **11** (Section VI, "Aircraft Stations").

Mob-87 Section II. Aeronautical Mobile-Satellite Service

3605 § 8. The provisions of Nos. **3597** to **3600**, **3603** and **3604** are
Mob-87 also applicable to mobile earth stations in the aeronautical mobile-
satellite service.

3606
to NOT allocated.
3629

ARTICLE 50

**Mob-87 Special Rules Relating to the Use of Frequencies
in the Aeronautical Mobile Service and in the
Aeronautical Mobile-Satellite Service**

3630 § 1. Frequencies in any band allocated to the aeronautical
Mob-87 mobile (R) service and the aeronautical mobile-satellite (R) service are reserved for communications relating to safety and regularity of flight between any aircraft and those aeronautical stations and aeronautical earth stations primarily concerned with flight along national or international civil air routes.

3631 § 2. Frequencies in any band allocated to the aeronautical
Mob-87 mobile (OR) service and the aeronautical mobile-satellite (OR) service are reserved for communications between any aircraft and aeronautical stations and aeronautical earth stations other than those primarily concerned with flight along national or international civil air routes.

3632 § 3. Frequencies in the bands allocated to the aeronautical
Mob-87 mobile service between 2 850 kHz and 22 000 kHz (see Article 8) shall be assigned in conformity with the provisions of Appendices 26 and 27 Aer2 and the other relevant provisions of these Regulations.

3633 § 4. Administrations shall not permit public correspondence
Mob-87 in the frequency bands allocated exclusively to the aeronautical mobile service or to the aeronautical mobile-satellite service.

3634 § 5. In order to reduce interference, aircraft stations shall, within the means at their disposal, endeavour to select for calling the band with the most favourable propagational characteristics for effecting reliable communication. In the absence of more precise data, an aircraft station shall, before making a call, listen for the signals of the station with which it desires to communicate. The strength and intelligibility of such signals are useful as a guide to propagational conditions and indicate which is the preferable band for calling.

3635 § 6. Governments may, by agreement, decide the frequencies
Mob-87 to be used for call and reply in the aeronautical mobile service and
the aeronautical mobile-satellite service.

3636
to NOT allocated.
3650

ARTICLE 51

**Order of Priority of Communications
in the Aeronautical Mobile Service and in the
Aeronautical Mobile-Satellite Service**

3651 § 1. The order of priority for communications¹ in the aero-
Mob-87 nautical mobile service and the aeronautical mobile-satellite service shall be as follows, except where impracticable in a fully automated system in which, nevertheless, Category 1 shall receive priority:

1. Distress calls, distress messages and distress traffic.
2. Communications preceded by the urgency signal.
3. Communications relating to radio direction-finding.
4. Flight safety messages.
5. Meteorological messages.
6. Flight regularity messages.
7. Messages relating to the application of the United Nations Charter.
8. Government messages for which priority has been expressly requested.
9. Service communications relating to the working of the telecommunication service or to communications previously exchanged.
10. Other aeronautical communications.

3652 § 2. Categories 1 and 2 shall receive priority over all other
Mob-83 communications irrespective of any agreement under the provisions of No. **3362**.

3651.1 ¹ The term *communications* as used in this Article includes radiotelegrams, radiotelephone calls and radiotelex calls.

Mob-87

ARTICLE 51A

Mob-87

**General Communication Procedure in the
Aeronautical Mobile Service**

Mob-87

Section I. General Provisions

3653 § 1. As a general rule, it rests with the aircraft station to
Mob-87 establish communication with the aeronautical station. For this purpose, the aircraft station may call the aeronautical station only when it comes within the designated operational coverage¹ area of the latter.

3654 § 2. An aeronautical station having traffic for an aircraft
Mob-87 station may call this station if it has reason to believe that the aircraft station is keeping watch and is within the designated operational coverage area (see No. **3653.1**) of the aeronautical station.

3655 § 3. When an aeronautical station receives calls in close
Mob-87 succession from several aircraft stations, it decides on the order in which these stations may transmit their traffic. Its decision shall be based on the priority in Article 51.

3656 § 4. If an aeronautical station finds it necessary to intervene
Mob-87 in communications between aircraft stations, these stations shall comply with the instructions given by the aeronautical station.

3657 § 5. Before transmitting, a station shall take precautions to
Mob-87 ensure that it will not interfere with a communication already in progress and that the station called is not in communication with another station.

3653.1
Mob-87

¹ Designated operational coverage is that volume of airspace needed operationally in order to provide a particular service and within which the facility is afforded frequency protection.

3660 § 8. Aircraft stations shall not radiate carrier waves between
Mob-87 calls.

3661 *A. General*
Mob-87

3663 § 10. In order to facilitate radiocommunications, stations
Mob-87 shall use the service abbreviations given in Appendix 13.

3663A § 11. When it is necessary for a station in the aeronautical
Mob-87 mobile service to send test signals, either for the adjustment of a transmitter before making a call or for the adjustment of a receiver, such signals shall not be continued for more than ten seconds and shall consist of a series of VVV followed by the call sign of the station emitting the test signals.

3664**Mob-87***B. Method of Calling***3665****Mob-87**

§ 12.

The call consists of:

- the call sign of the station called, not more than three times;
- the word DE;
- the call sign of the calling station, not more than three times;
- the letter K.

3666**Mob-87**

§ 13.

The call “to all stations” CQ is used before the transmission of information of any kind intended to be read or used by anyone who may intercept it.

3667**Mob-87***C. Form of Reply to Calls***3668****Mob-87**

§ 14.

The reply to calls consists of:

- the call sign of the calling station, not more than three times;
- the word DE;
- the call sign of the station called, once only;
- the letter K.

3669**Mob-87***D. Difficulties in Reception***3670****Mob-87**

§ 15.

If the station called is unable to accept traffic immediately it shall reply to the call as indicated in Nos. **3667** and **3668** but it shall replace the letter K by the signal · – · · · (wait) followed by a number indicating in minutes the probable duration of the waiting time.

3671**Mob-87***E. Signal for the End of Transmission***3672****Mob-87**

§ 16.

The transmission of a radiotelegram shall be terminated by the signal · – · – · (end of transmission) followed by the letter K.

3673

F. Acknowledgement of Receipt

Mob-87

3674 § 17. The receipt of a radiotelegram shall be acknowledged by
Mob-87 the receiving station in the following manner:

- the call sign of the transmitting station;
- the word DE;
- the call sign of the receiving station;
- the abbreviation QSL.

3675

G. End of Work

Mob-87

3676 § 18. The end of work between stations shall be indicated by
Mob-87 each of them by means of the signal . . . — . — (end of work).

ARTICLE 52

**General Radiotelegraph Procedure
in the Aeronautical Mobile Service**

3677 to 3767 SUP
Mob-87

3768
to NOT allocated.
3792

ARTICLE 53

**Radiotelephone Procedure in the
Aeronautical Mobile Service — Calls**

3793 to 3805 SUP
Mob-87

3806
to NOT allocated.
3830

CHAPTER XI

Maritime Mobile Service and Maritime Mobile-Satellite Service

ARTICLE 54

Authority of the Master

- 3831** § 1. The service of a ship station is placed under the supreme authority of the master or of the person responsible for the ship or other vessel carrying the station.
- 3832** § 2. The person holding this authority shall require that each operator comply with these Regulations and that the ship station for which the operator is responsible is used, at all times, in accordance with these Regulations.
- 3833** § 3. The master or the person responsible, as well as all persons who may have knowledge of the text or even of the existence of a radiotelegram, or of any information whatever obtained by means of the radiocommunication service, are placed under the obligation of observing and ensuring the secrecy of correspondence.
- 3834** § 4. The provisions of Nos. **3831**, **3832** and **3833** shall also apply to personnel of ship earth stations.
- 3835**
to
3859 NOT allocated.

ARTICLE 55

Mob-87**Certificates for Personnel of
Ship Stations and Ship Earth Stations****Section 1. General Provisions**

3860 § 1. (1) The service of every ship Morse radiotelegraph station
Mob-87 shall be performed by an operator holding a certificate issued or
recognized by the government to which the station is subject.

3861 (2) The service of every ship radiotelephone station, ship
Mob-87 earth station and ship station using the frequencies and techniques
prescribed in Chapter N IX shall be controlled by an operator
holding a certificate issued or recognized by the government to
which the station is subject. Provided the station is so controlled,
other persons besides the holder of the certificate may use the
equipment.

3862 SUP
Mob-87

3863 (3) The service of automatic communication devices¹ in-
stalled in a ship station shall be controlled by an operator holding
a certificate issued or recognized by the government to which the
station is subject. Provided the devices are so controlled, they may
be used by other persons. If such devices require for their basic
function the use of Morse code signals specified in the Instructions
for the Operation of the International Public Telegram Service,
the service shall be performed by an operator holding a

3863.1 ¹ The term "automatic communication devices" is intended to
include such equipment as teleprinters, data transfer systems, etc.

radiotelegraph operator's certificate. However, this latter requirement does not apply to automatic devices which may use Morse code signals solely for identification purposes.

3864 (4) Nevertheless, in the service of radiotelephone stations operating solely on frequencies above 30 MHz, each government shall decide for itself whether a certificate is necessary and, if so, shall define the conditions for obtaining it.

3865 (5) The provisions of No. **3864** shall not, however, apply to any ship station working on frequencies assigned for international use.

3866 § 2. (1) In the case of complete unavailability of the operator in the course of a sea passage and solely as a temporary measure, the master or the person responsible for the station may authorize an operator holding a certificate issued by the government of another Member to perform the radiocommunication service.

3867 (2) When it is necessary to employ a person without a
Mob-87 certificate or an operator not holding an adequate certificate as a temporary operator, his performance as such must be limited solely to signals of distress, distress alerting, urgency and safety, messages relating thereto, messages relating directly to the safety of life and urgent messages relating to the movement of the ship. Persons employed in these cases are bound by the provisions of No. **3877** regarding the secrecy of correspondence.

3868 (3) In all cases, such temporary operators must be replaced as soon as possible by operators holding the certificate prescribed in paragraph 1 of this Article.

3869 § 3. (1) Each administration shall take the necessary steps to prevent, to the maximum extent possible, the fraudulent use of certificates. For this purpose, such certificates shall bear the holder's signature and shall be authenticated by the issuing administration. Administrations may employ, if they wish, other means of identification such as photographs, fingerprints, etc.

3870 (2) In the maritime mobile service the certificates issued after 1 January 1978 shall bear the photograph of the holder and the holder's date of birth.

- 3871** (3) To facilitate verification of certificates, these may carry, if necessary, in addition to the text in the national language, a translation of this text in a working language of the Union.
- 3872** (4) In the maritime mobile service all certificates not in one of the working languages of the Union and issued after 1 January 1978 shall carry at least the following information in one of these working languages:
- 3873** a) the name and date of birth of the holder;
 - 3874** b) the title of the certificate and its date of issue;
 - 3875** c) if applicable, the number and period of validity of the certificate;
 - 3876** d) the issuing administration.
- 3877** § 4. Each administration shall take the necessary steps to place operators under the obligation to preserve the secrecy of correspondence as provided for in No. **2023**.
- 3877A** § 4A. Each administration may determine the conditions
Mob-87 under which personnel holding certificates specified in Nos. **3879** to **3883** may be granted certificates under Nos. **3890B** to **3890E**.

Mob-87 **Section II. Categories of Certificates for
Operators of Ship Stations and Ship Earth Stations
Using the Frequencies and Techniques Prescribed in
Chapter IX and for Public Correspondence**

- 3878** § 5. (1) There are four categories of certificates for radiotelegraph operators¹, namely:
- 3879** a) the radiocommunication operator's general certificate;
 - 3880** b) the first-class radiotelegraph operator's certificate;

3878.1 ¹ As regards the employment of operators holding the different certificates, see Article **56**.

- 3881** c) the second-class radiotelegraph operator's certificate;
- 3882** d) the radiotelegraph operator's special certificate.
- 3883** (2) There are two categories of radiotelephone operators' ¹ certificates, general and restricted.
- 3884** § 6. (1) The holder of a radiocommunication operator's general certificate, or of a first-class or second-class radiotelegraph operator's certificate, may carry out the radiotelegraph or radiotelephone service of any ship station.
- 3885** (2) The holder of a radiotelephone operator's general certificate may carry out the radiotelephone service of any ship station.
- 3886** (3) The holder of a radiotelephone operator's restricted certificate may carry out the radiotelephone service of any ship station, provided that the operation of the transmitter requires only the use of simple external controls, and excludes all manual adjustment of frequency determining elements, with the stability of the frequencies maintained by the transmitter itself within the limits of tolerance specified by Appendix 7, and the peak envelope power of the transmitter does not exceed 1.5 kW.
- 3887** (4) The radiotelephone operator's restricted certificate may be limited exclusively to one or more of the maritime mobile frequency bands. In such cases the certificate shall be suitably endorsed.
- 3888** (5) The radiotelegraph service of ships for which a radiotelegraph installation is not made compulsory by international agreements, as well as the radiotelephone service of ship stations for which only a radiotelephone operator's restricted certificate is required, may be carried out by the holder of a radiotelegraph operator's special certificate ².
- Mob-83**

3883.1 ¹ As regards the employment of operators holding the different certificates, see Article 56.

3888.1 ² The radiotelegraph service of ships equipped with a radiotelegraph installation in accordance with Regulation 131 (2) (a) of the Torremolinos International Convention for the Safety of Fishing Vessels, 1977, may be carried out by the holder of a radiotelegraph operator's special certificate.

Mob-83

3889 (6) However, where the conditions specified in No. **3934** are
Mob-83 satisfied, the radiotelegraph service of ships for which a radiotelegraph installation is not made compulsory by international agreements, as well as the radiotelephone service of any ship station, may be carried out by the holder of a radiotelegraph operator's special certificate ¹.

3890 § 7. Exceptionally, the second-class radiotelegraph operator's certificate as well as the radiotelegraph operator's special certificate may be limited exclusively to the radiotelegraph service. In such cases the certificate shall be suitably endorsed.

Mob-87 **Section IIA. Categories of Certificates for
 Personnel of Ship Stations and Ship Earth Stations
 Using the Frequencies and Techniques Prescribed in
 Chapter N IX and for Public Correspondence**

3890A § 7A. (1) There are four categories of certificates for personnel of
Mob-87 ship stations and ship earth stations using the frequencies and techniques prescribed in Chapter N IX:

3890B a) First-Class Radio Electronic Certificate;
Mob-87

3890C b) Second-Class Radio Electronic Certificate;
Mob-87

3890D c) General Operator's Certificate;
Mob-87

3890E d) Restricted Operator's Certificate.
Mob-87

3890F (2) The holder of one of the certificates specified in
Mob-87 Nos. **3890B**, **3890C**, **3890D** and **3890E** may carry out the service of ship stations or ship earth stations using the frequencies and techniques prescribed in Chapter N IX.

3889.1 ¹ The radiotelegraph service of ships equipped with a radio-
Mob-83 telegraph installation in accordance with Regulation 131 (2) (a) of the Torremolinos International Convention for the Safety of Fishing Vessels, 1977, may be carried out by the holder of a radiotelegraph operator's special certificate.

Mob-87

**Section III. Conditions for the Issue of
Certificates for Operators of Ship Stations
and Ship Earth Stations Using the Frequencies
and Techniques Prescribed in Chapter IX
and for Public Correspondence**

3891

A. General

3892

§ 8. (1) The conditions to be imposed for obtaining the various certificates are contained in the following paragraphs and represent the minimum requirements.

3893

(2) Each administration is free to fix the number of examinations necessary to obtain each certificate.

3894

§ 9. (1) The administration which issues a certificate may, before authorizing an operator to carry out the service on board a ship, require the fulfilment of other conditions (for example: experience with automatic communication devices; further technical and professional knowledge relating particularly to navigation; physical fitness; etc.).

3895

(2) Administrations should take whatever steps they consider necessary to ensure the continued proficiency of operators after prolonged absences from operational duties.

3896

(3) However, with respect to the maritime mobile service, administrations should also take whatever steps they consider necessary to ensure the continued proficiency of operators while in service.

3897

*B. Radiocommunication Operator's General Certificate
for the Maritime Mobile Service*

3898

§ 10. The radiocommunication operator's general certificate for the maritime mobile service is issued to candidates who have given proof of the technical and professional knowledge and qualifications enumerated below:

3899

- a) knowledge of the principles of electricity and the theory of radio and of electronics sufficient to meet the requirements specified in Nos. 3900, 3901 and 3902;

- 3900** *b)* theoretical knowledge of modern radiocommunication equipment, including marine radiotelegraph and radiotelephone transmitters and receivers, marine antenna systems, automatic alarm devices, radio equipment for lifeboats and other survival craft, direction-finding equipment, together with all auxiliary items including power supply (such as motors, alternators, generators, inverters, rectifiers and accumulators), as well as a general knowledge of the principles of other apparatus generally used for radionavigation, with particular reference to maintaining the equipment in service;
- 3901** *c)* practical knowledge of the operation, adjustment and maintenance of the apparatus mentioned in No. **3900**, including the taking of direction-finding bearings and knowledge of the principles of the calibration of radio direction-finding apparatus;
- 3902** *d)* practical knowledge necessary for the location and remedying (using appropriate testing equipment and tools) of faults in the apparatus mentioned in No. **3900** which may occur during a voyage;
- 3903** *e)* ability to send correctly by hand and to receive correctly by ear, in the Morse code, code groups (mixed letters, figures and punctuation marks) at a speed of sixteen groups a minute, and a plain language text at a speed of twenty words a minute. Each code group shall comprise five characters, each figure or punctuation mark counting as two characters. The average word of the text in plain language shall contain five characters. The duration of each test of sending and receiving shall be, as a rule, five minutes;
- 3904** *f)* ability to send correctly and to receive correctly by radiotelephone;

- 3905 g) knowledge of the Regulations applying to radio-communications, knowledge of the documents relating to charges for radiocommunications and knowledge of the provisions of the Convention for the Safety of Life at Sea which relate to radio;
- 3906 h) a sufficient knowledge of world geography, especially the principal shipping routes and the most important telecommunication routes;
- 3907 i) knowledge of one of the working languages of the Union. Candidates should be able to express themselves satisfactorily in that language, both orally and in writing. Each administration shall decide for itself the language or languages required.

3908 *C. First-Class Radiotelegraph Operator's Certificate*

3909 § 11. The first-class certificate is issued to candidates who have given proof of the technical and professional knowledge and qualifications enumerated below:

- 3910 a) knowledge both of the general principles of electricity and of the theory of radio, knowledge of the adjustment and practical working of various types of radiotelegraph and radiotelephone apparatus used in the mobile service, including apparatus used for radio direction-finding and the taking of direction-finding bearings, as well as a general knowledge of the principles of operation of other apparatus generally used for radionavigation;
- 3911 b) theoretical and practical knowledge of the operation and maintenance of apparatus, such as motor-generators, storage batteries, etc., used in the operation and adjustment of the radiotelegraph, radiotelephone and radio direction-finding apparatus mentioned in No. 3910;

- 3912** c) practical knowledge necessary to repair, with the means available on board, damage which may occur to the radiotelegraph, radiotelephone and radio direction-finding apparatus during a voyage;
- 3913** d) ability to send correctly by hand and to receive correctly by ear, in the Morse code, code groups (mixed letters, figures and punctuation marks), at a speed of twenty groups a minute, and a plain language text at a speed of twenty-five words a minute. Each code group shall comprise five characters, each figure or punctuation mark counting as two characters. The average word of the text in plain language shall contain five characters. The duration of each test of sending and of receiving shall be, as a rule, five minutes;
- 3914** e) ability to send correctly and to receive correctly by radiotelephone;
- 3915** f) detailed knowledge of the Regulations applying to radiocommunications, knowledge of the documents relating to charges for radiocommunications and knowledge of the provisions of the Convention for the Safety of Life at Sea which relate to radio;
- 3916** g) a sufficient knowledge of world geography, especially the principal shipping and air routes and the most important telecommunication routes;
- 3917** h) sufficient knowledge of one of the working languages of the Union. Candidates should be able to express themselves satisfactorily in that language, both orally and in writing. Each administration shall decide for itself the language or languages required.

3918 *D. Second-Class Radiotelegraph Operator's Certificate*

3919 § 12. The second-class certificate is issued to candidates who have given proof of the technical and professional knowledge and qualifications enumerated below:

3920 a) elementary theoretical and practical knowledge of electricity and of radio, knowledge of the adjustment and practical working of the various types of radiotelegraph and radiotelephone apparatus used in the mobile service, including apparatus used for radio direction-finding and the taking of direction-finding bearings, as well as elementary knowledge of the principles of operation of other apparatus in general use for radionavigation;

3921 b) elementary theoretical and practical knowledge of the operation and maintenance of apparatus, such as motor-generators, storage batteries, etc., used in the operation and adjustment of the radiotelegraph, radiotelephone and radio direction-finding apparatus mentioned in No. **3920**;

3922 c) practical knowledge sufficient for effecting repairs in the case of minor damage which may occur to the radiotelegraph, radiotelephone and radio direction-finding apparatus during a voyage;

3923 d) ability to send correctly by hand and to receive correctly by ear, in the Morse code, code groups (mixed letters, figures and punctuation marks) at a speed of sixteen groups a minute, and a plain language text at a speed of twenty words a minute. Each code group shall comprise five characters, each figure or punctuation mark counting as two characters. The average word of the text in plain language shall contain five characters. The duration of each test of sending and of receiving shall, as a rule, be five minutes;

- 3924 e) ability to send correctly and to receive correctly by radiotelephone, except in the case provided for in No. 3890;
- 3925 f) knowledge of the Regulations applying to radio-communications, knowledge of the documents relating to charges for radiocommunications and knowledge of the provisions of the Convention for the Safety of Life at Sea which relate to radio;
- 3926 g) a sufficient knowledge of world geography, especially the principal shipping and air routes and the most important telecommunication routes;
- 3927 h) if necessary, an elementary knowledge of one of the working languages of the Union. Candidates should be able to express themselves satisfactorily in that language, both orally and in writing. Each administration shall decide for itself the language or languages required.

3928 *E. Radiotelegraph Operator's Special Certificate*

3929 § 13. (1) The radiotelegraph operator's special certificate is issued to candidates who have given proof of the knowledge and professional qualifications enumerated below:

- 3930 a) ability to send correctly by hand and receive correctly by ear, in the Morse code, code groups (mixed letters, figures and punctuation marks) at a speed of sixteen groups a minute, and a plain language text at a speed of twenty words a minute. Each code group shall comprise five characters, each figure or punctuation mark counting as two characters. The average word of the text in plain language shall contain five characters;
- 3931 b) knowledge of the practical operation and adjustment of radiotelegraph apparatus;

3932 c) knowledge of the Regulations applying to radio-telegraph communications and specifically of that part of those Regulations relating to safety of life at sea.

3933 (2) Each administration concerned shall fix the other conditions for obtaining this certificate. However, the conditions specified in Nos. **3941**, **3942**, **3943** and **3944** or **3945**, as the case may be, shall be satisfied.

3934 (3) In the maritime mobile service each administration concerned shall fix the other conditions for obtaining this certificate. However, except as provided for in No. **3890**, the conditions specified in Nos. **3936**, **3937**, **3938**, **3939** and **3940** shall be satisfied for such a certificate issued to ship station operators after 1 January 1976.

3935 *F. Radiotelephone Operators' Certificates*

3936 § 14. The radiotelephone operator's general certificate is issued to candidates who have given proof of the knowledge and professional qualifications enumerated below (see also Nos. **3884**, **3885**, **3888** and **3889**):

3937 a) a knowledge of the elementary principles of radiotelephony;

3938 b) detailed knowledge of the practical operation and adjustment of radiotelephone apparatus;

3939 c) ability to send correctly and to receive correctly by radiotelephone;

3940 d) detailed knowledge of the Regulations applying to radiotelephone communications and specifically of that part of those Regulations relating to the safety of life.

3941 § 15. (1) The restricted radiotelephone operator's certificate is issued to candidates who have given proof of the knowledge and professional qualifications enumerated below:

3942 a) practical knowledge of radiotelephone operation and procedure;

- 3943** b) ability to send correctly and to receive correctly by telephone;
- 3944** c) general knowledge of the Regulations applying to radiotelephone communications and specifically of that part of those Regulations relating to the safety of life.
- 3945** (2) For ship radiotelephone stations where the peak envelope power of the transmitter does not exceed 400 watts, each administration may itself fix these conditions for obtaining a restricted radiotelephone operator's certificate, provided that the operation of the transmitter requires only the use of simple external switching devices, excluding all manual adjustment of frequency determining elements, and that the stability of the frequencies is maintained by the transmitter itself within the limits of tolerance specified in Appendix 7. However, in fixing the conditions, administrations shall ensure that the operator has an adequate knowledge of radiotelephone operation and procedure particularly as far as distress, urgency and safety are concerned. This in no way contravenes the provisions of No. **3949**.
- 3946** (3) Administrations in Region 1 do not issue certificates under No. **3945**.
- 3947** § 16. A radiotelephone operator's certificate shall show whether it is a general certificate or a restricted certificate and, in the latter case, if it has been issued in conformity with the provisions of No. **3945**.
- 3948** § 17. In the maritime mobile service a radiotelephone operator's restricted certificate shall show whether it is also limited as provided for in No. **3887**.
- 3949** § 18. In order to meet special needs, special agreements between administrations may fix the conditions to be fulfilled in order to obtain a radiotelephone operator's certificate, intended to be used in radiotelephone stations complying with certain technical conditions and certain operating conditions. These agreements, if made, shall be on the condition that harmful interference to international services shall not result therefrom. These conditions and agreements shall be mentioned in the certificates issued to such operators.

Mob-87

**Section IIIA. Conditions for the Issue of
Certificates for Personnel of Ship Stations
and Ship Earth Stations Using the Frequencies
and Techniques Prescribed in Chapter N IX
and for Public Correspondence**

3949A

Mob-87

*A. First-Class Radio Electronic
Certificate*

3949AA § 18A. The First-Class Radio Electronic Certificate is issued to
Mob-87 candidates who have given proof of the technical and professional
knowledge and qualifications enumerated below:

3949AB

Mob-87

- a) knowledge of the principles of electricity and the theory of radio and electronics sufficient to meet the requirements specified in Nos. **3949AC**, **3949AD** and **3949AE**;

3949AC

Mob-87

- b) theoretical knowledge of GMDSS radiocommunication equipment, including narrow-band direct-printing telegraph and radiotelephone transmitters and receivers, digital selective calling equipment, ship earth stations, emergency position-indicating radiobeacons, marine antenna systems, radio equipment for survival craft together with all auxiliary items, including power supplies, as well as general knowledge of the principles of other equipment generally used for radionavigation, with particular reference to maintaining the equipment in service;

3949AD

Mob-87

- c) practical knowledge of the operation and knowledge of the preventive maintenance of the equipment indicated in No. **3949AC**;

3949AE

Mob-87

- d) practical knowledge necessary for the location and repair (using appropriate testing equipment and tools) of faults in the equipment mentioned in No. **3949AC** which may occur during a voyage;

- 3949AF**
Mob-87 *e)* detailed practical knowledge of the operation of all GMDSS sub-systems and equipment;
- 3949AG**
Mob-87 *f)* ability to send and receive correctly by radiotelephone and direct-printing telegraphy;
- 3949AH**
Mob-87 *g)* detailed knowledge of the regulations applying to radiocommunications, knowledge of the documents relating to charges for radiocommunications and knowledge of those provisions of the International Convention for the Safety of Life at Sea which relate to radio;
- 3949AI**
Mob-87 *h)* sufficient knowledge of one of the working languages of the Union. Candidates should be able to express themselves satisfactorily in that language, both orally and in writing.

3949B *B. Second-Class Radio Electronic Certificate*
Mob-87

3949BA § 18B. The Second-Class Radio Electronic Certificate is issued
Mob-87 to candidates who have given proof of the technical and professional knowledge and qualifications enumerated below:

- 3949BB**
Mob-87 *a)* knowledge of the principles of electricity and the theory of radio and electronics sufficient to meet the requirements specified in Nos. **3949BC**, **3949BD** and **3949BE**;
- 3949BC**
Mob-87 *b)* general theoretical knowledge of GMDSS radio-communication equipment, including narrow-band direct-printing telegraph and radiotelephone transmitters and receivers, digital selective calling equipment, ship earth stations, emergency position-indicating radiobeacons, marine antenna systems, radio equipment for survival craft together with all auxiliary items, including power supplies, as well as

general knowledge of other equipment generally used for radionavigation, with particular reference to maintaining the equipment in service;

3949BD
Mob-87

- c) practical knowledge of the operation and knowledge of the preventive maintenance of the equipment indicated in No. **3949BC**;

3949BE
Mob-87

- d) practical knowledge necessary for effecting repairs in the case of faults in the equipment indicated in No. **3949BC**, using the means available on board and, if necessary, replacing modular units;

3949BF
Mob-87

- e) detailed practical knowledge of the operation of all GMDSS sub-systems and equipment;

3949BG
Mob-87

- f) ability to send and receive correctly by radiotelephone and direct-printing telegraphy;

3949BH
Mob-87

- g) detailed knowledge of the regulations applying to radiocommunications, knowledge of the documents relating to charges for radiocommunications and knowledge of those provisions of the International Convention for the Safety of Life at Sea which relate to radio;

3949BI
Mob-87

- h) sufficient knowledge of one of the working languages of the Union. Candidates should be able to express themselves satisfactorily in that language, both orally and in writing.

3949C
Mob-87

C. General Operator's Certificate

3949CA § 18C. The General Operator's Certificate is issued to candidates who have given proof of the knowledge and qualifications enumerated below:
Mob-87

3949CB
Mob-87

- a) detailed practical knowledge of the operation of all GMDSS sub-systems and equipment;

- 3949CC**
Mob-87 b) ability to send and receive correctly by radiotelephone and direct-printing telegraphy;
- 3949CD**
Mob-87 c) detailed knowledge of the regulations applying to radiocommunications, knowledge of the documents relating to charges for radiocommunications and knowledge of those provisions of the International Convention for the Safety of Life at Sea which relate to radio;
- 3949CE**
Mob-87 d) sufficient knowledge of one of the working languages of the Union. Candidates should be able to express themselves satisfactorily in that language, both orally and in writing.

3949D *D. Restricted Operator's Certificate*
Mob-87

3949DA § 18D. The Restricted Operator's Certificate is issued to candidates who have given proof of the knowledge and qualifications enumerated below:
Mob-87

- 3949DB** a) practical knowledge of the operation of the GMDSS sub-systems and equipment which is required while the ship is sailing within the range of VHF coast stations;
Mob-87
- 3949DC** b) ability to send and receive correctly by radiotelephone;
Mob-87
- 3949DD** c) knowledge of the regulations applying to radiotelephony communications and specifically of that part of those regulations relating to the safety of life;
Mob-87
- 3949DE** d) an elementary knowledge of one of the working languages of the Union. Candidates should be able to express themselves satisfactorily in that language, both orally and in writing. Administrations may waive the above language requirements for holders of a restricted operator's certificate when the ship station is confined to a limited area specified by the administration concerned. In such cases the certificate shall be suitably endorsed.
Mob-87

Section IV. Qualifying Service

- 3950** § 19. (1) The holder of a radiocommunication operator's general certificate or a first- or second-class radiotelegraph operator's certificate is authorized to embark as chief operator of a ship station of the fourth category (see No. **4056**).
- 3951** (2) However, before becoming chief or sole operator of a ship station of the fourth category (see No. **4056**) which is required by international agreements to carry a radiotelegraph operator, the holder of a radiocommunication operator's general certificate or a first- or second-class radiotelegraph operator's certificate shall have had adequate experience as operator on board ship at sea.
- 3952** (3) Before becoming chief operator of a ship station of the second or third category (see Nos. **4054** and **4055**), the holder of a radiocommunication operator's general certificate or a first- or second-class radiotelegraph operator's certificate shall have had, as operator on board ship or in a coast station, at least six months' experience of which at least three months shall have been on board ship.
- 3953** (4) Before becoming chief operator of a ship station of the first category (see No. **4053**), the holder of a radiocommunication operator's general certificate or a first-class radiotelegraph operator's certificate shall have had, as operator on board ship or in a coast station, at least one year's experience of which at least six months shall have been on board ship.
- 3954**
to
3978 NOT allocated.

3983 *b)* ship stations of the second and third categories, except in the case provided for in No. **3986**: a chief operator holding a radiocommunication operator's general certificate or a first- or second-class radiotelegraph operator's certificate:

- 3984**

c) ship stations of the fourth category, except in the cases provided for in Nos. **3985** and **3986**: one operator holding a radiocommunication operator's general certificate or a first- or second-class radiotelegraph operator's certificate;
- 3985**

d) ship stations in which a radiotelegraph installation is provided but not prescribed by international agreements: one operator holding a radiocommunication operator's general certificate or a first- or second-class radiotelegraph operator's certificate, or a radiotelegraph operator's special certificate;
- 3986**

e) ship stations equipped with a radiotelephone installation only: one operator holding either a radiotelephone operator's certificate or a radiotelegraph operator's certificate.

Mob-87

**Section III. Class and Minimum Number of
Personnel for Ship Stations and Ship Earth Stations
Using the Frequencies and Techniques Prescribed in
Chapter N IX and for Public Correspondence**

- 3987**
Mob-87

§ 4. Administrations shall ensure that the personnel of ship stations and ship earth stations are adequately qualified to enable efficient operation of the station, and shall take steps to ensure the operational availability and maintenance of equipment for distress and safety communications in accordance with the relevant international agreements.
- 3988**
Mob-87

§ 5. An adequately qualified person shall be available to act as a dedicated communications operator in cases of distress.
- 3989**
WARC-92

§ 6. The personnel of ship stations and ship earth stations for which a radio installation is compulsory under international agreements and which use the frequencies and techniques prescribed in

Chapter N IX shall, with respect to the provisions of Article 55, include at least:

3990 a) for stations on board ships which sail beyond the range
WARC-92 of VHF coast stations, taking into account the provisions of the Convention for the Safety of Life at Sea: a holder of a first- or second-class radio electronic certificate or a general operator's certificate;

3991 SUP
WARC-92

3992 b) for stations on board ships which sail within the range of
WARC-92 VHF coast stations, taking into account the provisions of the Convention for the Safety of Life at Sea: a holder of a first- or second-class radio electronic certificate or a general operator's certificate or a restricted operator's certificate.

3993 § 7. The personnel of ship stations and ship earth stations for
WARC-92 which a radio installation is not compulsory under international agreements and which use the frequencies and techniques prescribed in Chapter N IX shall be adequately qualified and certificated in accordance with the administration's requirements.

3994
 to NOT allocated.
4011

ARTICLE 57

Inspection of Ship Stations and Ship Earth Stations

- 4012** § 1. (1) The governments or appropriate administrations of countries which a ship station or ship earth station visits may require the production of the licence for examination. The operator of the station, or the person responsible for the station, shall facilitate this examination. The licence shall be kept in such a way that it can be produced upon request. As far as possible, the licence, or a copy certified by the authority which has issued it, should be permanently exhibited in the station.
- 4013** (2) The inspectors shall have in their possession an identity card or badge, issued by the competent authority, which they shall show on request of the master or person responsible for the ship or other vessel carrying the ship station or the ship earth station.
- 4014** (3) When the licence cannot be produced or when manifest irregularities are observed, governments or administrations may inspect the radio installations in order to satisfy themselves that these conform to the conditions imposed by these Regulations.
- 4015** (4) In addition, inspectors have the right to require the production of the operators' certificates, but proof of professional knowledge may not be demanded.
- 4016** § 2. (1) When a government or an administration has found it necessary to adopt the course indicated in No. **4014**, or when the operators' certificates cannot be produced, the government or administration to which the ship station or ship earth station is subject shall be so informed without delay. In addition, the procedure specified in Article **21** is followed when necessary.

4017 (2) Before leaving, the inspector shall report the result of his inspection to the master, or the person responsible for the ship or other vessel carrying the ship station or ship earth station. If any breach of the conditions imposed by these Regulations is observed, the inspector shall make this report in writing.

4018 § 3. Members of the Union undertake not to impose upon foreign ship stations or upon foreign ship earth stations, which are temporarily within their territorial waters or which make a temporary stay in their territory, technical and operating conditions more severe than those contemplated in these Regulations. This undertaking in no way affects arrangements which are made under international agreements relating to maritime navigation, and which are therefore not covered by these Regulations.

4019
to
4043 NOT allocated.

ARTICLE 58

**Mob-87 Working Hours of Stations in the Maritime Mobile
Service and Maritime Mobile-Satellite Service****Section I. General**

4044 § 1. In order to permit the application of the following rules
Mob-87 on the subject of hours of watch, every station of the maritime
mobile service and the maritime mobile-satellite service shall have
an accurate clock correctly regulated to Coordinated Universal
Time (UTC).

4045 § 2. Coordinated Universal Time (UTC), reckoned
from 0000 to 2359 h beginning at midnight, shall be used for all
entries in the radiocommunication service log and in all similar
documents of ships compulsorily equipped with radiocommunica-
tion apparatus in compliance with an international agreement; this
same provision will apply, as far as possible, to other ships.

Mob-87 Section II. Coast Stations and Coast Earth Stations

4046 § 3. (1) The services of coast stations and coast earth stations
Mob-87 are, as far as possible, continuous (day and night). Certain coast
stations, however, may have a service of limited duration. Each
administration or recognized private operating agency duly author-
ized to that effect fixes the hours of service for coast stations under
its jurisdiction.

4047 (2) These hours of service shall be notified to the Secretary-
General who shall publish them in the List of Coast Stations.

- 4048** § 4. Coast stations whose service is not continuous shall not close before:
- 4049** a) finishing all operations resulting from a distress call or from an urgency or safety signal;
- 4050** b) exchanging all traffic originating in or destined for ship stations which are situated within their service area and have indicated their presence before the actual cessation of work;
- 4051** c) making a general call to all stations announcing the closing down of the service and advising the time of reopening, if other than their normal hours of service.

Section III. Ship Stations

- 4052** § 5. (1) For the international public correspondence service, ship stations are divided into four categories:
- 4053** a) stations of the first category: these stations maintain a continuous service;
- 4054** b) stations of the second category: these stations maintain a service for 16 hours a day;
- 4055** c) stations of the third category: these stations maintain a service for 8 hours a day;
- 4056** d) stations of the fourth category: these stations maintain a service the duration of which is either shorter than that of stations of the third category, or is not fixed by these Regulations.
- 4057** (2) Each administration shall itself determine the rules under which ship stations subject to it are to be placed in one of the above four categories.

4058 § 6. (1) Ship stations of the second category shall maintain the following hours of service:

0000 - 0400	}	ship's time or zone time,
0800 - 1200		
1600 - 1800		
2000 - 2200		

and, additionally, four hours of service at times to be decided by the administration, master or responsible person, to meet the essential communication needs of the ship, having regard to propagation conditions and traffic requirements.

4059 (2) Ship stations of the third category shall maintain the following hours of service:

0800 - 1200 ship's time or zone time,

two continuous hours of service between 1800 and 2200 h, ship's time or zone time, at times decided by the administration, master or responsible person and, additionally, two hours of service at times decided by the administration, master or responsible person, to meet the essential communication needs of the ship, having regard to propagation conditions and traffic requirements.

4060 (3) Each administration will determine whether ship's time observed by its ships is to be zone time as shown in Appendix 12 (see Nos. **4058** and **4059**).

4061 (4) In case of short voyages, these stations shall provide service during the hours fixed by the administrations to which they are subject.

4062 § 7. Ship stations of the fourth category are encouraged to provide service from 0830 to 0930 h, ship's time or zone time.

4063 § 8. (1) Ship stations whose service is not continuous shall not close before:

4064 a) finishing all operations resulting from a distress call or from an urgency or safety signal;

4065 *b)* exchanging, so far as practicable, all traffic originating in or destined for coast stations situated within their service area and for ship stations which, being within their service area, have indicated their presence before the actual cessation of work.

4066 (2) Any ship station not having fixed working hours shall inform the coast stations with which it is in communication of the time of closing and the time of reopening its service.

4067 § 9. (1) Any ship station arriving in port, and whose service is therefore about to close, shall:

4068 *a)* notify accordingly the nearest coast station and, if appropriate, the other coast stations with which it generally communicates;

4069 *b)* not close until after the disposal of traffic on hand, unless this conflicts with the regulations in force in the country of the port of call.

4070 (2) On departure from port the ship station shall notify the coast station or stations concerned that its service is reopening as soon as such reopening is permitted by the regulations in force in the country of the port of departure. However, a ship station not having hours of service fixed by these Regulations may defer such notification until the station first reopens its service after departure from port.

4071
to
4095 NOT allocated.

ARTICLE 59

**Conditions to Be Observed in the Maritime Mobile Service
and in the Maritime Mobile-Satellite Service****Section I. Maritime Mobile Service****4096** *A. General*

4097 § 1. Ship stations shall be established in such a way as to conform to the provisions of Chapters **III** and **XI** as regards frequencies and classes of emission.

4098 § 2. The frequencies of emission of ship stations shall be checked as often as possible by the inspection service to which these stations are subject.

4099 § 3. The energy radiated by receiving apparatus shall be reduced to the lowest possible value and shall not cause harmful interference to other stations.

4100 § 4. Administrations shall take all practicable steps necessary to ensure that the operation of any electrical or electronic apparatus installed in ship stations does not cause harmful interference to the essential radio services of stations which are operating in accordance with the provisions of these Regulations.

4101 § 5. (1) Changes of frequency in the sending and receiving apparatus of any ship station shall be capable of being made as rapidly as possible.

4102 (2) Installations of any ship station shall be capable, once communication is established, of changing from transmission to reception and vice versa in as short a time as possible.

4103 § 6. The operation of a broadcasting service (see No. **36**) by a ship station at sea is prohibited. (See also No. **2665**.)

4104 § 7. Ship stations and ship earth stations other than survival
Mob-87 craft stations shall be provided with the documents enumerated in the appropriate section of Appendix 11.

4105 § 8. When any ship station transmitter itself cannot be controlled in such a way that its frequency satisfies the tolerance specified in Appendix 7, the ship station shall be provided with a device, having a precision equal to at least one-half of this tolerance, for measuring the frequency of the emission.

4106 *B. Ship Stations Using Morse Radiotelegraphy*
Mob-87

4107 § 9. Ship stations equipped with radiotelegraph apparatus intended to be used for normal traffic by Morse telegraphy shall be provided with devices permitting changeover from transmission to reception and vice versa without manual switching. In addition these stations should be able to listen on the reception frequency during the course of periods of transmission.

4108 B1. Bands Between 415 kHz and 535 kHz
Mob-83

4109 § 10. Transmitters used in ship stations working in the authorized bands between 415 kHz and 535 kHz shall be provided with devices readily permitting a material reduction of power.
Mob-83

4110 § 11. All ship stations equipped with Morse radiotelegraph apparatus to work in the authorized bands between 415 kHz and 535 kHz shall be able to:
Mob-87

4111 a) send either class A2A and A2B* or H2A and H2B* emissions and receive class A2A, A2B*, H2A and H2B* emissions with a carrier frequency of 500 kHz;

4112 b) send, in addition, class A1A emissions on at least two working frequencies;
Mob-83

* This is to cater for the automatic reception of the radiotelegraph alarm signal.

4113 c) receive, in addition, class A1A emissions on all the
Mob-83 other frequencies necessary for their service.

4114 § 12. The provisions of Nos. **4112** and **4113** do not apply to
Mob-83 apparatus provided solely for distress, urgency and safety purposes.

4115 B2. Bands Between 1 605 kHz and 2 850 kHz

4116 § 13. In Region 2, any Morse radiotelegraph station installed
Mob-87 on board a ship which uses frequencies in the band 2 089.5 - 2 092.5 kHz for call and reply shall be provided with at least one other frequency in the authorized bands between 1 605 kHz and 2 850 kHz.

4117 B3. Bands Between 4 000 kHz and 27 500 kHz

4118 § 14. In ship stations, all apparatus using class A1A emissions
Mob-87 for Morse telegraphy on frequencies in the authorized bands between 4 000 kHz and 27 500 kHz shall satisfy the following conditions:

4119 a) in each of the bands necessary to carry on the
 station's service, it shall have at least two working frequencies in addition to one in the calling band (see No. **4306**);

4120 b) changes of frequency in transmitting apparatus
 shall be effected as quickly as practicable, but within fifteen seconds in any event;

4121 c) in the matter of frequency changing, receiving
 apparatus shall be capable of a performance equal to that of the transmitting apparatus.

4122 C. *Ship Stations Using Digital*
Mob-87 *Selective Calling*

4123 SUP
Mob-87

4123A § 15. The characteristics of the digital selective calling equip-
Mob-87 ment shall be in accordance with the Recommendations of the CCIR.

4123B
Mob-87

C1. Bands Between 415 kHz
and 535 kHz

4123C
Mob-87

§ 15A. All ship stations equipped with apparatus for digital selective calling to work in the authorized bands between 415 kHz and 535 kHz shall be able to send and receive class F1B or J2B emissions on at least two digital selective calling channels necessary for their service.

4123D
Mob-87

C2. Bands Between 1 605 kHz
and 4 000 kHz

4123E
Mob-87

§ 15B. All ship stations equipped with digital selective calling apparatus to work in the authorized bands between 1 605 kHz and 4 000 kHz shall be able to:

4123F
Mob-87

a) send and receive class F1B or J2B emissions on the frequency 2 187.5 kHz;

4123G
Mob-87

b) in addition, send and receive class F1B or J2B emissions on other digital selective calling frequencies in this band necessary to carry out their service.

4123H
Mob-87

C3. Bands Between 4 000 kHz
and 27 500 kHz

4123I
Mob-87

§ 15C. All ship stations equipped with digital selective calling apparatus to work in the authorized bands between 4 000 kHz and 27 500 kHz shall be able to:

4123J
Mob-87

a) send and receive class F1B or J2B emissions on the frequencies designated for digital selective distress calling in each of the maritime HF bands in which they are operating (see also No. N 3112);

4123K
Mob-87

b) send and receive class F1B or J2B emissions on an international calling channel (see Nos. 4683 and 4684) in each of the HF maritime mobile bands necessary for their service;

4123L c) send and receive class F1B or J2B emissions on
Mob-87 other digital selective calling channels in each of the
 HF maritime mobile bands necessary for their
 service.

4123M C4. Bands Between 156 MHz
Mob-87 and 174 MHz

4123N § 15D. All ship stations equipped with apparatus for digital
Mob-87 selective calling to work in the authorized bands between 156 MHz
 and 174 MHz shall be able to send and receive class G2B emis-
 sions on the frequency 156.525 MHz.

4123O CA. *Ship Stations Using Narrow-Band*
Mob-87 *Direct-Printing Telegraphy*

4123P § 15E. (1) All ship stations using narrow-band direct-printing
Mob-87 telegraphy equipment shall be able to send and receive on the
 frequency designated for distress traffic by narrow-band direct-
 printing telegraphy in the frequency bands in which they are
 operating.

4123Q (2) The characteristics of the narrow-band direct-printing
Mob-87 equipment shall be in accordance with Appendix 38.

4123R CA1. Bands Between 415 kHz
Mob-87 and 535 kHz

4123S § 15F. All ship stations equipped with narrow-band direct-
Mob-87 printing telegraphy apparatus to work in the authorized bands
 between 415 kHz and 535 kHz shall be able to:

4123T a) send and receive class F1B or J2B emissions on the
Mob-87 working frequencies necessary to carry out their
 service;

4123U b) receive class F1B emissions on 518 kHz, if com-
Mob-87 plying with the provisions of Chapter N IX.

4123V CA2. Bands Between 1 605 kHz
Mob-87 and 4 000 kHz

4123W § 15G. All ship stations equipped with narrow-band direct-
Mob-87 printing telegraphy apparatus to work in the authorized bands between 1 605 kHz and 4 000 kHz shall be able to send and receive class F1B or J2B emissions on working frequencies necessary to carry out their service.

4123X CA3. Bands Between 4 000 kHz
Mob-87 and 27 500 kHz

4123Y § 15H. All ship stations equipped with narrow-band direct-
Mob-87 printing telegraphy apparatus to work in the authorized bands between 4 000 kHz and 27 500 kHz shall be able to send and receive class F1B or J2B emissions on working frequencies in each of the HF maritime mobile bands necessary to carry out their service.

4124 D. *Ship Stations Using Radiotelephony*

4125 D1. Bands Between 1 605 kHz and 4 000 kHz

4126 § 16. All ship stations equipped with radiotelephony appar-
 atus to work in the authorized bands between 1 605 kHz and 2 850 kHz shall be able to:

4127 a) send class J3E or H3E emissions on a carrier
Mob-87 frequency of 2 182 kHz and receive class J3E or H3E emissions on a carrier frequency of 2 182 kHz, except for such apparatus as is referred to in No. 4130 (see also Nos. 2945 and 2973);

4128 b) send, in addition, J3E emissions on at least two
Mob-83 working frequencies¹;

4128.1 SUP
Mob-83

4128.2 ¹ In certain areas, administrations may reduce this requirement to one working frequency.

4129 c) receive, in addition, J3E emissions on all other
Mob-83 frequencies necessary for their service.

4130 § 17. The provisions of Nos. **4128** and **4129** do not apply to
 apparatus provided solely for distress, urgency and safety pur-
 poses.

4131 D2. Bands Between 4 000 kHz
Mob-87 and 27 500 kHz

4132 § 18. All ship stations equipped with radiotelephony to work
Mob-87 in the authorized bands between 4 000 kHz and 27 500 kHz and
 which do not comply with the provisions of Chapter N IX should
 be able to send and receive on the carrier frequencies 4 125 kHz
 and 6 215 kHz (see Nos. **2982** and **2986**). However, all ship stations
 which comply with the provisions of Chapter N IX shall be able to
 send and receive on the carrier frequencies designated in
 Article N 38 for distress and safety traffic by radiotelephony for
 the frequency bands in which they are operating.

4133 D3. Bands Between 156 MHz and 174 MHz

4134 § 19. All ship stations equipped with radiotelephony to work
Mob-87 in the authorized bands between 156 MHz and 174 MHz (see
 No. **613** and Appendix 18) shall be able to send and receive
 class G3E emissions on:

4135 a) the distress, safety and calling frequency
 156.8 MHz;

4136 b) the primary intership frequency 156.3 MHz;

4136A c) the intership navigation safety frequency
Mob-87 156.65 MHz;

4137 d) all the frequencies necessary for their service.
Mob-87

Mob-87

Section II. Maritime Mobile-Satellite Service

4138 § 20. Ship earth stations shall be so established as to conform to the provisions of Chapter **III** as regards frequencies.

4139 SUP

Mob-87

4140 § 22. The energy radiated by receiving apparatus shall be reduced to the lowest practicable value and shall not cause harmful interference to other stations.

4141 § 23. Administrations shall take all practicable steps necessary to ensure that the operation of any electrical or electronic apparatus installed in ship earth stations does not cause harmful interference to the essential radio services of stations which are operating in accordance with the provisions of these Regulations.

Mob-87

**Section III. Stations on Board Aircraft Communicating
with Stations of the Maritime Mobile Service
and the Maritime Mobile-Satellite Service**

4142

A. General Provisions

4143 § 24. (1) Stations on board aircraft may communicate with stations of the maritime mobile or maritime mobile-satellite services. They shall conform to those provisions of these Regulations which relate to these services.

4144 (2) For this purpose stations on board aircraft should use the frequencies allocated to the maritime mobile or maritime mobile-satellite services.

4145 (3) Stations on board aircraft, when handling public correspondence with stations of the maritime mobile service or of the maritime mobile-satellite service, shall comply with all the provisions applicable to the handling of public correspondence in the maritime mobile or maritime mobile-satellite services (see particularly Articles **61**, **62**, **63**, **65** and **66**).

4146 § 25. In the case of communication between stations on board
Mob-87 aircraft and stations of the maritime mobile service, radiotelephone calling may be renewed as specified in Nos. **4933** and **4934** and radiotelegraph calling may be renewed after an interval of five minutes, notwithstanding No. **4735**.

4147 *B. Provisions Relating to the Use of Frequencies
 Between 156 MHz and 174 MHz*

4148 § 26. (1) Having regard to interference which may be caused by aircraft stations at high altitudes, frequencies in the maritime mobile bands above 30 MHz shall not be used by aircraft stations, with the exception of those frequencies between 156 MHz and 174 MHz specified in Appendix **18** which may be used provided that the following conditions are observed:

- 4149** *a)* the altitude of aircraft stations shall not exceed 300 metres (1 000 feet), except for reconnaissance aircraft participating in ice-breaking operations, where an altitude of 450 metres (1 500 feet) is allowed;
- 4150** *b)* the mean power of aircraft station transmitters shall not exceed 5 W; however, a power of 1 W or less shall be used to the maximum extent possible;
- 4151** *c)* aircraft stations shall use the channels designated for this purpose in Appendix **18**;
- 4152** *d)* except as provided in No. **4150**, aircraft station transmitters shall comply with the technical characteristics given in Appendix **19**;
- 4153** *e)* the communications of an aircraft station shall be brief and limited to operations in which stations of the maritime mobile service are primarily involved and where direct communication between the aircraft and the ship or coast station is required.

4154 (2) The frequency 156.3 MHz may be used by stations on
Mob-87 board aircraft for safety purposes. It may also be used for
communication between ship stations and stations on board air-
craft engaged in coordinated search and rescue operations (see
Nos. **2993** and **N 3035**).

4155 (3) The frequency 156.8 MHz may be used by stations on
Mob-87 board aircraft for safety purposes only (see Nos. **2995A** and
N 3042).

4156
to NOT allocated.
4179

ARTICLE 60

**Special Rules Relating to the Use
of Frequencies in the Maritime Mobile Service****Section I. General Provisions**

4180 *A. Single-Sideband Radiotelegraph Transmissions*
Mob-87

4181 SUP
Mob-87

4181A § 1A. Where these provisions specify A1A emission, class A1B
Mob-87 or J2A emissions shall be considered equivalent.

4181B § 1B. Where these provisions specify class F1B emission, class
Mob-87 J2B emission shall be considered equivalent.

4182 *B. Bands Between 415 kHz and 535 kHz*
Mob-83

4183 § 2. Ship stations authorized to work in the bands between
Mob-87 415 kHz and 535 kHz shall transmit on the frequencies indicated
in this Article (see No. 4237).

4184 SUP
Mob-83

4184A § 3A. In the maritime mobile service, no assignments shall be
Mob-87 made on the frequency 518 kHz other than for transmission by
coast stations of meteorological and navigational warnings and
urgent information to ships by means of automatic narrow-band
direct-printing telegraphy (International NAVTEX System) (see
Article 14A).

4184B § 3B. In the maritime mobile service, after full implementation of the GMDSS, the frequency 490 kHz will be used exclusively for the transmission by coast stations of meteorological and navigational warnings and urgent information to ships by means of narrow-band direct-printing telegraphy (see Resolution **210 (Mob-87)**).

4185 and 4186 SUP
Mob-83

4187 C. *Bands Between 1 605 kHz and 4 000 kHz*

4188 § 6. (1) In Region 1, frequencies assigned to stations operating in the bands between 1 850 kHz and 3 800 kHz (see Article **8**) should, whenever possible, be in accordance with the following subdivision:

- 1 850 - 1 950 kHz: Coast stations, single-sideband radiotelephony.
- 1 950 - 2 045 kHz: Ship stations, single-sideband radiotelephony.
- 2 194 - 2 262.5 kHz: Ship stations, single-sideband radiotelephony.
- 2 262.5 - 2 498 kHz: Intership, single-sideband radiotelephony.
- 2 502 - 2 578 kHz: Ship stations, narrow-band direct-printing telegraphy.
- 2 578 - 2 850 kHz: Coast stations, narrow-band direct-printing telegraphy and single-sideband radiotelephony.

- 3 155 - 3 200 kHz: Ship stations, narrow-band direct-printing telegraphy.
- 3 200 - 3 340 kHz: Ship stations, single-sideband radiotelephony.
- 3 340 - 3 400 kHz: Intership, single-sideband radiotelephony.
- 3 500 - 3 600 kHz: Intership, single-sideband radiotelephony.
- 3 600 - 3 800 kHz: Coast stations, single-sideband radiotelephony.

4188A (1A) In Region 1, frequencies assigned to stations operating
Mob-83 in the bands listed below shall be in accordance with the following subdivision:

- 1 606.5 - 1 625 kHz: Coast stations, narrow-band direct-printing telegraphy, digital selective calling.
- 1 635 - 1 800 kHz: Coast stations, single-sideband radiotelephony.
- 2 045 - 2 141.5 kHz: Ship stations, single-sideband radiotelephony.
- 2 141.5 - 2 160 kHz: Ship stations, narrow-band direct-printing telegraphy, digital selective calling.

4189 SUP
Mob-87

4190 to 4192 SUP
Mob-83

4193 § 7. In Regions 2 and 3, the carrier frequencies 2 635 kHz
Mob-83 (assigned frequency 2 636.4 kHz) and 2 638 kHz (assigned frequency 2 639.4 kHz) are used as single-sideband intership radio-

telephony working frequencies in addition to the frequencies prescribed for common use in certain services. The carrier frequencies 2 635 kHz and 2 638 kHz should be used with class J3E emissions only. In Region 3 these frequencies are protected by a guardband between 2 634 kHz and 2 642 kHz.

4194 SUP
Mob-83

4195 *D. Bands Between 4 000 kHz and 27 500 kHz*

4196 § 9. (1) The bands exclusively allocated to the maritime mobile service between 4 000 kHz and 27 500 kHz (see Article 8) are subdivided into the following categories:

4197 a) *Ship stations, telephony, duplex operation (two-*
Mob-87 *frequency channels)*¹

4 065 - 4 146 kHz
6 200 - 6 224 kHz
8 195 - 8 294 kHz
12 230 - 12 353 kHz
16 360 - 16 528 kHz
18 780 - 18 825 kHz
22 000 - 22 159 kHz
25 070 - 25 100 kHz

4198 b) *Coast stations, telephony, duplex operation (two-*
Mob-87 *frequency channels)*

4 351 - 4 438 kHz
6 501 - 6 525 kHz
8 707 - 8 815 kHz
13 077 - 13 200 kHz
17 242 - 17 410 kHz
19 755 - 19 800 kHz
22 696 - 22 855 kHz
26 145 - 26 175 kHz

4197.1 ¹ For the use of some of the frequencies in these sub-bands by
Mob-87 ship and coast stations for distress and safety purposes, see Article 38 and Article N 38.

4199
Mob-87

- c) *Ship stations and coast stations, telephony, simplex operation (single-frequency channels) and intership cross-band operation (two frequencies)*

4 146 - 4 152 kHz
6 224 - 6 233 kHz
8 294 - 8 300 kHz
12 353 - 12 368 kHz
16 528 - 16 549 kHz
18 825 - 18 846 kHz
22 159 - 22 180 kHz
25 100 - 25 121 kHz

4200
Mob-87

- d) *Ship stations, wide-band telegraphy, facsimile and special transmission systems*

4 152 - 4 172 kHz
6 233 - 6 261 kHz
8 300 - 8 340 kHz
12 368 - 12 420 kHz
16 549 - 16 617 kHz
18 846 - 18 870 kHz
22 180 - 22 240 kHz
25 121 - 25 161.25 kHz

4201
Mob-87

- e) *Ship stations, oceanographic data transmission (see note c) in Appendix 31)*

4 063 - 4 065 kHz
6 261 - 6 262.75 kHz
8 340 - 8 341.75 kHz
12 420 - 12 421.75 kHz
16 617 - 16 618.75 kHz
22 240 - 22 241.75 kHz

4202
Mob-87

- f) *Ship stations*, narrow-band direct-printing telegraphy and data transmission systems at speeds not exceeding 100 bauds for FSK and 200 bauds for PSK (frequencies paired with those in No. 4207)

4 172 - 4 181.75 kHz
6 262.75 - 6 275.75 kHz
6 280.75 - 6 284.75 kHz
8 376.25 - 8 396.25 kHz
12 476.75 - 12 549.75 kHz
12 554.75 - 12 559.75 kHz
16 683.25 - 16 733.75 kHz
16 738.75 - 16 784.75 kHz
18 870 - 18 892.75 kHz
22 284.25 - 22 351.75 kHz
25 172.75 - 25 192.75 kHz

4203
Mob-87

- g) *Ship stations*, narrow-band direct-printing telegraphy and data transmission systems at speeds not exceeding 100 bauds for FSK and 200 bauds for PSK (non-paired frequencies), and A1A Morse telegraphy (working)¹

4 202.25 - 4 207.25 kHz
6 300.25 - 6 311.75 kHz
8 396.25 - 8 414.25 kHz
12 559.75 - 12 576.75 kHz
16 784.75 - 16 804.25 kHz
18 892.75 - 18 898.25 kHz
22 351.75 - 22 374.25 kHz
25 192.75 - 25 208.25 kHz

4203.1
Mob-87

¹ For the use of some of the frequencies in these sub-bands by ship and coast stations for distress and safety purposes, see Article 38 and Article N 38.

4204
Mob-87

h) Ship stations, A1A Morse telegraphy, calling

4 181.75 - 4 186.75 kHz
6 275.75 - 6 280.75 kHz
8 365.75 - 8 370.75 kHz
12 549.75 - 12 554.75 kHz
16 733.75 - 16 738.75 kHz
22 279.25 - 22 284.25 kHz
25 171.25 - 25 172.75 kHz

4205
Mob-87

i) Ship stations, digital selective calling ¹

4 207.25 - 4 209.25 kHz
6 311.75 - 6 313.75 kHz
8 414.25 - 8 416.25 kHz
12 576.75 - 12 578.75 kHz
16 804.25 - 16 806.25 kHz
18 898.25 - 18 899.75 kHz
22 374.25 - 22 375.75 kHz
25 208.25 - 25 210 kHz

4206
Mob-87

j) Ship stations, A1A Morse telegraphy, working

4 186.75 - 4 202.25 kHz
6 284.75 - 6 300.25 kHz
8 341.75 - 8 365.75 kHz
8 370.75 - 8 376.25 kHz
12 421.75 - 12 476.75 kHz
16 618.75 - 16 683.25 kHz
22 241.75 - 22 279.25 kHz
25 161.25 - 25 171.25 kHz

4205.1
Mob-87

¹ For the use of some of the frequencies in these sub-bands by ship and coast stations for distress and safety purposes, see Article 38 and Article N 38.

4207
Mob-87

- k) *Coast stations*, narrow-band direct-printing telegraphy and data transmission systems at speeds not exceeding 100 bauds for FSK and 200 bauds for PSK (frequencies paired with those in No. **4202**)

4 209.25 - 4 219.25 kHz
6 313.75 - 6 330.75 kHz
8 416.25 - 8 436.25 kHz
12 578.75 - 12 656.75 kHz
16 806.25 - 16 902.75 kHz
19 680.25 - 19 703.25 kHz
22 375.75 - 22 443.75 kHz
26 100.25 - 26 120.75 kHz

4208
Mob-87

- l) *Coast stations*, digital selective calling

4 219.25 - 4 221 kHz
6 330.75 - 6 332.5 kHz
8 436.25 - 8 438 kHz
12 656.75 - 12 658.5 kHz
16 902.75 - 16 904.5 kHz
19 703.25 - 19 705 kHz
22 443.75 - 22 445.5 kHz
26 120.75 - 26 122.5 kHz

4209
Mob-87

- m) *Coast stations*, wide-band and A1A Morse telegraphy, facsimile, special and data transmission systems and direct-printing telegraphy systems

4 221 - 4 351 kHz
6 332.5 - 6 501 kHz
8 438 - 8 707 kHz
12 658.5 - 13 077 kHz
16 904.5 - 17 242 kHz
19 705 - 19 755 kHz
22 445.5 - 22 696 kHz
26 122.5 - 26 145 kHz

4210 (2) Frequencies in the bands 25 010 - 25 070 kHz, 25 210 -
Mob-87 25 550 kHz and 26 175 - 27 500 kHz may be assigned to coast stations.

4211 § 10. (1) Appendix 16 shows the radiotelephone channels in the frequency bands listed in Nos. 4197, 4198 and 4199.

4212 (2) The Frequency Allotment Plan for coast radiotelephone stations in the high frequency bands is contained in Appendix 25.

4212A (3) The bands 4 000 - 4 063 kHz and 8 100 - 8 195 kHz, allocated on a shared basis to the maritime mobile service (see **Mob-87** Article 8) should be used in accordance with Sections C-1 and C-2 of Appendix 16 when used for radiotelephony.

4213 *E. Bands Between 156 MHz and 174 MHz*

4214 § 11. The ship movement service should be operated only on frequencies allocated to the maritime mobile service in the band 156 - 174 MHz.

Mob-83 **Section II. Use of Frequencies for Morse Radiotelegraphy**

4215 *A. General*

4215A § 11A. Stations employing single-sideband Morse radiotelegraph transmissions shall use upper-sideband emissions. The frequencies specified in these Regulations for class H2A and H2B * **Mob-87** emissions, such as 500 kHz and 8 364 kHz, shall be used as carrier frequencies.

4216 § 12. Whenever the class of emission A2A, A2B**, H2A or H2B* is mentioned in the present Regulations for use in the maritime mobile service, the type of transmission shall, except for selective calling purposes, be telegraphy by on-off keying of the modulated emission, to the exclusion of on-off keying of the modulating audio frequencies only.

* This is to cater for the automatic reception of the radiotelegraph alarm signal and for selective calling.

** This is to cater for the automatic reception of the radiotelegraph alarm signal.

4217
Mob-83

B. Bands Between 415 kHz and 535 kHz

B1. Call and Reply

4218 § 13. (1) The frequency 500 kHz is the international distress
Mob-87 frequency for Morse radiotelegraphy (see No. **2970** for details of its use for distress, urgency and safety purposes).

4219 (2) In addition, 500 kHz may be used only:

4220 *a)* for call and reply using Morse telegraphy (see
Mob-83 Nos. **4225** and **4229**);

4221 *b)* by coast stations to announce by means of Morse
Mob-83 telegraphy the transmission of their traffic lists under the conditions provided for in Nos. **4727**, **4728** and **4729**.

4222 (3) In order to facilitate the reception of distress calls, other transmissions on the frequency 500 kHz shall be reduced to a minimum, and in any case shall not exceed one minute.

4223 (4) Before transmitting on 500 kHz, stations must listen on this frequency for a reasonable period to make sure that no distress traffic is being sent (see No. **4713**).

4224 (5) The provisions of No. **4223** do not apply to stations in distress.

4225 § 14. (1) The general calling frequency which, except as provided
Mob-83 under No. **4849**, shall be used by any ship station or coast station engaged in radiotelegraphy in the authorized bands between 415 kHz and 535 kHz, and by aircraft stations desiring to enter into communication with a station of the maritime mobile service using frequencies in these bands, is the frequency 500 kHz.

- 4226** (2) However, in order to reduce interference in regions of
Mob-83 heavy traffic, administrations may consider the requirements of No. **4225** as satisfied when the calling frequencies assigned to coast stations open to public correspondence are not separated by more than 2 kHz from the general calling frequency 500 kHz.
- 4227** § 15. (1) A ship station calling a coast station shall, wherever possible and particularly in regions of heavy traffic, indicate to the coast station that it is ready to receive on the working frequency of that station.
- 4228** (2) The ship station should make sure beforehand that this frequency is not already being used by the coast station.
- 4229** § 16. (1) The frequency for replying to a call sent on the general calling frequency (see No. **4225**) shall be as follows:
- either 500 kHz,
 - or the frequency specified by the calling station (see Nos. **4227** and **4769**).
- 4230** (2) In regions of heavy traffic, coast stations may answer calls made by ship stations of their own nationality in accordance with special arrangements made by the administration concerned (see No. **4769**).
- 4231** § 17. Selective calling under the provisions of Section II of
Mob-83 Article **62** may be carried out on the frequency 500 kHz in the shore-to-ship, ship-to-shore and ship-to-ship directions.

B2. Traffic

- 4232** § 18. (1) Coast stations working in the authorized bands between
Mob-83 415 kHz and 535 kHz shall be able to use at least one frequency in addition to 500 kHz. One of these additional frequencies, which is printed in heavy type in the List of Coast Stations, is the normal working frequency of the station.
- 4233** (2) In addition to their normal working frequency, coast
Mob-83 stations may use, in the authorized bands, additional frequencies which are shown in ordinary type in the List of Coast Stations.

4234 (3) The working frequencies of coast stations shall be chosen so as to avoid interference with neighbouring stations.

4235 (4) Coast stations and ship stations shall use class A1A
Mob-83 emissions on their working frequencies.

4236 § 19. As an exception to the provisions of Nos. **2970**, **4219**, **4220** and **4221** and on condition that signals of distress, urgency and safety, and calls and replies are not interfered with, 500 kHz may be used outside regions of heavy traffic for direction-finding but with discretion.

4237 § 20. (1) Ship stations operating in the authorized bands between
Mob-87 415 kHz and 535 kHz shall use working frequencies chosen from the following: 425 kHz ¹, 454 kHz, 468 kHz, 480 kHz and 512 kHz, except as permitted by No. **961**. However, when a regional administrative radio conference has established a frequency plan, the frequencies specified in that plan may be used in the Region concerned.

4238 (2) Coast stations are prohibited from transmitting on the working frequencies designated for the use of ship stations on a worldwide basis.

4239 (3) The frequency 512 kHz may be used by ship stations as
Mob-83 a supplementary calling frequency using Morse telegraphy when 500 kHz is being used for distress.

4240 (4) During these periods coast stations may:

4241 a) use 512 kHz as a supplementary frequency for call and reply; *or*

4242 b) make use of other arrangements for call and reply which shall have been specified in the List of Coast Stations.

4237.1 ¹ In Region 1, the frequency 458 kHz will replace 425 kHz on
Mob-87 1 April 1992.

- 4243** (5) When 500 kHz is in use for distress, ship stations shall not use 512 kHz as a working frequency in those areas where it is in use as a supplementary calling frequency.

4244 *C. Bands Between 1 605 kHz and 4 000 kHz*
Mob-87 *Additional Provisions Applicable*
in Region 3 Areas
North of the Equator Only

4245 SUP
Mob-87

- 4246** § 22. (1) The band 2 089.5 - 2 092.5 kHz is the calling and safety
Mob-87 band for Morse radiotelegraphy in those parts of the band between 1 605 kHz and 2 850 kHz in which Morse radiotelegraphy is authorized.

- 4247** (2) Frequencies in the band 2 089.5 - 2 092.5 kHz may be used for calls, replies and safety. These frequencies may also be used for messages preceded by the urgency or safety signals.

- 4248** (3) Each coast station using the calling band 2 089.5 - 2 092.5 kHz shall, as far as possible, maintain watch on this band during its working hours.

- 4249** (4) Coast stations which use frequencies in the band
Mob-87 2 089.5 - 2 092.5 kHz for calling shall be able to use at least one other frequency in those parts of the band between 1 605 kHz and 2 850 kHz in which Morse radiotelegraphy is authorized.

4250 (5) One of these frequencies is printed in heavy type in the List of Coast Stations to indicate that it is the normal working frequency of the station. Supplementary frequencies, if any, are shown in ordinary type.

4251 (6) Working frequencies of coast stations shall be chosen in such a manner as to avoid interference with other stations.

4252 *D. Bands Between 4 000 kHz and 27 500 kHz*

D1. General

4253 § 23. (1) Ship Morse radiotelegraph stations equipped to operate
Mob-87 in the bands specified in Nos. **4204** and **4206** shall employ only the classes of emission mentioned in No. **4181A** for Morse telegraphy at speeds not exceeding 40 bauds. Survival craft stations may use class A2A or H2A emissions in these bands (see Nos. **3002** and **3005**).

4254 SUP
Mob-87

4255 (2) Except as provided for in No. **4376.1**, coast Morse
Mob-87 radiotelegraph stations operating in the bands exclusively allocated to the maritime mobile service between 4 000 kHz and 27 500 kHz shall not use Type 2 emissions (see No. **4216**).

4256 (3) Coast Morse radiotelegraph stations employing single-
Mob-87 channel class A1A emissions and operating in the bands exclusively allocated to the maritime mobile service between 4 000 kHz and 27 500 kHz shall at no time use a mean power in excess of the following:

<i>Band</i>	<i>Maximum mean power</i>
4 MHz	5 kW
6 MHz	5 kW
8 MHz	10 kW
12 MHz	15 kW
16 MHz	15 kW
18/19 MHz	15 kW
22 MHz	15 kW
25/26 MHz	15 kW

4257 SUP
Mob-87

4258 § 24. Nos. **4200**, **4203**, **4204**, **4206** and **4209** and the corresponding columns of Appendix **31** show those parts of the band exclusively allocated to the maritime mobile service between 4 000 kHz and 27 500 kHz which are to be used by coast stations and ship stations for Morse radiotelegraphy.
Mob-87

D2. Call and Reply

4259 § 25. (1) In order to establish communication with a coast station, each ship station shall use an appropriate Morse radiotelegraphy calling frequency in one of the bands listed in No. **4204**.
Mob-87

4260 (2) Frequencies in the A1A Morse telegraphy calling bands are assigned to each ship station in accordance with the provisions of Nos. **4277** to **4285**.

4261 § 26. In order to reduce interference, ship stations shall, within the means at their disposal, endeavour to select for calling the band with the most favourable propagation characteristics for effecting reliable communication. In the absence of more precise data, a ship station shall, before making a call, listen for the signals of the station with which it desires to communicate. The strength and intelligibility of such signals are useful as a guide to propagation conditions and indicate which is the preferable band for calling.

4262 § 27. In order to reduce interference on the common calling channels, they shall be used only when a ship cannot use a calling frequency within the group indicated as a coast station receiving channel of the station with which it desires to communicate or when the coast station has indicated that it is keeping watch only on the common calling channels.

4263 § 28. (1) The calling frequency to be used for Morse radiotelegraphy by a coast station, in each of the bands for which it is equipped, is its normal working frequency as shown in heavy type in the List of Coast Stations.
Mob-87

4264 (2) So far as is practicable, a coast station shall transmit its calls at specified times in the form of traffic lists on the frequency or frequencies indicated in the List of Coast Stations (see Nos. **4722** and **4726**).

4265 SUP
Mob-87

4266 § 30. Unless the calling station specifies otherwise, the frequency for reply to a call is as follows:

4267 a) for a ship station, one of its assigned calling frequencies in the same band, with due regard to No. **4262**;

4268 b) for a coast station, its normal working frequency in the same band as that used by the calling station.

4269 § 31. Administrations shall indicate, in respect of each coast station, in which of the ship calling bands and on which coast station receiving channels that coast station keeps watch and, as far as possible, the approximate hours of watchkeeping in Coordinated Universal Time (UTC). This information shall be published in the List of Coast Stations.

4270 § 32. Exceptionally, a coast station may indicate that it is keeping watch on calling frequencies other than those specified as its own receiving frequencies.

4271 § 33. In order to reduce interference on Morse radiotelegraphy calling frequencies, a coast station shall take adequate steps to ensure, under normal conditions, the prompt receipt of Morse radiotelegraphy calls (see No. **4755**).
Mob-87

D3. Traffic

4272 § 34. (1) A ship station, after establishing communication on a Morse radiotelegraphy calling frequency (see No. **4259**), shall change to a Morse radiotelegraphy working frequency for the transmission of traffic. The use of frequencies in the Morse radiotelegraphy calling bands for any purpose other than Morse radiotelegraphy calling shall be prohibited.
Mob-87

4273 (2) Morse radiotelegraphy working frequencies shall be
Mob-87 assigned to ship stations in accordance with the provisions of
 Nos. **4291** and **4306**.

4274 § 35. (1) A coast station shall transmit its traffic on its normal
 working frequency or on other working frequencies assigned to it.

4275 (2) Countries which share a Morse radiotelegraphy channel
Mob-87 in one of the bands exclusively allocated to the maritime mobile
 service between 4 000 kHz and 27 500 kHz should give special
 consideration to the countries among them which have no other
 Morse radiotelegraphy channel in the same band and should
 endeavour to use their primary Morse radiotelegraphy channel to
 the greatest extent possible, in order to permit the latter countries
 to satisfy their minimum communication requirements.

4276 *E. Assignment of Frequencies to Ship Stations*

E1. Calling Frequencies of Ship Stations

4277 § 36. Each Morse radiotelegraphy calling band between
Mob-87 4 000 kHz and 27 500 kHz indicated in No. **4204** is divided into
 four groups of channels and two common channels. The 25 MHz
 band is divided into three channels of which one is a common
 channel (see Appendix **34**).

4278 § 37. (1) When providing international service as published in the
Mob-87 List of Coast Stations, coast stations shall keep watch on the Morse
 radiotelegraphy common calling channels in each band throughout
 their hours of service in the bands concerned, and on the approp-
 riate Morse radiotelegraphy group channel or channels during
 busy periods. The times during which watch will be kept on the
 Morse radiotelegraphy group channel or channels shall be
 published for each country in the List of Coast Stations.

4279 (2) If necessary, an indication of the Morse radiotelegraphy
Mob-87 channels on which watch is kept may be included in the coast
 station transmissions.

4280 § 38. In the bands between 4 000 kHz and 27 500 kHz, the
Mob-87 administration to which a ship station is subject shall assign to it at least two Morse radiotelegraphy calling frequencies in each band in which the station is equipped to transmit. One of the calling frequencies in each band shall be within one of the common coast station receiving channels contained in Appendix 34; another in each band shall be selected from within the other channels listed in Appendix 34, taking account of the receiving channel or channels of the coast station with which the ship station most frequently communicates. In the 25 MHz band, administrations shall assign to ship stations under their control a frequency within the common channel. Another calling frequency in this band shall be selected from within channel A or B of Appendix 34, taking account of the receiving channel of the coast station with which the ship station most frequently communicates.

4281 § 39. A ship station should, wherever possible, be assigned
Mob-87 additional Morse radiotelegraphy calling frequencies (see No. 4262).

4282 § 40. If it is not intended to maintain watch on all the Morse
Mob-87 radiotelegraphy receiving channels within a group, the administration concerned, in order to ensure an even distribution of calls, shall determine the channel or channels on which watch will be maintained, but only after coordination as far as possible with administrations sharing the same group (see Resolution 312 (Rev.Mob-87)).

4283 § 41. Administrations which assign frequencies to their ship
Mob-87 stations in two or more Morse radiotelegraphy calling channels within their group shall take the necessary steps to distribute such assignments uniformly throughout the channels taken into use.

4284 § 42. In order to ensure an even distribution of Morse
Mob-87 radiotelegraphy calls on the common calling channels, administrations should, as far as practicable, assign frequencies in each of the two channels to an equal number of their ships.

4285 § 43. Administrations shall ensure, as far as possible, that
Mob-87 ship stations under their jurisdiction are capable of keeping their transmission within the limits of the assigned Morse radiotelegraphy channels (see Appendix 7).

4286 SUP
Mob-87

E2. Working Frequencies of Ship Stations

4287 a) *Channel Spacing and Assignment of Frequencies*

4288 to 4290 SUP
Mob-87

4291 § 48. In all bands, the working frequencies for ship stations
Mob-87 using A1A Morse telegraphy, at speeds not exceeding 40 bauds, are spaced 0.5 kHz apart.

4292 to 4304 SUP
Mob-87

4305 f) *Working Frequencies for Ship Stations Using A1A Morse
 Telegraphy*

4306 § 56. Each administration shall assign to each ship station
Mob-87 under its jurisdiction a sufficient number of Morse radiotelegraphy working frequencies, in any of the 4, 6, 8, 12, 16, 22 and 25 MHz bands, to meet the traffic needs of the ship. In each band used, preferably not less than two Morse radiotelegraphy working frequencies should be assigned to each ship. Administrations shall ensure a uniform distribution of assignments throughout the bands.

4306A § 56A. In cases of poor receiving conditions on the Morse
Mob-87 radiotelegraphy working frequency stated by the ship station, the coast station may request the ship station to change the transmission on any other Morse radiotelegraphy working frequency, whenever the ship is technically able to do so. Such capability is indicated by the transmission of the code QOO.

4307 § 57. For the exclusive purpose of communication by Morse
Mob-87 radiotelegraphy with stations of the maritime mobile service, an aircraft station may be assigned one or more Morse radiotelegraphy working frequencies in the bands shown in No. **4206**. These frequencies shall be assigned in accordance with the same principles of uniform distribution as for ship stations.

4308 g) *Abbreviations for the Indication of Morse Radiotelegraphy Working Frequencies*
Mob-87

4309 § 58. In the bands between 4 000 kHz and 27 500 kHz the
Mob-87 following abbreviations may be used to designate a Morse radiotelegraphy working frequency:

4310 a) if the frequency expressed in kHz has no decimal value, the last three figures shall be transmitted;

4311 b) if the frequency expressed in kHz has a decimal value, the last three figures before the decimal point, the letter R and the first decimal figure shall be transmitted.
Mob-83

Section III. Use of Frequencies for Narrow-Band Direct-Printing Telegraphy

4312 A. *General*

4313 § 59. Frequencies assigned to coast stations for narrow-band
Mob-87 direct-printing telegraphy shall be indicated in the List of Coast Stations (List IV). This List shall also indicate any other useful information concerning the service performed by each coast station.

4314*B. Bands Between 415 kHz and 535 kHz***Mob-83****4315****Mob-87**

§ 60. (1) All ship stations equipped with narrow-band direct-printing apparatus to work in the authorized bands between 415 kHz and 535 kHz shall be able to send and receive class F1B emissions as specified in No. **4123T**. Additionally, ship stations complying with the provisions of Chapter N IX shall be able to receive class F1B emissions on 518 kHz (see No. **4123U**).

4315A

SUP

Mob-87**4316**

(2) Narrow-band direct-printing telegraphy is forbidden in the band 490 - 510 kHz.

4317*C. Bands Between 1 605 kHz and 4 000 kHz***4318****Mob-83**

§ 61. (1) All ship stations equipped with narrow-band direct-printing telegraph apparatus to work in the authorized bands between 1 605 kHz and 4 000 kHz shall be able to send and receive class F1B or J2B emissions on at least two working frequencies.

4319**Mob-87**

(2) Narrow-band direct-printing telegraphy is forbidden in the band 2 170 - 2 194 kHz except as provided for in No. N **2972**.

4320*D. Bands Between 4 000 kHz and 27 500 kHz***4321****Mob-87**

§ 62. All ship stations equipped with narrow-band direct-printing telegraph apparatus to work in the authorized bands between 4 000 kHz and 27 500 kHz shall be able to send and receive class F1B emissions as specified in No. **4123Y**. The assignable frequencies are indicated in Appendices **32** and **33**.

4315.1

SUP

Mob-87

4321A SUP
Mob-87

4321B § 62B. Coast stations employing class F1B emissions and oper-
Mob-87 ating in the bands exclusively allocated to the maritime mobile
service between 4 000 kHz and 27 500 kHz shall at no time use
mean powers in excess of the following:

<i>Band</i>	<i>Maximum mean power</i>
4 MHz	5 kW
6 MHz	5 kW
8 MHz	10 kW
12 MHz	15 kW
16 MHz	15 kW
18/19 MHz	15 kW
22 MHz	15 kW
25/26 MHz	15 kW

4321C (1) In all bands, the working frequencies for ship stations
Mob-87 using narrow-band direct-printing telegraphy at speeds not ex-
ceeding 100 bauds for FSK and 200 bauds for PSK, including
those paired with the working frequencies assignable to coast
stations (see No. **4207**), are spaced 0.5 kHz apart. The frequencies
assignable to ship stations which are paired with those used by
coast stations are shown in No. **4202**. The frequencies assignable to
ship stations which are not paired with those used by coast stations
are shown in No. **4203**.

4321D (2) When assigning pairs of frequencies listed in Nos. **4202**
Mob-87 and **4207** for narrow-band direct-printing telegraphy, administra-
tions shall apply the procedure described in Resolution **300**
(Rev.Mob-87).

4321E (3) Each administration shall if necessary, assign to each
Mob-87 ship station under its jurisdiction and employing non-paired
narrow-band direct-printing telegraphy one or more frequencies
reserved for this purpose and shown in No. **4203**.

4322 *E. Bands Between 156 MHz and 174 MHz*

4323 § 63. All ship stations equipped with direct-printing telegraph
Mob-87 apparatus may work in the authorized bands between 156 MHz and 174 MHz and shall conform to the provisions of Appendix 18.

Mob-87 **Section IIIA. Use of Frequencies for
Digital Selective Calling**

4323A *A. General*
Mob-87

4323B § 63A. The provisions described in this section are applicable
Mob-87 to calling and acknowledgement, when digital selective-calling techniques are used, except in cases of distress, urgency and safety, to which the provisions of Chapter N IX apply.

4323C § 63B. The characteristics of the digital selective-calling equip-
Mob-87 ment shall be in accordance with the relevant CCIR Recommendations.

4323D § 63C. The frequencies on which coast stations provide services
Mob-87 using digital selective calling techniques shall be indicated in the List of Coast Stations, which shall also supply any other useful information concerning such services.

4323E *B. Bands Between 415 kHz and 526.5 kHz*
Mob-87

Mob-87 **B1. Mode of Operation**

4323F § 63D. (1) The class of emission to be used for digital selective
Mob-87 calling and acknowledgement in the authorized bands between 415 kHz and 526.5 kHz shall be F1B.

4323G (2) When transmitting digital selective calls and acknowl-
Mob-87 edgements in the bands between 415 kHz and 526.5 kHz, coast stations should use the minimum power necessary to cover their service area.

4323H § 63E. Transmissions of digital selective calls and acknowl-
Mob-87 edgements by ship stations shall be limited to a mean power of 400 watts.

Mob-87

B2. Call and Acknowledgement

4323I § 63F. For call and acknowledgement by digital selective-calling techniques, an appropriate channel shall be used.
Mob-87

4323J § 63G. The international digital selective-calling frequency 455.5 kHz may be assigned to any coast station. In order to reduce interference on this frequency, it may be used as a general rule by coast stations to call ships of another nationality, or in cases where it is not known on which digital selective-calling frequencies within these bands the ship station is maintaining watch.
Mob-87

4323K § 63H. The international digital selective-calling frequency 458.5 kHz may be used by any ship station. In order to reduce interference on this frequency, it shall only be used when calling cannot be made on national frequencies assigned to the coast station.
Mob-87

4323L § 63I. The frequency to be used for transmission of an acknowledgement shall normally be the frequency paired with the calling frequency used.
Mob-87

Mob-87

B3. Watch

4323M § 63J. (1) A coast station providing international public correspondence service using digital selective-calling techniques within the bands between 415 kHz and 526.5 kHz should, during its hours of service, maintain automatic digital selective-calling watch on appropriate national or international calling frequencies. The hours and frequencies shall be indicated in the List of Coast Stations.
Mob-87

4323N (2) Ship stations equipped with apparatus for digital selective-calling to work in the authorized bands between 415 kHz and 526.5 kHz should, when within the coverage area of coast stations providing services using digital selective-calling techniques in these bands, maintain an automatic digital selective-calling watch on one or more appropriate digital selective-calling frequencies within these bands, taking into account the digital selective-calling frequencies operated by the coast stations.
Mob-87

4323O *C. Bands Between 1 605 kHz and 4 000 kHz*
Mob-87

Mob-87 C1. Mode of Operation

4323P § 63K. (1) The class of emission to be used for digital selective-
Mob-87 calling and acknowledgement in the bands between 1 605 kHz and 4 000 kHz shall be F1B.

4323Q (2) Coast stations should, when transmitting digital selective
Mob-87 calls and acknowledgements in the bands between 1 605 kHz and 4 000 kHz, use the minimum power necessary to cover their service area.

4323R (3) In Region 1, transmissions of digital selective calls and
Mob-87 acknowledgements by ship stations shall be limited to a mean power of 400 watts.

Mob-87 C2. Call and Acknowledgement

4323S § 63L. (1) When calling a coast station by digital selective-calling
Mob-87 techniques, ship stations should use for the call, in order of preference:

4323T a) a national digital selective-calling channel on which
Mob-87 the coast station is maintaining watch;

4323U b) subject to the provisions of No. **4323V**, the inter-
Mob-87 national digital selective-calling frequency 2 189.5 kHz.

4323V (2) The international digital selective-calling frequency
Mob-87 2 189.5 kHz may be assigned to any ship station. In order to reduce interference on this frequency, it may be used as a general rule by ship stations to call coast stations of another nationality.

4323W (3) A ship station calling another ship station by digital
Mob-87 selective-calling techniques should use the frequency 2 177 kHz for the call. Acknowledgements of such calls should also be made on this frequency.

4323X § 63M. (1) When calling ship stations by digital selective-calling
Mob-87 techniques, coast stations should use for the call, in the order of preference:

4323Y a) a national digital selective-calling channel on which
Mob-87 the coast station is maintaining watch;

4323Z b) subject to the provisions of No. **4323AA**, the
Mob-87 international digital selective-calling frequency
2 177 kHz.

4323AA (2) The international digital selective-calling frequency
Mob-87 2 177 kHz may be assigned to any coast station. In order to reduce interference on this frequency, it may be used as a general rule by coast stations to call ships of another nationality, or in cases where it is not known on which digital selective-calling frequencies within the bands between 1 605 kHz and 4 000 kHz the ship station is maintaining watch.

4323AB § 63N. The frequency to be used for transmission of an
Mob-87 acknowledgement shall normally be the frequency paired with the frequency used for the call received, as indicated in the List of Coast Stations (see also No. **4323D**).

Mob-87

C3. Watch

4323AC § 63O. (1) The provisions detailed in this sub-section are appli-
Mob-87 cable to watch-keeping by digital selective-calling, except for distress, urgency and safety purposes, to which the provisions of Section III of Article N 38 apply.

4323AD (2) A coast station providing international public corre-
Mob-87 spondence service using digital selective-calling techniques within the bands between 1 605 kHz and 4 000 kHz should, during its hours of service, maintain automatic digital selective-calling watch on appropriate national or international calling frequencies. The hours and frequencies shall be indicated in the List of Coast Stations.

4323AE (3) Ship stations equipped with apparatus for digital
Mob-87 selective-calling to work in the authorized bands between 1 605 kHz and 4 000 kHz should, when within the coverage area of coast stations providing services using digital selective-calling techniques in these bands, maintain an automatic digital selective-calling watch on one or more appropriate digital selective-calling frequencies within these bands, taking into account the digital selective calling frequencies operated by the coast stations.

4323AF *D. Bands Between 4 000 kHz and 27 500 kHz*
Mob-87

Mob-87 D1. Mode of Operation

4323AG § 63P. (1) The class of emission to be used for digital selective-
Mob-87 calling and acknowledgement in the authorized bands between 4 000 kHz and 27 500 kHz shall be F1B.

4323AH (2) When transmitting digital selective calls and acknowl-
Mob-87 edgements in the bands between 4 000 kHz and 27 500 kHz, coast stations shall at no time use a mean power in excess of the following values:

<i>Band</i>	<i>Maximum mean power</i>
4 MHz	5 kW
6 MHz	5 kW
8 MHz	10 kW
12 MHz	15 kW
16 MHz	15 kW
18/19 MHz	15 kW
22 MHz	15 kW
25/26 MHz	15 kW

4323AI (3) Transmissions of digital selective calls and acknowl-
Mob-87 edgements by ship stations in the bands between 4 000 kHz and 27 500 kHz shall be limited to a mean power of 1.5 kW.

Mob-87

D2. Call and Acknowledgement

4323AJ § 63Q. A station calling another station by digital selective-calling techniques within the authorized bands between 4 000 kHz and 27 500 kHz should choose an appropriate digital selective-calling frequency, taking into account propagation characteristics.

Mob-87

4323AK § 63R. (1) When calling a coast station by digital selective-calling techniques on frequencies within the authorized bands between 4 000 kHz and 27 500 kHz, ship stations should use for the call, in order of preference:

Mob-87

4323AL a) a national digital selective-calling channel on which the coast station is maintaining watch;

Mob-87

4323AM b) subject to the provisions of No. **4323AN**, one of the international digital selective-calling frequencies indicated in No. **4683**.

Mob-87

4323AN (2) The international digital selective-calling frequencies indicated in No. **4683** may be used by any ship station. In order to reduce interference on these frequencies, they shall only be used when calling cannot be made on nationally assigned frequencies.

Mob-87

4323AO §63S. (1) When calling ship stations by digital selective-calling techniques on frequencies within the bands between 4 000 kHz and 27 500 kHz coast stations should use for the call, in order of preference:

Mob-87

4323AP a) a national digital selective-calling channel on which the coast station is maintaining watch;

Mob-87

4323AQ b) subject to the provisions of No. **4323AR**, one of the international digital selective-calling frequencies indicated in No. **4684**.

Mob-87

4323AR (2) The international digital selective-calling frequencies indicated in No. **4684** may be assigned to any coast station. In order to reduce interference on these frequencies, they may be used as a general rule by coast stations to call ships of another nationality, or in cases where it is not known on which digital selective-calling frequencies within the bands concerned the ship station is maintaining watch.

Mob-87

Mob-87

D3. Watch

4323AS § 63T. (1) The provisions detailed in this sub-section are applicable to watch-keeping by digital selective-calling, except for distress, urgency and safety purposes, to which the provisions of Section III of Article N 38 apply.

Mob-87

4323AT (2) A coast station providing international public correspondence service using digital selective-calling techniques within the bands between 4 000 kHz and 27 500 kHz should, during its hours of service, maintain automatic digital selective-calling watch on the appropriate digital selective-calling frequencies as indicated in the List of Coast Stations.

Mob-87

4323AU (3) Ship stations equipped with apparatus for digital selective-calling to work in the authorized bands between 4 000 kHz and 27 500 kHz should maintain automatic digital selective-calling watch on appropriate digital selective-calling frequencies within these bands, taking into account propagation characteristics and the calling frequencies for coast stations providing service using digital selective-calling techniques.

Mob-87

4323AV *E. Bands Between 156 MHz and 174 MHz*

Mob-87

Mob-87

E1. Mode of Operation

4323AW § 63U. The class of emission to be used for digital selective-calling and acknowledgement in the authorized bands between 156 MHz and 174 MHz shall be G2B.

Mob-87

Mob-87

E2. Call and Acknowledgement

4323AX § 63V. (1) The frequency 156.525 MHz is an international frequency in the maritime mobile service used for distress, urgency, safety and calling by digital selective-calling techniques (see Nos. N 3037, N 3203, N 3226 and 4686 to 4687K).

Mob-87

4323AY (2) Calling by digital selective-calling techniques within the
Mob-87 authorized bands between 156 MHz and 174 MHz, from ship to coast station, from coast station to ship and from ship to ship should, as a general rule, be made on the digital selective-calling frequency 156.525 MHz.

Mob-87 E3. Watch

4323AZ § 63W. Information concerning watch-keeping by automatic
Mob-87 digital selective-calling on the frequency 156.525 MHz by coast stations shall be given in the List of Coast Stations (see also No. N 3075).

4323BA § 63X. Ship stations equipped with apparatus for digital
Mob-87 selective-calling to work in the authorized bands between 156 MHz and 174 MHz should, while at sea, maintain an automatic digital selective-calling watch on the frequency 156.525 MHz (see also No. N 3079).

Mob-87 Section IIIB. Use of Frequencies for Wide-Band Telegraphy,
Facsimile, Special Transmission Systems and
Oceanographic Data Transmissions

4323BB A. *Wide-Band Telegraphy, Facsimile*
Mob-87 *and Special Transmission Systems*

4323BC A1. Bands Between 1 605 kHz and 4 000 kHz
Mob-87

4323BD § 63Y. In Region 2, the frequencies in the band 2 068.5 -
Mob-87 2 078.5 kHz are assigned to ship stations using wide-band telegraphy, facsimile and special transmission systems. The provisions of No. 4323BJ apply.

4323BE A2. Bands Between 4 000 kHz and 27 500 kHz
Mob-87

4323BF § 63Z. In all bands, the working frequencies for ship stations
Mob-87 equipped to use wide-band telegraphy, facsimile and special transmission systems are spaced 4 kHz apart. The assignable frequencies are shown in No. **4200**.

4323BG § 63AA. (1) Each administration shall assign to each ship station
Mob-87 under its jurisdiction and employing wide-band telegraphy, facsimile and special transmission systems one or more series of the working frequencies reserved for this purpose shown in No. **4200**. The total number of series assigned to each ship station shall be determined by traffic requirements.

4323BH (2) When ship stations employing wide-band telegraphy,
Mob-87 facsimile and special transmission systems are assigned less than the total number of working frequencies in a band, the administration concerned shall assign working frequencies to such ships in accordance with an orderly system of rotation that will ensure approximately the same number of assignments on any one working frequency.

4323BI (3) However, within the limits of the bands given in
Mob-87 No. **4200**, administrations may, to meet the needs of specific systems, assign frequencies in a different manner from that shown in No. **4200**. Nevertheless administrations shall take into account, as far as possible, the provisions of No. **4200**, concerning channelling and the 4 kHz spacing.

4323BJ § 63AB. Ship stations equipped for wide-band telegraphy, facsimile and special transmission systems may, in the frequency bands
Mob-87 reserved for such use, employ any class of emission provided that such emissions can be contained within the wide-band channels indicated in No. **4200**. However, the use of A1A Morse telegraphy and telephony is excluded except for circuit alignment purposes.

4326A § 65A. However, coast stations in automatic service in the UHF
Mob-87 band may emit marking signals. The emission power of the signals shall however be limited to the minimum value necessary for effective operation of the signalling. Such emissions shall not cause harmful interference to the maritime mobile service in other countries.

4327 § 66. The frequencies of transmission (and reception when these frequencies are in pairs as in the case of duplex radiotelephony) assigned to each coast station shall be indicated in the List of Coast Stations. This List shall also indicate any other useful information concerning the service performed by each coast station.

4328 § 67. Single-sideband apparatus in radiotelephone stations of
Mob-87 the maritime mobile service operating in the bands allocated to this service between 1 605 kHz and 4 000 kHz and in the bands allocated exclusively to this service between 4 000 kHz and 27 500 kHz shall satisfy the technical and operational conditions specified in Appendix 17.

4329 and 4330 SUP
Mob-87

4331 *B. Bands Between 1 605 kHz and 4 000 kHz*

B1. Mode of Operation of Stations

4332 to 4334 SUP
Mob-87

4335 § 70. (1) Unless otherwise specified in the present Regulations
Mob-87 (see Nos. **2973**, **3004**, **4127**, **4342**, **4343** and **4354**) the class of emission to be used in the bands between 1 605 kHz and 4 000 kHz shall be J3E.

4336 and 4337 SUP
Mob-87

- 4338** (2) The peak envelope power of coast radiotelephone stations operating in the authorized bands allocated between 1 605 kHz and 4 000 kHz shall not exceed:
- 4339** — 5 kW for coast stations located north of latitude 32° N;
- 4340** — 10 kW for coast stations located south of latitude 32° N.
- 4341** (3) The normal mode of operation for each coast station shall be indicated in the List of Coast Stations.
- 4342** (4) Transmissions in the bands 2 170 - 2 173.5 kHz and
Mob-83 2 190.5 - 2 194 kHz with the carrier frequency 2 170.5 kHz and the carrier frequency 2 191 kHz respectively are limited to class J3E emissions and are limited to a peak envelope power of 400 W. However, on the frequency 2 170.5 kHz and with the same power limit, coast stations may also use class H2B emissions when using the selective calling system defined in Appendix 39 and exceptionally, in Regions 1 and 3 and in Greenland, may also use class H3E for safety messages.

B2. Call and Reply

- 4343** § 71. (1) The frequency 2 182 kHz¹ is an international distress
Mob-87 frequency for radiotelephony (see No. 2973 for details of its use for distress, urgency, safety and emergency position-indicating radio-beacon (EPIRB) purposes). The class of emission to be used for radiotelephony on the frequency 2 182 kHz shall be J3E or H3E (see No. 4127) except for such apparatus as is referred to in No. 4130.

4343.1
Mob-87

¹ Where administrations provide at their coast stations a watch on 2 182 kHz for receiving class J3E emissions as well as class A3E and H3E emissions, ship stations may call those coast stations for safety purposes using class H3E or J3E emissions.

- 4344** (2) The frequency 2 182 kHz may also be used:
- 4345** a) for call and reply in accordance with the provisions of Article **65**;
- 4346** b) by coast stations to announce the transmission, on another frequency, of traffic lists (see Nos. **4925** to **4929**).
- 4347** (3) In addition, an administration may assign to its stations other frequencies for call and reply.
- 4348** § 72. To facilitate use of the frequency 2 182 kHz for distress
Mob-87 purposes, all transmissions on 2 182 kHz shall be kept to a minimum.
- 4349** SUP
Mob-87
- 4350** § 74. (1) Before transmitting on the carrier frequency 2 182 kHz, a station shall listen on this frequency for a reasonable period to make sure that no distress traffic is being sent (see No. **4915**).
- 4351** (2) The provisions of No. **4350** do not apply to stations in distress.

B3. Traffic

- 4352** § 75. (1) Coast stations which use 2 182 kHz for calling shall be able to use at least one other frequency in the authorized bands between 1 605 kHz and 2 850 kHz.
- 4353** (2) Coast stations authorized to use radiotelephony on one
Mob-83 or more frequencies other than 2 182 kHz in the authorized bands between 1 605 kHz and 2 850 kHz shall use class J3E emissions on those frequencies (see also No. **4342**).
- 4354** (3) Coast stations open to the public correspondence service
Mob-83 on one or more frequencies between 1 605 kHz and 2 850 kHz shall also be capable of transmitting class H3E and J3E emissions with a carrier frequency of 2 182 kHz, and of receiving class A3E, H3E and J3E emissions with a carrier frequency of 2 182 kHz.

4355 (4) One of the frequencies which coast stations are required to be able to use (see No. **4352**) is printed in heavy type in the List of Coast Stations to indicate that it is the normal working frequency of the stations. Supplementary frequencies, if assigned, are shown in ordinary type.

4356 (5) Working frequencies of coast stations shall be chosen in such a manner as to avoid interference with other stations.

B4. Additional Provisions Applying to Region 1

4357 § 76. The peak envelope power of ship radiotelephone stations operating in the authorized bands between 1 605 kHz and 2 850 kHz shall not exceed 400 W.

4358 § 77. (1) All stations on ships making international voyages should be able to use:

4359 a) the following ship-to-shore working frequency, if
Mob-87 required by their service:

4360 – carrier frequency 2 045 kHz (assigned frequency
Mob-87 2 046.4 kHz) for class J3E emissions;

4361 SUP
Mob-83

4362 b) the following intership frequency, if required by their
Mob-87 service:

4363 – carrier frequency 2 048 kHz (assigned frequency
Mob-87 2 049.4 kHz) for class J3E emissions;

4364 SUP
Mob-83

4365 This frequency may be used as an additional ship-to-
Mob-87 shore frequency.

4366 (2) This frequency shall not be used for working between
Mob-87 stations of the same nationality *.

* *Note by the General Secretariat:* The provisions of No. **4366** would apply to both carrier frequencies, 2045 kHz and 2048 kHz.

4367 § 78. (1) Ships frequently exchanging correspondence with a
Mob-87 coast station of a nationality other than their own may use the same frequencies as ships of the nationality of the coast station:

4367A — where mutually agreed by the administrations concerned; or
Mob-87

4367B — where the facility is open to ships of all nationalities by virtue of a note against each of the frequencies concerned in the List of Coast Stations.
Mob-87

4368 (2) In exceptional circumstances, if frequency usage according to Nos. **4358**, **4359**, **4360**, **4362**, **4363** and **4365** or No. **4367** is not possible, a ship station may use one of its own assigned national ship-to-shore frequencies for communication with a coast station of another nationality, under the express condition that the coast station as well as the ship station take precautions (see No. **4915**) to ensure that the use of such a frequency will not cause harmful interference to the service for which the frequency in question is authorized.

4368A § 78A. The following ship-to-shore frequencies:
Mob-87

- carrier frequency 2 051 kHz (assigned frequency 2 052.4 kHz),
- carrier frequency 2 054 kHz (assigned frequency 2 055.4 kHz), and
- carrier frequency 2 057 kHz (assigned frequency 2 058.4 kHz),

may be assigned to coast stations as receiving frequencies.

B5. Additional Provisions Applying to Regions 2 and 3

4369 § 79. All stations on ships making international voyages should, if required by their service, be able to use the intership carrier frequencies:

2 635 kHz (assigned frequency 2 636.4 kHz)

2 638 kHz (assigned frequency 2 639.4 kHz)

The conditions of use of these frequencies are specified in No. **4193**.

4370
Mob-87

*C. Bands Between 4 000 kHz
and 27 500 kHz*

C1. Mode of Operation of Stations

4371 § 80. (1) The class of emission to be used for radiotelephony in
Mob-87 the bands between 4 000 kHz and 27 500 kHz shall be J3E.

4372 (2) The normal mode of operation of each coast station is indicated in the List of Coast Stations.

4373 (3) Coast radiotelephone stations employing class J3E emis-
Mob-87 sions in the bands between 4 000 and 27 500 kHz shall use the minimum power necessary to cover their service area and shall at no time use a peak envelope power in excess of 10 kW per channel.

4374 (4) Ship radiotelephone stations employing class J3E emis-
Mob-87 sions in the bands between 4 000 kHz and 27 500 kHz shall at no time use a peak envelope power in excess of 1.5 kW per channel.

C2. Call and Reply

4375 § 81. (1) Ship stations may use the following carrier frequencies
Mob-87 for calling in radiotelephony:

4 125 kHz^{1, 2, 3}
 6 215 kHz^{2, 3}
 8 255 kHz
 12 290 kHz³
 16 420 kHz³
 18 795 kHz
 22 060 kHz
 25 097 kHz

4375.1 ¹ In the United States, the carrier frequency 4 125 kHz is also
Mob-83 authorized for common use by coast and ship stations for single-sideband radiotelephony on a simplex basis, provided the peak envelope power of such stations does not exceed 1 kW (see also No. **4376.2**).

4375.2 ² The carrier frequencies 4 125 kHz and 6 215 kHz are also
Mob-87 authorized for common use by coast and ship stations for single-sideband radiotelephony on a simplex basis for call and reply purposes, provided that the peak envelope power of such stations does not exceed 1 kW. The use of these frequencies for working purposes is not permitted (see also Nos. **2982** and **4375.1**).

4375.3 ³ The carrier frequencies 4 125 kHz, 6 215 kHz, 8 291 kHz,
Mob-87 12 290 kHz and 16 420 kHz are also authorized for common use by coast and ship stations for single-sideband radiotelephony on a simplex basis for distress and safety traffic.

4376 (2) Coast stations may use the following carrier frequencies
Mob-87 for calling in radiotelephony ¹:

4 417 kHz ²
6 516 kHz ²
8 779 kHz
13 137 kHz
17 302 kHz
19 770 kHz
22 756 kHz
26 172 kHz

4377 SUP
Mob-87

4378 § 83. The hours of service of coast stations open to public
correspondence and the frequency or frequencies on which watch
is maintained shall be indicated in the List of Coast Stations.

4379 § 84. (1) Before transmitting on the carrier frequencies
Mob-87 4 125 kHz, 6 215 kHz, 8 291 kHz, 12 290 kHz or 16 420 kHz a
station shall listen on the frequency for a reasonable period to
make sure that no distress traffic is being sent (see No. **4915**).

4380 (2) The provisions of No. **4379** do not apply to stations in
distress.

4376.1 ¹ These frequencies may also be used by coast stations with
class H2B emission, when using the selective calling system defined in
Appendix 39.

4376.2 ² The carrier frequencies 4 417 kHz and 6 516 kHz are also
Mob-87 authorized for common use by coast and ship stations for single-sideband
radiotelephony on a simplex basis, provided that the peak envelope power
of such stations does not exceed 1 kW. The use of 6 516 kHz for this
purpose should be limited to daytime operation (see also No. **4375.1**).

C3. Traffic

- 4381** § 85. (1) For the conduct of duplex telephony, the transmitting frequencies of the coast stations and of the corresponding ship stations shall be associated in pairs, as indicated in Appendix 16, except temporarily in cases where working conditions prohibit the use of paired frequencies in order to meet operational needs.
- 4382** (2) The frequencies to be used for the conduct of simplex radiotelephony are shown in Appendix 16, Section B. In these cases, the peak envelope power of the coast station transmitter shall not exceed 1 kW.
- 4383** (3) The frequencies indicated in Appendix 16 for ship station transmissions may be used by ships of any category according to traffic requirements.
- 4384** (4) The technical characteristics of transmitters used for
Mob-87 radiotelephony in the bands between 4 000 kHz and 27 500 kHz are specified in Appendix 17.

4385 *D. Bands Between 156 MHz and 174 MHz*

D1. Call and Reply

- 4386** § 86. (1) The frequency 156.8 MHz is the international frequency
Mob-87 for distress traffic and for calling by radiotelephony when using frequencies in the authorized bands between 156 MHz and 174 MHz (see Nos. **2994** and **N 3041** for details of use). The class of emission to be used for radiotelephony on the frequency 156.8 MHz shall be G3E (see Appendix 19).
- 4387** (2) The frequency 156.8 MHz may also be used:
- 4388** a) by coast and ship stations for call and reply in accordance with the provisions of Articles 62 and 65;
- 4389** b) by coast stations to announce the transmission on another frequency of traffic lists and important maritime information (see Nos. **4925** to **4929**).
- 4390** (3) The frequency 156.8 MHz may be used by ship stations
Mob-87 and coast stations for selective calling as defined in Appendix 39.

- 4391** (4) Any one of the channels designated in Appendix 18 for public correspondence may be used as a calling channel if an administration so desires. Such use shall be indicated in the List of Coast Stations.
- 4392** (5) Ship and coast stations in the public correspondence service may use a working frequency, for calling purposes, as provided in Articles 62 and 65.
- 4393** (6) All emissions in the band 156.7625 - 156.8375 MHz
Mob-87 capable of causing harmful interference to the authorized transmissions of stations of the maritime mobile service on 156.8 MHz are forbidden.
- 4394** (7) To facilitate the reception of distress calls and distress
Mob-87 traffic, all transmissions on 156.8 MHz shall be kept to a minimum and shall not exceed one minute.
- 4395** (8) Before transmitting on the frequency 156.8 MHz, a station should listen on this frequency for a reasonable period to make sure that no distress traffic is being sent (see No. 4915).
- 4396** (9) The provisions of No. 4395 do not apply to stations in distress.

D2. Watch

- 4397** § 87. (1) In addition to the watch referred to in No. 3057, a coast station open to the international public correspondence service should, during its hours of service, maintain watch on its receiving frequency or frequencies indicated in the List of Coast Stations.
- 4398** (2) The method of watch on a working frequency shall be no less efficient than watch by an operator.

- 4399** (3) Ship stations should, where practicable, maintain watch on 156.8 MHz when within the service area of a coast station providing international maritime mobile radiotelephone service in the band 156 - 174 MHz. Ship stations fitted only with VHF radiotelephone equipment operating in the authorized bands between 156 MHz and 174 MHz should maintain watch on 156.8 MHz when at sea.
- 4400** (4) Ship stations, when in communication with a port station, may, on an exceptional basis and subject to the agreement of the administration concerned, continue to maintain watch on the appropriate port operations frequency only, provided that watch on 156.8 MHz is being maintained by the port station.
- 4401** (5) Ship stations, when in communication with a coast station in the ship movement service and subject to the agreement of the administration concerned, may continue to maintain watch on the appropriate ship movement service frequency only, provided that watch on 156.8 MHz is being maintained by that coast station.
- 4402** § 88. A coast station in the port operations service in an area where 156.8 MHz is being used for distress, urgency or safety shall, during its working hours, keep an additional watch on 156.6 MHz or another port operations frequency indicated in heavy type in the List of Coast Stations.
- 4403** § 89. A coast station in the ship movement service in an area where 156.8 MHz is being used for distress, urgency and safety shall, during its working hours, keep an additional watch on the ship movement frequencies indicated in heavy type in the List of Coast Stations.

D3. Traffic

4404 § 90. (1) Where practicable, coast stations open to the international public correspondence service shall be capable of working with ship stations equipped for duplex or semi-duplex operation.

4405 (2) The method of working (single-frequency or two-frequency) specified in Appendix 18 for each channel should be used in the international services.
Mob-87

4406 § 91. Communications in the port operations service shall be restricted to those relating to operational handling, the movement and the safety of ships and, in emergency, to the safety of persons. Messages of a public correspondence nature shall be excluded from this service.

4407 § 92. Communications in the ship movement service shall be restricted to those relating to the movement of ships. Messages of a public correspondence nature shall be excluded from this service.

4408 § 93. (1) Coast stations which use 156.8 MHz for calling shall be able to use at least one other authorized channel in the international maritime mobile radiotelephone service in the band 156 - 174 MHz.

4409 (2) In the band 156 - 174 MHz administrations shall, where practicable, assign frequencies to coast and ship stations in accordance with the Table of Transmitting Frequencies given in Appendix 18 for such international services as administrations consider necessary.
Mob-87

4410 (3) The normal sequence in which channels should be put into use in the band 156 - 174 MHz is indicated by the figures in the relevant columns of Appendix 18.

4411 SUP
Mob-83

4412 (4) In assigning frequencies to their coast stations, administrations should collaborate in cases where harmful interference might occur.

4413 (5) Channels are designated by numbers in the Table of
Mob-87 Transmitting Frequencies given in Appendix 18.

4414 § 94. (1) In assigning frequencies to stations of authorized services, other than maritime mobile, administrations shall avoid the possibility of interference to international maritime services in the bands between 156 MHz and 174 MHz.

4415 (2) The use of channels for maritime mobile purposes other
Mob-87 than those indicated in the Table of Transmitting Frequencies given in Appendix 18 shall not cause harmful interference to services which operate in accordance with that table and shall not prejudice the future development of such services.

4416 § 95. The carrier power of ship station transmitters shall not
Mob-83 exceed 25 W.

4417
to NOT allocated.
4440

ARTICLE 61

**Order of Priority of Communications in the Maritime Mobile Service
and in the Maritime Mobile-Satellite Service****4441**

The order of priority for communications¹ in the maritime mobile service and the maritime mobile-satellite service shall be as follows, except where impracticable in a fully automated system in which, nevertheless, category 1 shall receive priority:

1. Distress calls, distress messages, and distress traffic.
2. Communications preceded by the urgency signal.
3. Communications preceded by the safety signal.
4. Communications relating to radio direction-finding.
5. Communications relating to the navigation and safe movement of aircraft engaged in search and rescue operations.
6. Communications relating to the navigation, movements and needs of ships and aircraft, and weather observation messages destined for an official meteorological service.
7. ETATPRIORITENATIONS – Radiotelegrams relating to the application of the United Nations Charter.
8. ETATPRIORITE – Government radiotelegrams with priority and Government calls for which priority has been expressly requested.

4441.1

¹ The term *communications* as used in this Article includes radiotelegrams, radiotelephone calls and radiotelex calls.

9. Service communications relating to the working of the telecommunication service or to communications previously exchanged.
10. Government communications other than those shown in 8 above, ordinary private communications, RCT¹ radiotelegrams and press radiotelegrams.

4442

to

4664

NOT allocated.

ARTICLE 62

**Selective Calling Procedure in the
Maritime Mobile Service**

Section I. General

4665 SUP
Mob-83

4665A § 1. (1) Selective calling is designed for automatic station calling
Mob-83 and distress alerting or the transmission of information for the organization of traffic.

4666 SUP
Mob-83

4666A (2) Selective calling may be carried out using a sequential
Mob-83 single-frequency code system (Section II) or a digital selective-calling system (see Section III) in the shore-to-ship, ship-to-shore and ship-to-ship directions.

Section II. Sequential Single-Frequency Code System

4667 *A. General*

4668 § 2. The characteristics of the sequential single-frequency
code international selective-calling system shall be in accordance with Appendix 39.

4668A § 2A. The sequential single-frequency code system may be in
Mob-83 operation until it is superseded by the digital selective-calling system referred to in Section III.

4669 *B. Method of Calling*

4670 § 3. (1) The call shall consist of:

- 4671**
- a) the selective call number or identification number or signal of the station called, followed by
 - b) the selective call number or identification number or signal of the station calling.

4672

However, in the case of a coast station calling on VHF, the number of the channel to be used for the reply and for traffic may replace the identification number or signal of the coast station.

The call shall be transmitted twice.

4673

(2) When a station called does not reply, the call should not normally be repeated until after an interval of at least five minutes and should not then normally be renewed until after a further interval of fifteen minutes.

4674

(3) The use of an "all ships call" shall be confined to distress and urgency in the MF and HF bands and the announcement of vital navigational warnings in those bands; additionally it may be used for safety purposes in the VHF band. This call may only be used to supplement, if required, the distress procedure specified in Nos. 3101, 3102, 3116 and 3117 and shall in no circumstances be used in place of such procedures, in particular the alarm signals mentioned in Nos. 3268 and 3270.

4675

C. Reply to Calls

4676

§ 4. The reply to calls shall be made in accordance with the provisions of:

4677

Mob-87

a) Nos. 4767 and 4769 when using Morse radiotelegraphy;

4678

b) Nos. **4982** to **5002** when using radiotelephony.

4679

D. Frequencies to Be Used

4679A

Mob-87

§ 4A. Selective calling may be carried out on the following calling frequencies:

500	kHz
2 170.5	kHz
4 125	kHz
4 417	kHz
6 516	kHz
8 779	kHz
13 137	kHz
17 302	kHz

19 770 kHz
 22 756 kHz
 26 172 kHz
 156.8 MHz ¹

4679B and 4679C SUP
Mob-87

4680 SUP
Mob-83

Section III. Digital Selective Calling System

4680A *A. General*
Mob-87

4681 § 6. The technical characteristics of equipment used for
Mob-87 digital selective calling shall be in conformity with the relevant
 CCIR Recommendations.

4681A § 6A. The frequencies used for distress and safety purposes
Mob-87 using digital selective calling are as follows (see also Article 38):

2 187.5 kHz
 4 207.5 kHz
 6 312 kHz
 8 414.5 kHz
 12 577 kHz
 16 804.5 kHz
 156.525 MHz ²

4679A.1 ¹ Selective calling on this frequency should normally be only in
Mob-83 the direction coast station to ship or intership. Selective calls from ship to
 coast station should whenever possible be sent on other frequencies of
 Appendix 18, as appropriate.

4680.1 and 4680.2 SUP
Mob-83

4681A.1 SUP
Mob-87

4681A.2 ² The frequency 156.525 MHz may also be used for digital
Mob-87 selective calling purposes other than distress and safety.

4682 § 7. The frequencies assignable on an international basis to
Mob-87 ship and coast stations for digital selective calling, for purposes other than distress and safety, are as follows:

4683	<i>a) Ship stations *</i>			
Mob-87	458.5			kHz
	2 177 ¹	2 189.5		kHz
	4 208	4 208.5	4 209	kHz
	6 312.5	6 313	6 313.5	kHz
	8 415	8 415.5	8 416	kHz
	12 577.5	12 578	12 578.5	kHz
	16 805	16 805.5	16 806	kHz
	18 898.5	18 899	18 899.5	kHz
	22 374.5	22 375	22 375.5	kHz
	25 208.5	25 209	25 209.5	kHz
			156.525	MHz ²

4684	<i>b) Coast stations *</i>			
Mob-87	455.5			kHz
	2 177			kHz
	4 219.5	4 220	4 220.5	kHz
	6 331	6 331.5	6 332	kHz
	8 436.5	8 437	8 437.5	kHz
	12 657	12 657.5	12 658	kHz
	16 903	16 903.5	16 904	kHz
	19 703.5	19 704	19 704.5	kHz
	22 444	22 444.5	22 445	kHz
	26 121	26 121.5	26 122	kHz
			156.525	MHz ²

Mob-87 * The following paired frequencies (for ship/coast stations) 4 208/4 219.5 kHz, 6 312.5/6 331 kHz, 8 415/8 436.5 kHz, 12 577.5/12 657 kHz, 16 805/16 903 kHz, 18 898.5/19 703.5 kHz, 22 374.5/22 444 kHz and 25 208.5/26 121 kHz are the first choice international frequencies for digital selective calling.

4683.1 ¹ The frequency 2 177 kHz is available to ship stations for
Mob-87 intership calling only.

4683.2 }
4684.1 } ² The frequency 156.525 MHz is also used for distress and
Mob-87 safety purposes (see No. **4681A.2**).

4685 § 8. In addition to the frequencies listed in Nos. **4683**
Mob-87 and **4684**, appropriate working frequencies in the following bands may be used for digital selective calling:

- 415 - 526.5 kHz (Regions 1 and 3)
- 415 - 525 kHz (Region 2)
- 1 606.5 - 4 000 kHz (Regions 1 and 3)
- 1 605* - 4 000 kHz (Region 2)
- 4 000 - 27 500 kHz
- 156 - 174 MHz

4686 *B. Method of Calling*

Mob-87

4686A § 9. (1) The procedures set out in this section are applicable to
Mob-87 the use of digital selective calling techniques, except in cases of distress, urgency or safety, to which the provisions of Chapter N IX are applicable.

4686B (2) The call shall contain information indicating the station
Mob-87 or stations to which the call is directed, and the identification of the calling station.

4686C (3) The call should also contain information indicating the
Mob-87 type of communication to be set up and may include supplementary information such as a proposed working frequency or channel; this information shall always be included in calls from coast stations, which shall have priority for that purpose.

4686D (4) The technical format of the call sequence shall be in
Mob-87 conformity with the relevant CCIR Recommendations.

4686E (5) The call shall be transmitted once on a single appro-
Mob-87 priate calling channel or frequency only. Only in exceptional circumstances may a call be transmitted simultaneously on more than one frequency.

4686F (6) When calling ship stations, coast stations may transmit
Mob-87 the call sequence twice at the same calling frequency, whatever it may be, with an interval of at least 45 seconds between the two calls, provided that they receive no acknowledgement within that interval.

* For the band 1 605 - 1 625 kHz, see Nos. **480** and **481**.

4686G (7) When calling on nationally assigned frequencies, coast
Mob-87 stations may transmit a call attempt consisting of up to five calls at the same frequency.

4686H (8) If the station called does not acknowledge the call, the
Mob-87 call may be transmitted again on the same or another calling frequency after a period of at least five minutes (five seconds in automated VHF or UHF systems) and should then normally not be repeated until after a further interval of 15 minutes.

4686I (9) When initiating a call to a coast station, a ship station
Mob-87 should preferably use the coast station's nationally assigned calling channels, for which purpose it shall send a single calling sequence on the selected frequency.

4687 *C. Acknowledgement of Calls*
Mob-87

Mob-87 C1. Content of acknowledgements and transmission procedure

4687A § 10. (1) The reply to a digital selective call requesting an
Mob-87 acknowledgement shall be made by transmitting an appropriate acknowledgement using digital selective calling techniques.

4687B (2) Transmission of the calling signal shall cease as soon as
Mob-87 an acknowledgement is received.

4687C (3) Acknowledgements may be manual or automatic. When
Mob-87 an acknowledgement can be transmitted automatically, it shall be in conformity with the relevant CCIR Recommendations.

4687D (4) Acknowledgements shall normally be transmitted on the
Mob-87 frequency paired with the frequency of the received call. If the same call is received on several calling channels, the most appropriate shall be chosen to transmit the acknowledgement.

4687E (5) The technical format of the acknowledgement sequence
Mob-87 shall be in conformity with the relevant CCIR Recommendations.

4687F (6) If the call includes a proposal for a working channel or
Mob-87 frequency which can be used immediately by the station called, the latter should transmit an acknowledgement indicating this possibility.

4687G (7) If, in the above case, the station called is unable
Mob-87 immediately to use the working frequency or channel proposed in the received call, it should indicate this in its acknowledgement, which may also include supplementary information in that respect.

4687H (8) Coast stations unable to comply immediately on a
Mob-87 proposed working frequency or channel may include a proposal of an alternative working frequency or channel in the acknowledgement specified in No. **4687G**.

4687I (9) If no working frequency or channel was proposed in the
Mob-87 call, the station called should include a proposal for a working frequency or channel in its acknowledgement of the call.

Mob-87 C2. Mode of transmission
of acknowledgements

4687J § 11. (1) Acknowledgements may be initiated either manually or
Mob-87 automatically. Where the transmission of acknowledgement is automatic, this should be in conformity with the relevant CCIR Recommendations.

4687K (2) If the ship station is unable to acknowledge a received
Mob-87 call within a time limit of five minutes, the ship station's reply to the call should be made by transmitting a call in accordance with the provisions of Nos. **4686** to **4686I** to the calling station. Where automated or semi-automated systems are used, a time limit in accordance with the relevant Recommendation of the CCIR should apply.

4688
Mob-87

*D. Preparation for Exchange
of Traffic*

4688A § 12. (1) The procedures prescribed in this sub-section are appli-
Mob-87 cable for manual operation. Where automated or semi-automated
digital selective calling VHF or UHF systems are used, these
should operate in conformity with relevant CCIR Recommendations.

4688B (2) After having transmitted an acknowledgement indi-
Mob-87 cating that it can use the proposed working frequency or channel,
the station called transfers to the working frequency or channel
and prepares to receive the traffic.

4688C (3) The calling station shall prepare to transmit traffic on
Mob-87 the working channel or frequency it has proposed.

4688D (4) The calling station and the called station then exchange
Mob-87 traffic on the appropriate working frequency or channel.

4688E (5) If it is unable to use the working frequency or channel
Mob-87 proposed in an acknowledgement transmitted by the coast station,
the ship station should then transmit a new call in accordance with
the provisions of Nos. **4686H** and **4686I**, indicating that it is
unable to comply.

4688F (6) The coast station shall then transmit an acknowledge-
Mob-87 ment indicating an alternative working frequency or channel.

4688G (7) On reception of the acknowledgement, the operator of
Mob-87 the ship station shall then apply the provisions of Nos. **4688C**
or **4688E**, as appropriate.

4688H (8) For communication between a coast station and a ship
Mob-87 station, the coast station shall finally decide the working frequency
or channel to be used.

4689
to NOT allocated.
4709

ARTICLE 63

Mob-87

**General Morse Radiotelegraph Procedure
in the Maritime Mobile Service****Section I. General Provisions**

- 4710 § 1. The procedure detailed in this Article is obligatory,
except in cases of distress, urgency or safety, to which the
provisions of Chapter IX are applicable.
- 4711 § 2. The use of the Morse code signals specified in the
Instructions for the Operation of the International Public Telegram
Service shall be obligatory. However, for radiocommunications of
a special character, the use of other signals is not precluded.
- 4712 § 3. The service abbreviations given in Appendix 14 are to
be used.

Section II. Preliminary Operations

- 4713 § 4. (1) Before transmitting, a station shall take precautions to
Mob-87 ensure that its emissions will not interfere with transmissions
already in progress; if such interference is likely, the station shall
await an appropriate break in the communications in progress.
- 4714 (2) If, these precautions having been taken, the emissions of
the station should, nevertheless, interfere with a transmission
already in progress, the following rules shall be applied:
- 4715 a) the ship station whose emission causes interference
to the communication of a mobile station with a
coast station shall cease sending at the first request
of the coast station;
- 4716 b) the ship station whose emission causes interference
to communications already in progress between
mobile stations shall cease sending at the first
request of one of the other stations;
- 4717 c) the station which requests this cessation shall indi-
cate the approximate waiting time imposed on the
station whose emission it suspends.

4718

A. General

4719

SUP

Mob-87

4720 § 6. (1) As a general rule, it rests with the ship station to establish communication with the coast station. For this purpose, the ship station may call the coast station only when it comes within the service area of the latter, that is to say, that area within which, by using an appropriate frequency, the ship station can be heard by the coast station.

4721 (2) However, a coast station having traffic for a ship station may call this station if it has reason to believe that the ship station is keeping watch and is within the service area of the coast station.

4722 § 7. (1) In addition, each coast station shall, so far as practicable, transmit its calls in the form of "traffic lists" consisting of the call signs in alphabetical order of all ship stations for which it has traffic on hand. These calls are made at specified times fixed by agreement between the administrations concerned and at intervals of at least two hours and not more than four hours during the working hours of the coast station.

4723 (2) In the bands between 4 000 kHz and 27 500 kHz, however, traffic lists may be transmitted at intervals of not less than one hour.

4724 (3) Continuous or frequently repeated emissions of its call sign or of the enquiry signal CQ by a coast station should be avoided (see Nos. 1799 to 1803).

4725 (4) However, in the bands between 4 000 kHz and 27 500 kHz, a coast station may transmit its call sign at intervals, using type A1A transmission, to enable ship stations to select the calling band with the most favourable propagation characteristics for reliable communication (see No. 4261).

4726 (5) Coast stations shall transmit their traffic lists on their normal working frequencies in the appropriate bands. This transmission shall be preceded by a general call to all stations (CQ).

4727 (6) The call to all stations announcing the traffic list may be sent on a calling frequency in the following form:

- CQ, not more than three times;
- the word DE;
- the call sign of the calling station, not more than three times;
- QSW followed by the indication of the working frequency or frequencies on which the traffic list is about to be sent.

In no case may this preamble be repeated.

4728 (7) The provisions of No. **4727**:

4729 a) are obligatory when 500 kHz is used;

4730 b) do not apply when frequencies in the bands between 4 000 kHz and 27 500 kHz are used.

4731 (8) The hours at which coast stations transmit their traffic lists and the frequencies and classes of emission which they use for this purpose shall be stated in the List of Coast Stations.

4732 (9) Ship stations should, as far as possible, listen to the traffic lists transmitted by coast stations. On hearing their call sign in such a list they shall reply as soon as they can do so.

4733 (10) When the traffic cannot be sent immediately, the coast station shall inform each ship station concerned of the probable time at which working can begin, and also, if necessary, the frequency and class of emission which will be used.

- 4734** § 8. When a coast station receives calls from several ship stations at practically the same time, it decides the order in which these stations may transmit their traffic. Its decision shall be based on the priority (see No. **4441**) of the radiotelegrams that ship stations have on hand and on the need for allowing each calling station to clear the greatest possible number of communications.
- 4735** § 9. (1) When a station called does not reply to a call sent three times at intervals of two minutes, the calling shall cease and shall not be renewed until after an interval of fifteen minutes.
- 4736** (2) In the case of a communication between a station of the maritime mobile service and an aircraft station, calling may be renewed after an interval of five minutes, notwithstanding No. **4735**.
- 4737** (3) Before renewing the call, the calling station shall ascertain that the station called is not in communication with another station.
- 4738** (4) If there is no reason to believe that harmful interference will be caused to other communications in progress, the provisions of Nos. **4146** and **4735** are not applicable. In such cases the call, sent three times at intervals of two minutes, may be repeated after an interval of less than fifteen minutes but not less than three minutes.
- 4739** § 10. Ship stations shall not radiate a carrier wave between calls.
- 4740** § 11. When the name and address of the administration or private operating agency controlling a ship station are not given in the appropriate list of stations or are no longer in agreement with the particulars given therein, it is the duty of the ship station to furnish as a matter of regular procedure, to the coast station to which it transmits traffic, all the necessary information in this respect.
- 4741** § 12. (1) The coast station may, by means of the abbreviation TR, ask the ship station to furnish it with the following information:
- 4742** a) position and, whenever possible, course and speed;
- 4743** b) next port of call.

- 4744** (2) The information referred to in Nos. **4741** to **4743**, preceded by the abbreviation TR, should be furnished by ship stations whenever this seems appropriate, without prior request from the coast station. The provision of this information is authorized only by the master or person responsible for the ship or other vessel carrying the ship station.

4745 *B. Calls to Several Stations*

4746 SUP
Mob-87

4747 § 14. Two types of calling signal "to all stations" are recognized:

4748 a) call CQ followed by the letter K (see Nos. **4750** and **4751**);

4749 b) call CQ not followed by the letter K (see No. **4752**).

4750 § 15. Stations desiring to enter into communication with stations of the maritime mobile service without, however, knowing the names of any such stations within their service area may use the enquiry signal CQ in place of the call sign of the station called in the calling formula, the call being followed by the letter K (general call to all stations in the maritime mobile service with request for reply).

4751 § 16. In regions where traffic is congested, the use of the call CQ followed by the letter K is forbidden. As an exception it may be used with signals denoting urgency.

4752 § 17. The call CQ not followed by the letter K (general call to all stations without request for reply) is used before the transmission of information of any kind intended to be read or used by anyone who can intercept it.

4753 § 18. The call CP followed by two or more call signs or by a code word (call to certain receiving stations without request for reply) is used only for the transmission of information of any nature intended to be read or used by the persons authorized.

**Section IV. Method of Calling, Reply to Calls
and Signals Preparatory to Traffic**

4754 *A. Method of Calling — Morse Telegraphy*

4755 § 19. (1) The call consists of:

- the call sign of the station called, not more than twice;
- the word DE;
- the call sign of the calling station, not more than twice;
- the information required by No. **4761** and, as appropriate, by Nos. **4764** and **4765**;
- the letter K.

4756 (2) For normal calling, when the requirements of No. **4261** have been met, the call specified in No. **4755** may be transmitted twice at an interval of not less than one minute; thereafter it shall not be repeated until after an interval of three minutes.

4757 *B. Frequency to Be Used for Calling
and for Preparatory Signals*

4758 § 20. (1) For making the call and for transmitting preparatory signals, the calling station shall use a frequency on which the station called keeps watch.

4759 (2) A ship station calling a coast station in any of the frequency bands between 4 000 kHz and 27 500 kHz shall use a frequency in the calling band specially reserved for this purpose.

4760 *C. Indication of the Frequency
to Be Used for Traffic*

4761 § 21. (1) The call, as described in No. **4755**, shall contain the service abbreviation indicating the working frequency and, if useful, the class of emission which the calling station proposes to use for the transmission of its traffic.

- 4762** (2) When the call by a coast station does not contain an indication of the frequency to be used for the traffic, this indicates that the coast station proposes to use for traffic its normal working frequency shown in the List of Coast Stations.

4763 *D. Indication of Priority, of the Reason for the Call, and of Transmission of Radiotelegrams in Series*

- 4764** § 22. (1) The calling station shall transmit the service abbreviation after the above-mentioned preparatory signals to indicate a priority message other than a distress, urgency or safety message (see No. **4441**) and to indicate the reason for the call.

- 4765** (2) Moreover, when the calling station wishes to send its radiotelegrams in series, it shall indicate this by adding the service abbreviation for requesting the consent of the station called.

4766 *E. Form of Reply to Calls*

- 4767** § 23. The reply to calls consists of:
- the call sign of the calling station, not more than twice;
 - the word DE;
 - the call sign of the station called, once only.

4768 *F. Frequency for Reply*

- 4769** § 24. Except as otherwise provided in these Regulations, for transmitting the reply to calls and to preparatory signals, the station called shall use the frequency on which the calling station keeps watch, unless the calling station has specified a frequency for the reply.

4770 *G. Agreement on the Frequency
to Be Used for Traffic*

4771 § 25. (1) If the station called is in agreement with the calling station, it shall transmit:

- 4772** a) the reply to the call;
- 4773** b) the service abbreviation indicating that from that moment onwards it will listen on the working frequency announced by the calling station;
- 4774** c) if necessary, the indications referred to in No. **4783**;
- 4775** d) if useful, the service abbreviation and figure indicating the strength and/or intelligibility of the signals received (see Appendix 14);
- 4776** e) the letter K if the station called is ready to receive the traffic of the calling station.

4777 (2) If the station called is not in agreement with the calling station on the working frequency to be used, it shall transmit:

- 4778** a) the reply to the call;
- 4779** b) the service abbreviation indicating the working frequency to be used by the calling station and, if necessary, the class of emission;
- 4780** c) if necessary, the indications specified in No. **4783**.

4781 (3) When agreement is reached regarding the working frequency which the calling station shall use for its traffic, the station called shall transmit the letter K after the indications contained in its reply.

4782 *H. Reply to the Request
for Transmission by Series*

4783 § 26. The station called, in replying to a calling station which has proposed to transmit its radiotelegrams by series (see No. **4765**), shall indicate, by means of the service abbreviation, its acceptance or refusal. In the former case it shall specify, if necessary, the number of radiotelegrams which it is ready to receive in one series.

4784

I. Difficulties in Reception

4785

§ 27. (1) If the station called is unable to accept traffic immediately, it shall reply to the call as indicated in Nos. 4771 to 4776, but it shall replace the letter K by the signal · — · · · (wait), followed by a number indicating in minutes the probable duration of the waiting time. If the probable duration exceeds ten minutes (five minutes in the case of an aircraft station communicating with a station of the maritime mobile service), the reason for the delay shall be given.

4786

(2) When a station receives a call without being certain that such a call is intended for it, it shall not reply until the call has been repeated and understood. When, on the other hand, a station receives a call which is intended for it but is uncertain of the call sign of the calling station, it shall reply immediately using the service abbreviation in place of the call sign of this latter station.

Section V. Forwarding (Routing) of Traffic

4787

A. Traffic Frequency

4788

§ 28. (1) As a general rule, a station of the maritime mobile service shall transmit its traffic on one of its working frequencies in that band in which the call has been made.

4789

(2) In addition to its normal working frequency, printed in heavy type in the List of Coast Stations, a coast station may use one or more supplementary frequencies in the same band, in accordance with the provisions of Article 60.

4790

(3) The use of frequencies reserved for calling shall be forbidden for traffic, except distress traffic (see Chapter IX).

4791 (4) If the transmission of a radiotelegram is to take place on a frequency and/or with a class of emission other than those used for the call, the transmission of the radiotelegram shall be preceded by:

- the call sign of the station called, not more than twice;
- the word DE;
- the call sign of the calling station, once only.

4792 (5) If the transmission is to be made on the same frequency and with the same class of emission as the call, the transmission of the radiotelegram shall be preceded, if necessary, by:

- the call sign of the station called;
- the word DE;
- the call sign of the calling station.

4793 *B. Numbering in Daily Series*

4794 § 29. (1) As a general rule, radiotelegrams of all kinds transmitted by ship stations shall be numbered in a daily series; number 1 shall be given to the first radiotelegram sent each day to each separate station.

4795 (2) A series of numbers which has begun in radiotelegraphy should be continued in radiotelephony and vice versa.

4796 *C. Long Radiotelegrams*

4797 § 30. (1) In cases where both stations are able to change from sending to receiving without manual switching, the transmitting station may continue to send until completion of the message or until the receiving station breaks in on the transmission with the service abbreviation BK. Before commencing, both stations normally agree on such a method of working by means of the abbreviation QSK.

4798 (2) If this method of working cannot be employed, long radiotelegrams, whether in plain language or in secret language, shall, as a general rule, be transmitted in sections, each section containing fifty words in the case of plain language and twenty words or groups if secret language is used.

- 4799 (3) At the end of each section the signal · · — — · · (?) meaning “Have you received the radiotelegram correctly up to this point?” shall be transmitted. If the section has been correctly received, the receiving station shall reply by sending the letter K and the transmission of the radiotelegram shall be continued.

4800 *D. Suspension of Traffic*

- 4801 § 31. When a ship station transmits on a working frequency of a coast station and causes interference with the transmission of such a coast station, it shall suspend working at the first request of the latter.

Section VI. End of Traffic and Work

4802 *A. Signal for the End of Transmission*

- 4803 § 32. (1) The transmission of a radiotelegram shall be terminated by the signal · — · — · (end of transmission), followed by the letter K.
- 4804 (2) In the case of transmission by series, the end of each radiotelegram shall be indicated by the signal · — · — · (end of transmission) and the end of the series by the letter K.

4805 *B. Acknowledgement of Receipt*

- 4806 § 33. (1) The acknowledgement of receipt of a radiotelegram or a series of radiotelegrams shall be given by the receiving station in the following manner:
- the call sign of the sending station;
 - the word DE;
 - the call sign of the receiving station;
 - the letter R followed by the number of the radiotelegram; *or*
 - the letter R followed by the number of the last radiotelegram of a series.
- 4807 (2) The acknowledgement of receipt shall be transmitted by the receiving station on the traffic frequency (see Nos. 4788 and 4789).

4808

C. End of Work

4809 § 34. (1) The end of work between two stations shall be indicated by each of them by means of the signal . . . — . — (end of work).

4810 (2) The signal . . . — . — (end of work) shall also be used:

- when the transmission of radiotelegrams of general information, meteorological information and general safety notices is finished;
- when transmission is ended in long-distance radio-communication services with deferred acknowledgement of receipt or without acknowledgement of receipt.

Section VII. Control of Working

4811 § 35. The provisions of this Section are not applicable in cases of distress, urgency or safety (see No. 4710).

4812 § 36. In communications between coast stations and ship stations, the ship station shall comply with the instructions given by the coast station, in all questions relating to the order and time of transmission, to the choice of frequency and class of emission, and to the duration and suspension of work.

4813 § 37. In communications between ship stations, the station called shall control the working in the manner indicated in No. 4812. However, if a coast station finds it necessary to intervene, these stations shall comply with the instructions given by the coast station.

Section VIII. Tests

4814 § 38. When it is necessary for a ship station to send signals for testing or adjustment which are liable to interfere with the working of neighbouring coast stations, the consent of these stations shall be obtained before such signals are sent.

4815 § 39. When it is necessary for a station in the maritime mobile service to make test signals, either for the adjustment of a transmitter before making a call or for the adjustment of a receiver, such signals shall not be continued for more than ten seconds and shall be composed of a series of VVV followed by the call sign of the station emitting the test signals.

4816
to
4840 NOT allocated.

ARTICLE 64

**General Procedures for Narrow-Band Direct-Printing Telegraphy
in the Maritime Mobile Service ¹**

Section I. General

4841 § 1. Stations using narrow-band direct-printing telegraphy shall comply with the provisions of Articles **59** and **60**.

4842 § 2. The procedures specified in the present Article should be employed except in cases of distress, urgency or safety.

4842A § 2A. Before transmitting, a station shall take precautions to
Mob-87 ensure that its emissions will not interfere with transmissions already in progress; if such interference is likely, the station shall await an appropriate break in the communications in progress. This obligation does not apply to stations where unattended operation is possible through automatic means (see No. **3863**).

4843 SUP
Mob-87

4844 § 3. (1) For communication between two stations the ARQ mode should be used when available.

4845 (2) For transmissions from one coast or ship station to two or more other stations the forward-error-correcting mode should be used when available.

4846 § 4. The services provided by each station open to public correspondence shall be indicated in the List of Coast Stations and in the List of Ship Stations, together with information on charging.

¹ Reference may also be made to the relevant CCIR Recommendations.

- 4847 § 5. Where transmission over the telecommunication channels open to public correspondence (excluding the telecommunication channels of the mobile service and of the mobile-satellite service and its feeder links) is involved, the provisions of the Telegraph Regulations and the relevant CCITT Recommendations should be taken into account.

Section II. Procedures for Manual Operation

4848 *A. General*

- 4849 § 6. When using direct-printing telegraphy or similar systems in any of the frequency bands allocated to the maritime mobile service, the call may, by prior arrangement, be made on a working frequency available for such systems.

4850 *B. Ship to Coast Station*

- 4851 § 7. (1) The operator of the ship station establishes communication with the coast station by A1A Morse telegraphy, telephony or by other means using normal calling procedures. The operator then requests direct-printing communication, exchanges information regarding the frequencies to be used and, when applicable, gives the ship station the direct-printing selective call number assigned in accordance with Appendix 38, or the ship station identity assigned in accordance with Appendix 43.

- 4852 (2) The operator of the coast station then establishes direct-printing communication on the frequency agreed, using the appropriate identification of the ship.

- 4853 § 8. (1) Alternatively the operator of the ship station, using the direct-printing equipment, calls the coast station on a predetermined coast station receive frequency using the identification of the coast station assigned in accordance with Appendix 38, or the coast station identity assigned in accordance with Appendix 43.

4854 (2) The operator of the coast station then establishes direct-printing communication on the corresponding coast station transmit frequency.

4855 *C. Coast Station to Ship*

4856 § 9. (1) The operator of the coast station calls the ship station by A1A Morse telegraphy, telephony or other means, using normal calling procedures.

4857 (2) The operator of the ship station then applies the procedures of No. **4851** or **4853**.

4858 *D. Intership*

4859 § 10. (1) The operator of the calling ship station establishes
Mob-87 communication with the called ship station by A1A Morse telegraphy, telephony, or by other means, using normal calling procedures. The operator then requests direct-printing communication, exchanges information regarding the frequencies to be used and, when applicable, gives the direct-printing selective call number of the calling ship station assigned in accordance with Appendix **38**, or the ship station identity assigned in accordance with Appendix **43**.

4860 (2) The operator of the called ship station then establishes direct-printing communication on the frequency agreed, using the appropriate identification of the calling ship.

Section III. Procedures for Automatic Operation

4861 *A. Ship to Coast Station*

4862 § 11. (1) The ship station calls the coast station on a predetermined
Mob-87 coast station receive frequency, using the direct-printing equipment and the identification signal of the coast station assigned in accordance with Appendix **38**, or the coast station identity assigned in accordance with Appendix **43**.

- 4863** (2) The coast station's direct-printing equipment detects the call and the coast station responds directly on the corresponding coast station transmit frequency, either automatically or under manual control.

4864 *B. Coast Station to Ship*

- 4865** § 12. (1) The coast station calls the ship station on a predetermined coast station transmit frequency, using the direct-printing equipment and the ship station direct-printing selective call number assigned in accordance with Appendix 38, or the ship station identity assigned in accordance with Appendix 43.

- 4866** (2) The ship station's direct-printing equipment tuned to receive the predetermined coast station transmit frequency detects the call, whereupon the reply is given in one of the following ways:

- 4867** a) the ship station replies either immediately on the corresponding coast station receive frequency or at a later stage, using the procedure of No. 4853; *or*
- 4868** b) the ship station's transmitter is automatically started on the corresponding coast station receive frequency and the direct-printing equipment responds by sending appropriate signals to indicate readiness to receive traffic automatically.

Section IV. Message Format

- 4869** § 13. Where the appropriate facilities are provided by the coast station, traffic may be exchanged with the telex network:

- 4870** a) in a conversational mode where the stations concerned are connected directly, either automatically or under manual control; *or*

4871 *b)* in a store-and-forward mode where traffic is stored at the coast station until the circuit to the called station can be set up, either automatically or under manual control.

4872 § 14. In the shore-to-ship direction, the message format should conform to normal telex network practice.

4873 § 15. In the ship-to-shore direction, the message format
Mob-87 should conform to the operational procedures specified in the relevant CCIR Recommendations.

4874 and 4875 SUP
Mob-87

Section V. Procedures for Operation in the Forward-Error-Correcting Mode

4876 § 16. Messages in the forward-error-correcting mode may be sent, by prior arrangement, from a coast station or a ship station to one or more ship stations in the following cases:

4877 *a)* where a receiving ship station is not able to use its transmitter or is not permitted to do so;

4878 *b)* where the message is intended for more than one ship;

4879 *c)* where unattended reception of a message in the forward-error-correcting mode is necessary and automatic acknowledgement is not required.

4880 § 17. All messages in the forward-error-correcting mode should be preceded by at least one carriage return and a line feed signal.

4881 § 18. Ship stations may acknowledge the reception of messages in the forward-error-correcting mode by A1A Morse telegraphy, telephony or by other means.

4882
to NOT allocated.
4902

ARTICLE 65

General Radiotelephone Procedure in the Maritime Mobile Service**Section I. General Provisions**

- 4903** § 1. The procedure detailed in this Article is applicable to radiotelephone stations, except in cases of distress, urgency or safety, to which the provisions of Chapter **IX** are applicable.
- 4904** § 2. (1) The service of ship radiotelephone stations shall be
Mob-87 performed or controlled by an operator satisfying the conditions specified in Article **55**.
- 4905** (2) For the call signs or other means of identification for coast or ship radiotelephone stations see Article **25**.
- 4906** § 3. The radiotelephone public correspondence service provided on ships should, if possible, be operated on a duplex basis.
- 4907** § 4. (1) Devices providing for the emission of a signal to indicate that a call is in progress on a channel may be used in this service on a non-interference basis to the service provided by coast stations.
- 4908** (2) The use of devices for continuous or repetitive calling or
Mob-87 identification in a manually operated radiotelephony service is not permitted.
- 4909** (3) A station may not transmit identical information simultaneously on two or more frequencies when communicating with only one other station.
- 4910** (4) A station shall not emit any carrier wave between calls.
Mob-87 However, stations in an automatically operated radiotelephone system may emit marking signals under the conditions provided for in No. **4326A**.

- 4911** (5) Radiotelephone stations should, as far as possible, be equipped with devices for instantaneous switching from transmission to reception and vice versa. This equipment is necessary for all stations participating in communication between ships and subscribers of the land telephone system.
- 4912** § 5. (1) Stations equipped for radiotelephony may transmit and receive radiotelegrams by means of radiotelephony. Coast stations providing such service and open for public correspondence shall be indicated in the List of Coast Stations.
- 4913** (2) To facilitate radiocommunications the service abbreviations given in Appendix 14 may be used.
- 4914** (3) When it is necessary to spell out certain expressions, difficult words, service abbreviations, figures, etc., the phonetic spelling tables in Appendix 24 shall be used.

Section II. Preliminary Operations

- 4915** § 6. (1) Before transmitting, a station shall take precautions to ensure that its emissions will not interfere with transmissions already in progress; if such interference is likely, the station shall await an appropriate break in the working.
- 4916** (2) If, these precautions having been taken, the emissions of the station should nevertheless interfere with a transmission already in progress, the following rules shall be applied:
- 4917** a) the ship station whose emission causes interference to the communication of a mobile station with a coast station shall cease sending at the first request of the coast station;

- 4918 b) the ship station whose emission causes interference to communications already in progress between mobile stations shall cease sending at the first request of one of the other stations;
- 4919 c) the station which requests this cessation shall indicate the approximate waiting time imposed on the station whose emission it suspends.

Section III. Calls by Radiotelephony

- 4920 § 7. The provisions of this Section relating to the intervals between calls are not applicable to a station operating under conditions involving distress, urgency or safety.

4921 SUP
Mob-87

- 4922 § 8. (1) As a general rule, it rests with the ship station to establish communication with the coast station. For this purpose the ship station may call the coast station only when it comes within the service area of the latter, that is to say, that area within which, by using an appropriate frequency, the ship station can be heard by the coast station.

- 4923 (2) However, a coast station having traffic for a ship station may call this station if it has reason to believe that the ship station is keeping watch and is within the service area of the coast station.

- 4924 § 9. (1) In addition, each coast station shall, so far as practicable, transmit its calls in the form of "traffic lists" consisting of the call signs or other identification in alphabetical order of all ship stations for which it has traffic on hand. These calls shall be made at specified times fixed by agreement between the administrations concerned and at intervals of not less than two hours and not more than four hours during the working hours of the coast station.

- 4925 (2) Coast stations shall transmit their traffic lists on their normal working frequencies in the appropriate bands. The transmission shall be preceded by a general call to all stations.

4926 (3) The general call to all stations announcing the traffic lists may be sent on a calling frequency in the following form:

- “Hello all ships” or CQ (spoken as CHARLIE QUEBEC) not more than three times;
- the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
- “... Radio” not more than three times;
- “Listen for my traffic list on ... kHz”.

In no case may this preamble be repeated.

4927 (4) However, in the bands between 156 MHz and 174 MHz when the conditions for establishing contact are good, the call described in No. **4926** may be replaced by:

- “Hello all ships” or CQ (spoken as CHARLIE QUEBEC), once;
- the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
- “... Radio”, twice;
- “Listen for my traffic list on channel ...”.

In no case may this preamble be repeated.

4928 (5) The provisions of No. **4926** are obligatory when 2 182 kHz or 156.8 MHz is used.

4929 (6) The hours at which coast stations transmit their traffic lists and the frequencies and classes of emission which they use for this purpose shall be stated in the List of Coast Stations.

4930 (7) Ship stations should as far as possible listen to the traffic lists transmitted by coast stations. On hearing their call sign or other identification in such a list they must reply as soon as they can do so.

- 4931** (8) When the traffic cannot be sent immediately, the coast station shall inform each ship station concerned of the probable time at which working can begin, and also, if necessary, the frequency and class of emission which will be used.
- 4932** § 10. When a coast station receives calls from several ship stations at practically the same time, it decides the order in which these stations may transmit their traffic. Its decision shall be based on the priority (see No. **4441**) of the radiotelegrams or radiotelephone calls that the ship stations have on hand and on the need for allowing each calling station to clear the greatest possible number of communications.
- 4933** § 11. (1) When a station called does not reply to a call sent three times at intervals of two minutes, the calling shall cease.
- 4934** (2) However, when a station called does not reply, the call may be repeated at three-minute intervals.
- 4935** (3) In areas where reliable VHF communication with a called coast station is practicable, the calling ship station may repeat the call as soon as it is ascertained that traffic has been terminated at the coast station.
- 4936** (4) In the case of a communication between a station of the maritime mobile service and an aircraft station, calling may be renewed after an interval of five minutes.
- 4937** (5) Before renewing the call, the calling station shall ascertain that the station called is not in communication with another station.
- 4938** (6) If there is no reason to believe that harmful interference will be caused to other communications in progress, the provisions of No. **4936** are not applicable. In such cases the call, sent three times at intervals of two minutes, may be repeated after an interval of not less than three minutes.

4939 (7) However, before renewing the call, the calling station shall ascertain that further calling is unlikely to cause interference to other communications in progress and that the station called is not in communication with another station.

4940 (8) Ship stations shall not radiate a carrier wave between calls.

4941 § 12. When the name and address of the administration or private operating agency controlling a ship station are not given in the appropriate list of stations or are no longer in agreement with the particulars given therein, it is the duty of the ship station to furnish as a matter of regular procedure, to the coast station to which it transmits traffic, all the necessary information in this respect.

4942 § 13. (1) The coast station may, by means of the abbreviation TR (spoken as TANGO ROMEO), ask the ship station to furnish it with the following information:

4943 a) position and, whenever possible, course and speed;

4944 b) next port of call.

4945 (2) The information referred to in Nos. **4942** to **4944**, preceded by the abbreviation TR, should be furnished by ship stations, whenever this seems appropriate, without prior request from the coast station. The provision of this information is authorized only by the master or the person responsible for the ship.

Mob-87 **Section IV. Method of Calling, Reply to Calls and
Signals Preparatory to Traffic when Using Calling
Methods Other than Digital Selective Calling**

4946 *A. Method of Calling*

4947 § 14. (1) The call consists of:

- the call sign or other identification of the station called, not more than three times;

- the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
- the call sign or other identification of the calling station, not more than three times.

4948 (2) However, in the bands between 156 MHz and 174 MHz when the conditions for establishing contact are good, the call described in No. **4947** may be replaced by:

- the call sign of the station called, once;
- the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
- the call sign or other identification of the calling station, twice.

4949 (3) When calling a VHF coast station operating on more than one channel, a ship station calling on a working channel should include the number of that channel in the call.

4950 (4) When contact is established, the call sign or other identification may thereafter be transmitted once only.

4951 (5) When the coast station is fitted with equipment for selective calling in accordance with Section II of Article **62**, and the ship station is fitted with equipment for receiving such selective calls, the coast station shall call the ship by transmitting the appropriate code signals. The ship station shall call the coast station by speech in the manner given in No. **4947** (see also Section II of Article **62**).

4952 § 15. Calls for internal communications on board ship when in territorial waters shall consist of:

4953 a) From the master station:

- the name of the ship followed by a single letter (ALFA, BRAVO, CHARLIE, etc.) indicating the sub-station not more than three times;

- the words THIS IS;
- the name of the ship followed by the word CONTROL;

4954

- b)* From the sub-station:
 - the name of the ship followed by the word CONTROL not more than three times;
 - the words THIS IS;
 - the name of the ship followed by a single letter (ALFA, BRAVO, CHARLIE, etc.) indicating the sub-station.

4955

*B. Frequency to Be Used for Calling
and for Preparatory Signals*

4956

B1. Bands Between 1 605 kHz and 4 000 kHz

4957

§ 16. (1) A radiotelephone ship station calling a coast station should use for the call, in order of preference:

4958

- a)* a working frequency on which the coast station is keeping watch;

4959

- b)* the carrier frequency 2 182 kHz;

4960

- c)* in Regions 1 and 3 and in Greenland, the carrier frequency 2 191 kHz (assigned frequency 2 192.4 kHz) when a carrier frequency of 2 182 kHz is being used for distress;

4960A

Mob-87

- d)* in Region 2 except for Greenland, the carrier frequency 2 191 kHz as a supplementary calling frequency in those areas of heavy usage of 2 182 kHz.

4961

(2) A radiotelephone ship station calling another ship station should use for the call:

4962

- a)* the carrier frequency 2 182 kHz;

4963

- b)* an intership frequency, whenever and wherever traffic density is high and prior arrangements can be made.

4964 (3) Subject to the provisions of No. **4967**, coast stations shall, in accordance with the requirements of their own country, call ship stations of their own nationality either on a working frequency or, when calls to individual ships are made, on the carrier frequency 2 182 kHz.

4965 (4) However, a ship station which keeps watch simultaneously on the carrier frequency 2 182 kHz and a working frequency should be called on the working frequency.

4966 (5) As a general rule, coast stations should call radiotelephone ship stations of another nationality on the carrier frequency 2 182 kHz.

4967 (6) Coast stations may call ship stations equipped to receive selective calls in accordance with the provisions of Article **62**.

4968 B2 Bands Between 4 000 kHz
Mob-87 and 27 500 kHz

4969 § 17. (1) A ship station calling a coast station by radiotelephony shall use either one of the calling frequencies mentioned in No. **4375** or the working frequency associated with that of the coast station, in accordance with Appendix **16**, Section A.

4970 (2) A coast station calling a ship station by radiotelephony
Mob-87 shall use one of the calling frequencies mentioned in No. **4376**, one of its working frequencies shown in the List of Coast Stations, or the carrier frequency 4 125 kHz or 6 215 kHz, in accordance with the provisions of Nos. **4375.2** and **4375.3**.

4971 (3) The preliminary operations for the establishment of radiotelephone communications may also be carried out by radiotelegraphy using the procedure appropriate to radiotelegraphy (see Nos. **4758** and **4759**).

4972 (4) The provisions of Nos. **4969** and **4970** do not apply to communications between ship stations and coast stations using the simplex frequencies specified in Appendix **16**, Section B.

4973 B3. Bands Between 156 MHz and 174 MHz

4974 § 18. (1) In the bands between 156 MHz and 174 MHz, intership and coast station to ship calling should, as a general rule, be made on 156.8 MHz. However, coast station to ship calling may be conducted on a working channel or on a two-frequency calling channel which has been implemented in accordance with No. **4391**. Except for distress, urgency or safety communications, when 156.8 MHz should be used, ship to coast station calling should, whenever possible, be made on a working channel or on a two-frequency calling channel which has been implemented in accordance with No. **4391**. Ships wishing to participate in a port operations service or ship movement service should call on a port operations or ship movement working frequency, indicated in heavy type in the List of Coast Stations.

4975 (2) When 156.8 MHz is being used for distress, urgency or safety communications, a ship station desiring to participate in the port operations service may establish contact on 156.6 MHz, or another port operations frequency indicated in heavy type in the List of Coast Stations.

4976 B4. Procedure for Calling a Station
Providing Pilot Service

4977 § 19. A radiotelephone ship station calling a station providing pilot service should use for the call, in order of preference:

4978 a) an appropriate channel in the bands between 156 MHz and 174 MHz;

- 4979 b) a working frequency in the bands between 1 605 kHz and 4 000 kHz;
- 4980 c) the carrier frequency 2 182 kHz, and then only to determine the working frequency to be used.

4981 *C. Form of Reply to Calls*

- 4982 § 20. The reply to calls consists of:
- the call sign or other identification of the calling station, not more than three times;
 - the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
 - the call sign or other identification of the station called, not more than three times.

4983 *D. Frequency for Reply*

4984 D1. Bands Between 1 605 kHz and 4 000 kHz

- 4985 § 21. (1) When a ship station is called on the carrier frequency 2 182 kHz, it should reply on the same carrier frequency unless another frequency is indicated by the calling station.

- 4986 (2) When a ship station is called by selective calling in
Mob-87 accordance with Section II of Article 62, it shall reply on a frequency on which the coast station keeps watch.

- 4987 (3) When a ship station is called on a working frequency by a coast station of the same nationality, it shall reply on the working frequency normally associated with the frequency used by the coast station for the call.

- 4988 (4) When calling a coast station or another ship station, a ship station shall indicate the frequency on which a reply is required if this frequency is not the normal one associated with the frequency used for the call.

4989 (5) A ship station which frequently exchanges traffic with a coast station of another nationality may use the same procedure for reply as ships of the nationality of the coast station, where this has been agreed by the administrations concerned.

4990 (6) As a general rule a coast station shall reply:

4991 a) on the carrier frequency 2 182 kHz to calls made on the carrier frequency 2 182 kHz, unless another frequency is indicated by the calling station;

4992 b) on a working frequency to calls made on a working frequency;

4993 c) on a working frequency to calls made in Regions 1 and 3 and in Greenland on the carrier frequency 2 191 kHz (assigned frequency 2 192.4 kHz).

4994 D2 Bands Between 4 000 kHz and
Mob-87 27 500 kHz

4995 § 22. (1) A ship station called by a coast station shall reply either on one of the calling frequencies mentioned in No. **4375** or on the working frequency associated with that of the coast station, in accordance with Appendix **16**, Section A.

4996 (2) A coast station called by a ship station shall reply on one of the calling frequencies mentioned in No. **4376**, or on one of its working frequencies shown in the List of Coast Stations.

4997 (3) When a station is called on the carrier frequency 4 125 kHz it should reply on the same frequency unless another frequency is indicated for that purpose by the calling station.
Mob-83

4998 (4) When a station is called on the carrier frequency 6 215 kHz it should reply on the same frequency unless another frequency is indicated for that purpose by the calling station.
Mob-87

4999 (5) The provisions of Nos. **4995** and **4996** do not apply to communication between ship stations and coast stations using the simplex frequencies specified in Appendix **16**, Section B.

5000 D3. Bands Between 156 MHz and 174 MHz

5001 § 23. (1) When a station is called on 156.8 MHz it should reply on the same frequency unless another frequency is indicated by the calling station.

5002 (2) When a coast station open to public correspondence
Mob-87 calls a ship either by speech or by selective calling in accordance with Section II of Article **62**, using a two-frequency channel, the ship station shall reply by speech on the frequency associated with that of the coast station; conversely, a coast station shall reply to a call from a ship station on the frequency associated with that of the ship station.

5003 E. *Indication of the Frequency to Be Used for Traffic*

5004 E1. Bands Between 1 605 kHz and 4 000 kHz

5005 § 24. If contact is established on the carrier frequency 2 182 kHz, coast and ship stations shall transfer to working frequencies for the exchange of traffic.

5006 E2. Bands Between 4 000 kHz
Mob-87 and 27 500 kHz

5007 § 25. After a ship station has established contact with a coast station, or another ship station, on the calling frequency of the band chosen, traffic shall be exchanged on their respective working frequencies.

5008 E3. Bands Between 156 MHz and 174 MHz

5009 § 26. (1) Whenever contact has been established between a coast station in the public correspondence service and a ship station either on 156.8 MHz or on a two-frequency calling channel (see No. 4392), the stations shall transfer to one of their normal pairs of working frequencies for the exchange of traffic. The calling station should indicate the channel to which it is proposed to transfer by reference to the frequency in MHz or, preferably, to its channel designator.

5010 (2) When contact on 156.8 MHz has been established between a coast station in the port operations service and a ship station, the ship station should indicate the particular service required (such as navigational information, docking instructions, etc.) and the coast station shall then indicate the channel to be used for the exchange of traffic by reference to the frequency in MHz, or, preferably, to its channel designator.

5011 (3) When contact on 156.8 MHz has been established between a coast station in the ship movement service and a ship station, the coast station shall then indicate the channel to be used for the exchange of traffic by reference to the frequency in MHz or, preferably, to its channel designator.

5012 (4) A ship station, when it has established contact with another ship station on 156.8 MHz, should indicate the intership channel to which it is proposed to transfer for the exchange of traffic by reference to the frequency in MHz or, preferably, to its channel designator.

5013 (5) However, a brief exchange of traffic not to exceed one minute concerning the safety of navigation need not be transmitted on a working frequency when it is important that all ships within range receive the transmission.

- 5014** (6) Stations hearing a transmission concerning the safety of navigation shall listen to the message until they are satisfied that the message is of no concern to them. They shall not make any transmission likely to interfere with the message.

5015 *F. Agreement on the Frequency to Be Used for Traffic*

- 5016** § 27. (1) If the station called is in agreement with the calling station, it shall transmit:

- 5017** a) an indication that from that moment onwards it will listen on the working frequency or channel announced by the calling station;
- 5018** b) an indication that it is ready to receive the traffic of the calling station.

- 5019** (2) If the station called is not in agreement with the calling station on the working frequency or channel to be used, it shall transmit an indication of the working frequency or channel proposed.

- 5020** (3) For communications between a coast station and a ship station, the coast station shall finally decide the frequency or channel to be used.

- 5021** (4) When agreement is reached regarding the working frequency or channel which the calling station shall use for its traffic, the station called shall indicate that it is ready to receive the traffic.

5022 *G. Indication of Traffic*

- 5023** § 28. When the calling station wishes to exchange more than one radiotelephone call, or to transmit one or more radiotelegrams, it should indicate this when contact is established with the station called.

5024

H. Difficulties in Reception

5025 § 29. (1) If the station called is unable to accept traffic immediately, it should reply to the call as indicated in No. 4982 followed by "Wait . . . minutes" (or \overline{AS} spoken as ALFA SIERRA . . . (minutes) in case of language difficulties), indicating the probable duration of waiting time in minutes. If the probable duration exceeds ten minutes the reason for the delay shall be given. Alternatively the station called may indicate, by any appropriate means, that it is not ready to receive traffic immediately.

5026 (2) When a station receives a call without being certain that such a call is intended for it, it shall not reply until the call has been repeated and understood.

5027 (3) When a station receives a call which is intended for it, but is uncertain of the identification of the calling station, it shall reply immediately asking for a repetition of the call sign or other identification of the calling station.

Section V. Forwarding (Routing) of Traffic

5028

A. Traffic Frequency

5029 § 30. (1) Every station should transmit its traffic (radiotelephone calls or radiotelegrams) on one of its working frequencies in the band in which the call has been made.

5030 (2) In addition to its normal working frequency, printed in heavy type in the List of Coast Stations, a coast station may use one or more supplementary frequencies in the same band, in accordance with the provisions of Article 60.

5031 (3) The use of frequencies reserved for calling shall be forbidden for traffic, except distress traffic (see Chapter IX).

5032 (4) After contact has been established on the frequency to
be used for traffic, the transmission of a radiotelegram or radiotele-
phone call shall be preceded by:

5033 – the call sign or other identification of the station
called;

5034 – the words THIS IS (or DE spoken as DELTA
ECHO in case of language difficulties);

5035 – the call sign or other identification of the calling
station.

5036 (5) The call sign or other identification need not be sent
more than once.

5037 *B. Establishment of Radiotelephone Calls
and Transmission of Radiotelegrams*

5038 B1. Establishment of Radiotelephone Calls

5039 § 31. (1) In setting up a radiotelephone call, the coast station
should establish connection with the telephone network as quickly as
possible. In the meantime, the ship station shall maintain watch on
the appropriate working frequency as indicated by the coast station.

5040 (2) However, if the connection cannot be quickly estab-
lished, the coast station shall inform the ship station accordingly.
The latter station shall then either:

5041 a) maintain watch on the appropriate frequency until an
effective circuit can be established; or

5042 b) contact the coast station later at a mutually agreed time.

5043 (3) When a radiotelephone call has been completed, the
procedure indicated in No. 5054 shall be applied unless further calls
are on hand at either station.

5044 B2. Transmission of Radiotelegrams

5045 § 32. (1) The transmission of a radiotelegram should be made as follows:

- radiotelegram begins: from ... (name of ship or aircraft);
- number ... (serial number of radiotelegram);
- number of words ... ;
- date ... ;
- time ... (time radiotelegram was handed in aboard ship or aircraft);
- service indicators (if any);
- address ... ;
- text ... ;
- signature ... (if any);
- radiotelegram ends, over.

5046 (2) As a general rule, radiotelegrams of all kinds transmitted by ship stations shall be numbered in a daily series; number 1 shall be given to the first radiotelegram sent each day to each separate station.

5047 (3) A series of numbers which has begun in radiotelegraphy should be continued in radiotelephony and vice versa.

5048 (4) Each radiotelegram should be transmitted once only by the sending station. However, it may, when necessary, be repeated in full or in part by the receiving or the sending station.

5049 (5) In transmitting groups of figures, each figure shall be spoken separately and the transmission of each group or series of groups shall be preceded by the words "in figures".

5050 (6) Numbers written in letters shall be spoken as they are written, their transmission being preceded by the words "in letters".

5051 B3. Acknowledgement of Receipt

5052 § 33. (1) The acknowledgement of receipt of a radiotelegram or a series of radiotelegrams shall be given by the receiving station in the following manner:

- the call sign or other identification of the sending station;

- the words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);
- the call sign or other identification of the receiving station;
- “Your No. . . . received, over” (or R spoken as ROMEO . . . (number), K spoken as KILO in case of language difficulties); *or*
- “Your No. . . . to No. . . . received, over” (or R spoken as ROMEO . . . (numbers), K spoken as KILO in case of language difficulties).

5053 (2) The radiotelegram, or series of radiotelegrams, shall not be considered as cleared until this acknowledgement has been received.

5054 (3) The end of work between two stations shall be indicated by each of them by means of the word “Out” (or \overline{VA} spoken as VICTOR ALFA in case of language difficulties).

Section VI. Duration and Control of Working

5055 § 34. (1) Calling, and signals preparatory to traffic, shall not exceed one minute when made on the carrier frequency 2 182 kHz or on 156.8 MHz, except in cases of distress, urgency or safety to which the provisions of Chapter IX apply.

5056 (2) In communications between coast stations and ship stations, the ship station shall comply with the instructions given by the coast station in all questions relating to the order and time of transmission, to the choice of frequency, and to the duration and suspension of work.

5057 (3) In communications between ship stations, the station called controls the working in the manner indicated in No. 5056. However, if a coast station finds it necessary to intervene, the ship stations shall comply with the instructions given by the coast station.

Section VII. Tests

5058 § 35. When it is necessary for a ship station to send signals for testing or adjustments which are liable to interfere with the working of neighbouring coast stations, the consent of these stations shall be obtained before such signals are sent.

5059 § 36. (1) When it is necessary for a station to make test signals, either for the adjustment of a transmitter before making a call or for the adjustment of a receiver, such signals shall not be continued for more than ten seconds, and shall include the call sign or other identification of the station emitting the test signals. This call sign or other identification shall be spoken slowly and distinctly.

5060 (2) Any signals sent for testing shall be kept to a minimum,
Mob-87 particularly on the frequencies identified in Articles **38** and **N 38** for the maritime mobile and maritime mobile-satellite services for distress and safety purposes.

5061 SUP
Mob-87

Mob-87 Section VIII. Calling, Acknowledgement of Calls, and
Subsequent Exchange of Traffic when Using Digital
Selective Calling Techniques

5062 A. *Method of Calling and Frequencies*
Mob-87 *to be Used for Calling*

5063 § 37. (1) Calling by digital selective calling techniques shall be
Mob-87 carried out in accordance with the provisions of Nos. **4686A**
to **4686H**.

5064 (2) An appropriate digital selective calling channel chosen
Mob-87 in accordance with the provisions of Nos. **4323S** to **4323AB** or
Nos. **4323AJ** to **4323AR**, as appropriate, shall be used for the call.

5065 *B. Acknowledgement of Calls and Agreement*
Mob-87 *on the Frequency to be Used for Traffic*

5066 § 38. (1) Acknowledgement of a received digital selective call and
Mob-87 the exchange of information concerning the frequency to be used
for traffic should be carried out in accordance with the provisions
of Nos. **4687A** to **4688H**

5067 (2) When agreement regarding the working frequency or
Mob-87 channel to be used for the exchange of traffic has been reached in
accordance with the provisions of Nos. **4687A** to **4688H**, the two
stations then transfer to the working frequency or channel agreed
for the exchange of traffic.

5068 *C. Forwarding of Traffic and*
Mob-87 *Control of Working*

5069 § 39. The forwarding of traffic and the control of working
Mob-87 shall be carried out in accordance with the provisions of Nos. **5028**
to **5054**, No. **5056** and No. **5057**.

5070
to NOT allocated.
5084

ARTICLE 66

Mob-87

**Charging and Accounting for Maritime
Radiocommunications in the Maritime Mobile Service
and the Maritime Mobile-Satellite Service ^{1, 2},
except for Distress and Safety Communications**

Section I. General

5085 § 1. The provisions of the Telegraph Regulations and the Telephone Regulations, taking into account CCITT Recommendations, shall apply to radiocommunications in so far as the relevant provisions of these Regulations do not provide otherwise.

Section II. Accounting Authority

5086 § 2. Charges for maritime radiocommunications from ship to
Mob-87 shore shall, in principle, and subject to national law and practice, be collected from the maritime mobile station licensee:

- 5087** a) by the administration that has issued the licence; *or*
- 5088** b) by a recognized private operating agency; *or*
- 5089** c) by any other entity or entities designated for this purpose by the administration referred to in No. **5087**.

A.66.1 ¹ See Resolution **201**.

A.66.2 ² See Resolution **334 (Mob-87)**.
Mob-87

- 5090** § 3. The administration or the recognized private operating agency or the designated entity (or entities) is referred to in this Article as the “accounting authority”.
- 5091** § 4. The name(s) and address(es) of the accounting authority(ies) shall be notified to the Secretary-General of the ITU for inclusion in the List of Ship Stations; the number of such names and addresses shall be limited as far as possible, taking into account CCITT Recommendations.

Section III. Accounting

5092 and 5093 SUP
Mob-87

- 5094** § 7. In principle, an account shall be considered as accepted without the need for specific notification of acceptance to the administration (or recognized private operating agency) that sent it.
- 5095** § 8. However, any accounting authority shall have the right
Mob-87 to question the contents of an account for a period of six months after dispatch of the account, even if the account has been paid.
- 5096** § 9. All maritime radiocommunications accounts shall be
Mob-87 paid by the accounting authority without delay and in any case within six months after dispatch of the account.
- 5097** § 10. If international maritime radiocommunications accounts
Mob-87 remain unpaid after six months, the administration that has licensed the mobile station shall, on request, take all possible steps, within the limits of applicable national law, to ensure settlement of the accounts of the licensee.

5098 § 11. In the case referred to in No. **5095**, if the period
Mob-87 between the date of dispatch and receipt exceeds 21 days, the receiving accounting authority should at once notify the originating administration (or recognized private operating agency) that queries and payment may be delayed. The delay shall, however, not exceed three calendar months in respect of payment, or five calendar months in respect of queries, both periods commencing from the date of receipt of the account.

5099 § 12. The debtor accounting authority may refuse the settle-
Mob-87 ment and adjustment of accounts presented more than eighteen months after the date of the traffic to which the accounts relate.

5100 to 5102 SUP
Mob-87

5103
to NOT allocated.
5127

CHAPTER XII

Mob-87

Land Mobile Service and Land Mobile-Satellite Service

ARTICLE 67

Mob-87

Conditions to Be Observed by Stations in the Land Mobile and Land Mobile-Satellite Services

Mob-87

Section I. Land Mobile Stations in the Land Mobile Service

- 5128** § 1. Land mobile stations shall be established in such a way as to conform to the provisions of Chapter III as regards frequencies and classes of emission.
- 5129** § 2. The frequencies of emission of land mobile stations shall be checked as often as possible by the inspection service to which these stations are subject.
- 5130** § 3. The energy radiated by receiving apparatus shall be reduced to the lowest possible value and shall not cause harmful interference to other stations.
- 5131** § 4. Administrations shall take all practicable steps necessary to ensure that the operation of any electrical or electronic apparatus installed in land mobile stations does not cause harmful interference to the essential radio services of stations which are operating in accordance with the provisions of these Regulations.

5132 and 5133 SUP
Mob-87

Mob-87 **Section II. Land Mobile Earth Stations in the
Land Mobile-Satellite Service**

5134 § 6. Land mobile earth stations in the land mobile-satellite
Mob-87 service shall be established so as to conform to the provisions of Chapter III as regards frequencies and classes of emission.

5135 § 7. The frequencies of emissions of these earth stations shall
Mob-87 be checked as often as practicable by the inspection service to which these stations are subject.

5136 § 8. The energy radiated by receiving apparatus shall be
Mob-87 reduced to the lowest practicable value and shall not cause harmful interference to other stations.

5137 § 9. Administrations shall take all practicable steps necessary
Mob-87 to ensure that the operation of any electrical apparatus installed in these earth stations does not cause harmful interference to the essential radio services of stations which are operating in accordance with the provisions of these Regulations.

5138 § 10. In exceptional cases, land mobile earth stations in the
Mob-87 land mobile-satellite service may communicate with stations in the maritime mobile-satellite and aeronautical mobile-satellite services. Such operations shall comply with the relevant provisions of the Radio Regulations relating to those services and shall be subject to agreement among the administrations concerned, taking due account of No. 953.

5139
to
5158 NOT allocated.

ARTICLE 68

**General Radiotelephone Procedure
in the Land Mobile Service – Calls**

- 5159** § 1. (1) A land mobile station may call the land station only when it comes within the service area of the latter, that is to say, that area within which, by using an appropriate frequency, the land mobile station can be heard by the land station.
- 5160** (2) A land station having traffic for a land mobile station may call this station if it has reason to believe that the land mobile station is keeping watch and is within the service area of the land station.
- 5161** § 2. Land mobile stations shall not radiate a carrier wave between calls.
- 5162**
to
5186 NOT allocated.

CHAPTER XIII

ARTICLE 69

Entry into Force of the Radio Regulations

5187 § 1. These Regulations, which are annexed to the International
WARC-92 Telecommunication Convention, shall enter into force on 1 January 1982, except as specified in Nos. **5188**, **5189**, **5193**, **5194**, **5195**, **5196** and **5197**.

5188 § 2. Article **25** and Appendix **43** – but not Appendices **42** and **44** related to this Article – and Article **66** of these Regulations shall enter into force on 1 January 1981.

5189 § 3. The Frequency Allotment Plan for the Aeronautical Mobile (R) Service and the directly related provisions contained in Appendix **27 Aer2** of these Regulations shall enter into force at 0001 h UTC on 1 February 1983.

5190 § 4. On the date of entry into force of Article **25** and Article **66** of these Regulations, as specified in No. **5188** (1 January 1981), the provisions of the following Articles of the Radio Regulations, Geneva, 1959, as amended:

- a) Article 19 – with the exception of provisions 745 to 747 thereof and the Appendices related thereto – and
- b) Articles 38, 39, 40 and 40A – including the related Appendices 21, 21A and 22 – as well as the Additional Radio Regulations

shall be abrogated and replaced respectively by the provisions of Articles **25** and **66** of these Regulations.

5191 § 5. On the date specified in No. **5187** (1 January 1982) all the other provisions of the Radio Regulations (Geneva, 1959), as partially revised by the:

- a) Extraordinary Administrative Radio Conference to Allocate Frequency Bands for Space Radiocommunication Purposes, Geneva, 1963,
- b) Extraordinary Administrative Radio Conference for the Preparation of a Revised Allotment Plan for the Aeronautical Mobile (R) Service, Geneva, 1966,
- c) World Administrative Radio Conference to Deal with Matters Relating to the Maritime Mobile Service, Geneva, 1967,
- d) World Administrative Radio Conference for Space Telecommunications, Geneva, 1971,
- e) World Maritime Administrative Radio Conference, Geneva, 1974, and the
- f) World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978,

shall be abrogated and replaced by the provisions of these Regulations.

5192 § 6. In accordance with the request by the World Administrative Radio Conference for the Planning of the Broadcasting-Satellite Service in Frequency Bands 11.7 - 12.2 GHz (in Regions 2 and 3) and 11.7 - 12.5 GHz (in Region 1), Geneva, 1977, the provisions and associated Plan adopted by that Conference are, in the appropriate

form and without affecting their content and integrity, included in these Regulations as Appendix 30* and form an integral part of these Regulations.

5193 § 7. The partial revision of the Radio Regulations contained in
Orb-88 the Final Acts of WARC Orb-85 shall enter into force on 30 October 1986 at 0001 hours UTC.

5193.1 SUP
Orb-88

5194 § 8. (1) The partial revision of the Radio Regulations contained
Mob-87 in the Final Acts of WARC Mob-87 shall enter into force on 3 October 1989 at 0001 hours UTC, except for:

a) those provisions relating to the frequency band 4 000 - 27 500 kHz which are contained in:

- Articles **8** and **12**,
- Articles **60**, **62** and **65**, and
- Appendices **16**, **25** and **31** to **35**; and

b) Chapters **IX** and **N IX** of the Radio Regulations,

which shall enter into force on 1 July 1991 at 0001 hours UTC.

5195 (2) The use of the frequency bands 12 230 - 12 330 kHz,
WARC-92 16 360 - 16 460 kHz, 17 360 - 17 410 kHz, 18 780 - 18 900 kHz, 19 680 - 19 800 kHz, 22 720 - 22 855 kHz, 25 110 - 25 210 kHz and 26 100 - 26 175 kHz by the maritime mobile service commenced on 1 July 1991 at 0001 hours UTC under the conditions specified in Resolution **325 (Mob-87)**.

* *Note by the Secretary-General:* Appendix 30 has been revised by the First Session of the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It, Geneva, 1985, and becomes Appendix **30 (Orb-85)**.

RR69-4

5196 § 9. The partial revision of the Radio Regulations contained in
Orb-88 the Final Acts of WARC Orb-88 shall enter into force on 16 March 1990 at 0001 hours UTC.¹

5196.1 ¹ For the provisional application of certain parts of this revision,
Orb-88 see Resolutions **104 (Orb-88)** and **106 (Orb-88)**.

5197 § 10. The partial revision of the Radio Regulations contained in
WARC-92 the Final Acts of WARC-92 shall enter into force on 12 October 1993 at 0001 hours UTC.