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* Published separately.

† Appendix **27 Aer2**, which will replace Appendix **27** at 0001 hours UTC on 1 February 1983, will be published in due time before it enters into force. The modifications to Appendix **27** (Appendix **27 Aer2**) are contained in the Final Acts of the World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978. The Annex to Resolution **404** contains changes to be made to Appendix **27 Aer2** approved by the WARC-79.

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FOREWORD

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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, in Volume 1, the provisions of the Radio Regulations (Geneva, 1979) and, in Volume 2, the Appendices thereto, as well as the Resolutions and Recommendations, as adopted by the World Administrative Radio Conference, Geneva, 1979.

1.1 The Final Protocol (reservations and counter-reservations of signatory delegations) to the Final Acts of the World Administrative Radio Conference, Geneva, 1979, has not been reproduced in this edition.

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

TA	=	Analytical Table
IA	=	Analytical Index of Resolutions and Recommendations
N	=	Notes
RR	=	Radio Regulations
AP	=	Appendix
RES	=	Resolution
REC	=	Recommendation.

Examples:

TA-6	=	Analytical Table, page 6
IA RES-3	=	Analytical Index of Resolutions, page 3
IA REC-2	=	Analytical Index of Recommendations, page 2
N-2	=	Notes, page 2
RR8-14	=	Article 8 of the Radio Regulations, page 14
AP16-5	=	Appendix 16, page 5
RES500-2	=	Resolution No. 500, page 2
REC604-1	=	Recommendation No. 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.

3. The General Secretariat has furnished, in addition to several short notes in the body of the text, the following notes:

- in Appendix **42** to the Radio Regulations, 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 1 May 1981;

- in Appendix **44** to the Radio Regulations, two notes listing respectively blocks of selective call numbers for ship stations and blocks of coast station identification numbers supplied to administrations by the Secretary-General between the end of the World Administrative Radio Conference, Geneva, 1979, and 1 May 1981;

- preceding the Resolutions, a note indicating the manner in which the Resolutions have been grouped;

- preceding the Recommendations, a note indicating the manner in which the Recommendations have been grouped;

- in the section "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 CCIR Recommendations, together with the reference numbers and titles of the CCIR Recommendations.

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ANALYTICAL TABLE

ANALYTICAL TABLE

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(1982 edition)

SYMBOLS :

Anx	-	Annex
AP	-	Appendix
Art	-	Article
RES	-	Resolution
REC	-	Recommendation
Sec	-	Section
=	-	used in order to avoid repeating a heading or subheading

A

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* * *

ANALYTICAL INDEX OF RESOLUTIONS AND RECOMMENDATIONS

ANALYTICAL INDEX
OF RESOLUTIONS AND RECOMMENDATIONS

In this Index, presented in the form of a chart, Resolutions and Recommendations have been divided into groups over five pages :

- page **IA-2** = numbers **1** to **34**
- page **IA-3** = numbers **35** to **103**
- page **IA-4** = numbers **200** to **316**
- page **IA-5** = numbers **400** to **602**
- page **IA-6** = numbers **603** to **712.**

The numbers of Resolutions are given in the upper part of each page and those of Recommendations in the lower part. The absence of a number means that there is no Resolution or Recommendation bearing that number.

On the right of each page, a list of themes specifically related to the group of Resolutions and/or Recommendations on the page is given in alphabetical order. The themes are identified depending on whether they constitute the main or secondary theme or themes of a particular Resolution or Recommendation.

For Resolutions:	the symbol	o	denotes a	**main theme** and
	the symbol	ø	denotes a	**secondary theme.**
For Recommendations:	the symbol	=	denotes a	**main theme** and
	the symbol	≠	denotes a	**secondary theme.**

Examples:

a) If we wish to determine the subject of a particular Resolution and/or Recommendation we need to locate its number on the appropriate page. Running vertically up the column of that number, we shall find one or more of the symbols explained above. If the symbol is "o" or "≠" the theme to the right is the main theme of the Resolution (o) or of the Recommendation (=) and if the symbol is "ø" or "≠" the theme is a a secondary theme of the same Resolution (ø) or Recommendation (≠).

Thus, for instance, the vertical column of number 1 indicates that the theme "Frequency - Assignment" is the main theme (o) of Resolution 1 and that the theme "Frequency - Management" is its secondary theme (ø). As far as Recommendations are concerned, the same column indicates that the themes "Relief operations/organisations" and "Services - Space" are the main themes (=) of Recommendation 1 and that the themes "ITU - CCIR" and "Radio Regulations" are its secondary themes (≠).

b) If, on the other hand, we wish to know which Resolutions and/or Recommendations deal with a particular theme, for instance "Technical cooperation and assistance" it is necessary to determine first on which pages the theme appears. On each of these pages, to the left of the theme "Technical cooperation and assistance", there are one or more of the symbols that we already know. These symbols indicate, in each case, wether the theme refers to a Resolution (o, ø) or to a Recommendation (=, ≠) and wether it is the main theme or a secondary theme.

For any additional information required, the general Index may be consulted, which gives the complete list of Resolutions (pages XXV to XXXV) and Recommendations (pages XXXV to XLIV), together with their titles.

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							o											ø				Frequency - Allocation
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						=																Licences
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35	36	37	38	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	100	101	102	103	RESOLUTIONS (o, ø)
							=																Bandwidth
		o																					Computers
				o																			Coordination Area
					o																		Division of the World - Climatic Zones
										o													- Regions
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										o													Frequency - Allocation
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60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	100	101	102	103					RECOMMENDATIONS (=, ≠)

200	201	202	203	204	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	RESOLUTIONS (o, ø)
								=	ø			≠					ø					Call and Reply
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										=												- Use
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				=																		Services - Aeronautical Mobile (R)
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	ø	o		≠																		- Mobile
											o	o										Single-Sideband Technique
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									ø								o					Telegraphy - AIA Morse
					o	o								≠								- Narrow-Band Direct-Printing
															o							Telemetry, Telecommand, Data Exchange
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200	201	202	203	204	300	301	302	303	304	305	306	307	308	309	310	311	312	313				RECOMMENDATIONS (=, ≠)

400	401	402	403	404	405	406	407	500	501	502	503	504	505	506	507	508	509	510	600	601		RESOLUTIONS (o, ∅)
			≠	∅	∅						≠											Congestion
			∅				∅	∅											≠	∅ ≠		Distress and Safety
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400	401	402	403	404	405	406	407	500	501	502	503	504	505	506	507	508			600	601	602	RECOMMENDATIONS (=, ≠)

603	604	605	620	640	641	642	700	701	702	703	704	705	706	707	708	709	710	711	712	RESOLUTIONS (o, ø) / RECOMMENDATIONS (=, ≠)
																	=			Airborne Radars
	=			ø																Distress and Safety
									=											Emissions (Extraterrestrial)
	=																			EPIRBs
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NOTES

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 <---- XXA200-XXZ999	26 208 <---- 2,080 20,800	<--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	XXAAA-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 CCIR RECOMMENDATIONS*
(see Resolution **65**)

RR Item	Subject	Recommendations ** explicitly cited in the RR	Other relevant Recommendations
15 15.1	Coordinated Universal Time (UTC)	460-3	-
147	Occupied bandwidth (unless otherwise specified by CCIR)	-	328-5
150	Power (relations between peak envelope power, mean power and carrier power)	-	326-4
161	Permissible interference	-	216-2, 240-3, 302-1, 418-3, 441-1, 466-3, 483-1, 496-1, 510-1, 511-1, 514, 523-1, 524-1, 560-1, 565
265	Further examples of designation of emissions	-	-
300	Choice of transmitting, receiving and measuring equipment	-	162-2, 205-2, 246-3, 266, 329-4, 331-4, 332-4, 338-3, 343-1, 344-2, 346-1, 348-2, 349-3, 415-1, 416-1, 436-2, 450-1, 454-1, 467
302	Signal processing methods for most efficient use of the frequency spectrum	-	100-2, 455-1, 475-1

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* In columns where the numbers of the Recommendations or Reports (see note **) appear, the number following the hyphen indicates, in each case, the most recent version of each Recommendation or Report to date on publication of this Note by the General Secretariat.

** Four Reports explicitly cited in the Radio Regulations are also included in this column.

RR Item	Subject	Recommendations explicitly cited in the RR	Other relevant Recommendations
305	Limitation of the out-of-band emissions (power levels)	-	328-5
312	Technique of measurement	-	182-2, 377-2, 378-3, 443-1
524	Use of band 6765-6795 kHz for ISM applications	-	433-3
661	Use of band 433.05-434.79 MHz for ISM applications	-	433-3
911	Use of band 61-61.5 GHz for ISM applications	-	433-3
916	Use of band 122-123 GHz for ISM applications	-	433-3
922	Use of band 244-246 GHz for ISM applications	-	433-3
1001	Development of IFRB standards	-	See RR 1454 and RR 1582
1084 1084.1	Calculation methods and criteria to be employed in evaluating interference in satellite communications	-	355-3, 356-4, 357-3, 358-3, 359-5, 406-5, 452-3, 465-1, 509, 558-1, 580, 590
1107 1107.1	Criteria to be employed in evaluating interference between earth stations and other terrestrial services (except for fixed and mobile services)	-	359-5, 452-3, 465-2, 509
1118 1118.1	Calculation methods and criteria to be employed in evaluating interference in satellite communications	-	355-3, 356-4, 357-3, 358-3, 359-5, 406-5, 452-3, 465-1, 509, 558-1, 580, 590
1148 1148.1	Criteria relating to coordination between earth station and other terrestrial services	-	359-5, 452-3, 465-1, 580

RR Item	Subject	Recommendations explicitly cited in the RR	Other relevant Recommendations
1164 1164.1	Calculation methods and the criteria in evaluating interference relating to coordination between terrestrial stations and earth stations	-	355-3, 356-4, 357-3, 358-3, 359-5, 406-5, 452-3, 465-1, 558-1
1454	Technical standards of IFRB should be based, amongst other things, on CCIR Recommendations	-	205-2, 240-3, 314-5, 339-5, 355-3, 356-4, 357-3, 358-3, 359-5, 364-3, 368-4, 370-4, 371-4, 372-3, 406-5, 412-3, 434-4, 435-4, 441-1, 447-2, 452-3, 465-1, 466-3, 496-1, 509, 527-1, 528-1, 529, 530-1, 544, 558-1, 570, 578, 580, 589, 590, 591, 597, 598, 599
1582	Technical standards of IFRB should be based, amongst other things, on CCIR Recommendations	-	314-5, 355-3, 356-4, 357-3, 358-3, 359-5, 364-3, 368-4, 373-5, 406-5, 479-2, 496-1, 509, 510-1, 511-1, 514, 517-1, 523-1, 524-1, 527-1, 528-1, 529, 530-1, 558-1, 578, 580, 590
1770	Technical standards of IFRB should be based not only on the factors listed in 1454	-	See RR 1454
1812	Receiver characteristics	-	478-3, 489-1, 494, 539-1, 331-4, 332-4
1814 1814.1	Interference from electrical apparatus (except ISM equipment)	-	433-3

RR Item	Subject	Recommendations explicitly cited in the RR	Other relevant Recommendations
1815 1815.1	Interference from ISM equipment	-	433-3
1878	Standards on monitoring stations	-	182-2, 377-2, 378-3, 443-1, 379-1
2057	Identification signals	-	379-1, 493-2, 585, 587
2075	Identification signals	-	379-1, 493-2, 585, 587
2076	Identification signals	-	379-1, 493-2, 585, 587
2077	Identification signals	-	379-1, 443-1, 585, 587
2149	Maritime mobile service identities	-	493-2, 585, 587
2501	Sites and frequencies for terrestrial stations	-	452-3
2502 2502.2	Frequency sharing between terrestrial services and space services between 1 GHz and 10 GHz	Report 393-3	-
2503 2503.2	Frequency sharing between terrestrial services and space services between 10 GHz and 15 GHz	Report 393-3	-
2504 2504.1	Frequency sharing between terrestrial services and space services above 15 GHz	-	406-5 *
2506 2506.1	Frequency sharing between terrestrial services and space services above 1 GHz	Report 393-3	-
2509 2509.1	Limits concerning inter-regional interference	-	355-3, 356-4, 357-3, 358-3, 359-5, 406-5, 558-1

* See Note 6 of this Recommendation for clarification.

RR Item	Subject	Recommendations explicitly cited in the RR	Other relevant Recommendations
2510 2510.1	Limits concerning inter-regional interference	-	355-3, 356-4, 357-3, 358-3, 359-5, 406-5, 558-1
2511 2511.2	Limits concerning inter-regional interference	-	355-3, 356-4, 357-3, 358-3, 359-5, 406-5, 558-1
2539	Geographical separation between earth stations and terrestrial stations	-	355-3, 356-4, 357-3, 358-3, 359-5, 406-5, 558-1
2547 2547.1	Limits concerning inter-regional interference (frequency sharing between space and terrestrial services)	-	355-3, 356-4, 357-3, 358-3, 359-5, 406-5, 558-1, 580
2548 2548.1	Limits concerning inter-regional interference (frequency sharing between space and terrestrial services)	-	355-3, 356-4, 357-3, 358-3, 359-5, 406-5, 558-1, 580
2559 2559.1	Limits concerning inter-regional interference (frequency sharing between space and terrestrial services)	-	355-3, 356-4, 357-3, 358-3, 359-5, 406-5, 558-1, 580
2576 2576.1	Limits concerning inter-regional interference (frequency sharing between space and terrestrial services)	-	355-3, 356-4, 357-3, 358-3, 359-5, 406,5, 558-1, 580
2580 2580.1	Limits concerning inter-regional interference (frequency sharing between space and terrestrial services)	-	355-3, 356-4, 357-3, 358-3, 359-5, 406-5, 558-1, 580

RR Item	Subject	Recommendations explicitly cited in the RR	Other relevant Recommendations
2582 2582.1	Power density limits	-	-
2613 2613.1	Accepted level of interference in space telecommunications	-	466-3, 483-1, 523-1, 524-1, 580
2614 2614.1	Accepted level of interference in space telecommunications	-	466-3, 483-1, 523-1, 524-1, 580
2619 2619.1	Accepted level of interference in space telecommunications	-	355-3, 356-4, 466-3, 509, 514, 558-1, 580
2623 2623.1	Accepted level of interference in space telecommunications	-	355-3, 356-4, 466-3, 509, 514, 558-1
2627 2627.1	Accepted level of interference in space telecommunications	-	355-3, 356-4, 466-3, 509, 514, 558-1
2630 2630.1	Accepted level of interference in space telecommunications	-	355-3, 356-4, 466-3, 509, 514, 558-1
2632 2632.2	Radio Astronomy in the shielded zone of the Moon	-	479-2
2636	Level of harmful interference (off-axis radiation)	-	465-1, 509, 524-1, 580
2770	Standard frequency and time signals	-	374-3, 376-1, 537
2772	Standard frequency and time signals	-	375-2, 460-3, 583
2904	Radio Astronomy	-	314-5
Art. 64	Narrow-band Direct Printing Telegraphy	-	490, 491, 492-2, 540-1
AP3 Sect. B Item 8b)	Maximum Power Density	Report 792-1	-

RR Item	Subject	Recommendations explicitly cited in the RR	Other relevant Recommendations
AP4 Sect. C Item 4a), Sect. D Item 4a)	Maximum Power Density	Report 792-1	-
AP6 Part B Para 2)	Computation of necessary bandwidth	-	328-5, 338-3
AP7 Note 36)	Frequency tolerances	-	-
AP8 Notes 12) and 13)	Spurious emissions	-	329-4
AP9 List VIII Part II-D Note 1	Particulars of monitoring stations carrying out bandwidth measurements (Ref. to Rec. and Rep.)	-	443-1, Report 275-4
List VIII Part III Note 1	Monitoring of emissions from stations of space radiocommunications services (Bandwidth measurement) (Ref. to Rec. and Rep.)	-	Report 276-4
AP28 Para 3.2.2 Note	Calculation of coordination distance in satellite communications	-	359-5, 452-3, 580
Table I Note (5)	Parameters required for determination of coordination distances in satellite communications	-	359-5, 452-3, 580
AP30 Art. 6 Para. 6.1.3 Note 1	Criteria of evaluation of interference in satellite communications	-	355-3, 356-4, 358-3, 359-5, 406-5, 452-3, 558-1
Art. 7 Para 7.2.5 Note 1	Criteria of evaluation of interference in satellite communications	-	355-3, 356-4, 358-3, 359-5, 406-5, 452-3, 558-1

RR Item	Subject	Recommendations explicitly cited in the RR	Other relevant Recommendations
AP30 Art. 12 Para 12.3.1	Provisions governing BC satellite service in Region 2	-	-
Annex 8 Para 3.1	Pre-emphasis characteristics in satellite broadcasting	405-1	-
Annex 8 Para 3.6	Figure of merit (G/T) of receiving installations	Report 473-3	-
Annex 8 Para 3.9.3	Spurious emissions	-	329-4
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RADIO REGULATIONS

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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.).

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 CCIR[1], 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.

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.*

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

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 radiocommunication 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* between *earth stations* at specified fixed points when one or more *satellites* are used; in some cases this service includes satellite-to-satellite links, which may also be effected 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* providing links between artificial earth *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.

35 3.16 *Aeronautical Mobile-Satellite Service:* A *mobile-satellite service* in which *mobile earth stations* are located on board aircraft; *survival craft stations* and *emergency position-indicating radiobeacon stations* may also participate in this service.

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 service* 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 *radiocommunication service* for the purpose of *radiodetermination* involving the use of one or more *space stations.*

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.*

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 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 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 *radiocommunication 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 Stations:* 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.

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

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.

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 radionavigation 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 specified fixed point to a *space station,* or vice versa, conveying information for a *space radiocommunication service* other than for the *fixed-satellite service.*

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.

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* *Note by the General Secretariat:* 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 (see also Resolution **68**).

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.*

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 control [1].

120 5.11 *Duplex Operation:* Operating method in which transmission is possible simultaneously in both directions of a *telecommunication* channel [1].

119.1 } **120.1** } [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 General Secretariat:* 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 (see also Resolution **68**).

121 5.12 *Semi-Duplex Operation:* A method which is *simplex operation* at one end of the circuit and *duplex operation* at the other[1].

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.

121.1 [1] In general, *duplex operation* and *semi-duplex operation* require two frequencies in *radiocommunication*; *simplex operation* may use either one or two.

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.*

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.*

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* 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* (*P*X or *p*X);

— *mean power* (*P*Y or *p*Y);

— *carrier power* (*P*Z or *p*Z).

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, ususally 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.

162 7.3 *Accepted Interference*[1]*: 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.

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.*

161.1 } 162.1 } [1] The terms "permissible interference" and "accepted interference" are used in the coordination of frequency assignments between administrations.

* *Note by the General Secretariat:* 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 (see also Resolution **68**).

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.

Section VIII. Technical Terms Relating to Space

169 8.1 *Deep Space:* Space at distances from the Earth approximately equal to, or greater than, the distance between the Earth and the Moon.

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 radiocommunication 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* in which a *satellite* must be placed to be a *geostationary satellite.*

183 to **207** NOT allocated.

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**.

210 to **234** NOT allocated.

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 corresponding to zero degrees geographical longitude.

238 § 4. Whenever a specified time is used in international radiocommunication activities, UTC shall be applied, unless otherwise 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

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[2] 1

(2.3) A single channel containing quantized or digital information with the use of a modulating sub-carrier[2] 2

271.1 [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).

272.1 [2] This excludes time-division multiplex.

(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[1]

(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
(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

274 to 298 NOT allocated.

273.1 [1] 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.

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 considerations, the choice of transmitting, receiving and measuring equipment 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 technique.

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.

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.

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

312 § 7. To ensure compliance with these Regulations, administrations 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

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

caused to services carried on by stations operating in accordance with the provisions of the Convention and of these Regulations.

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

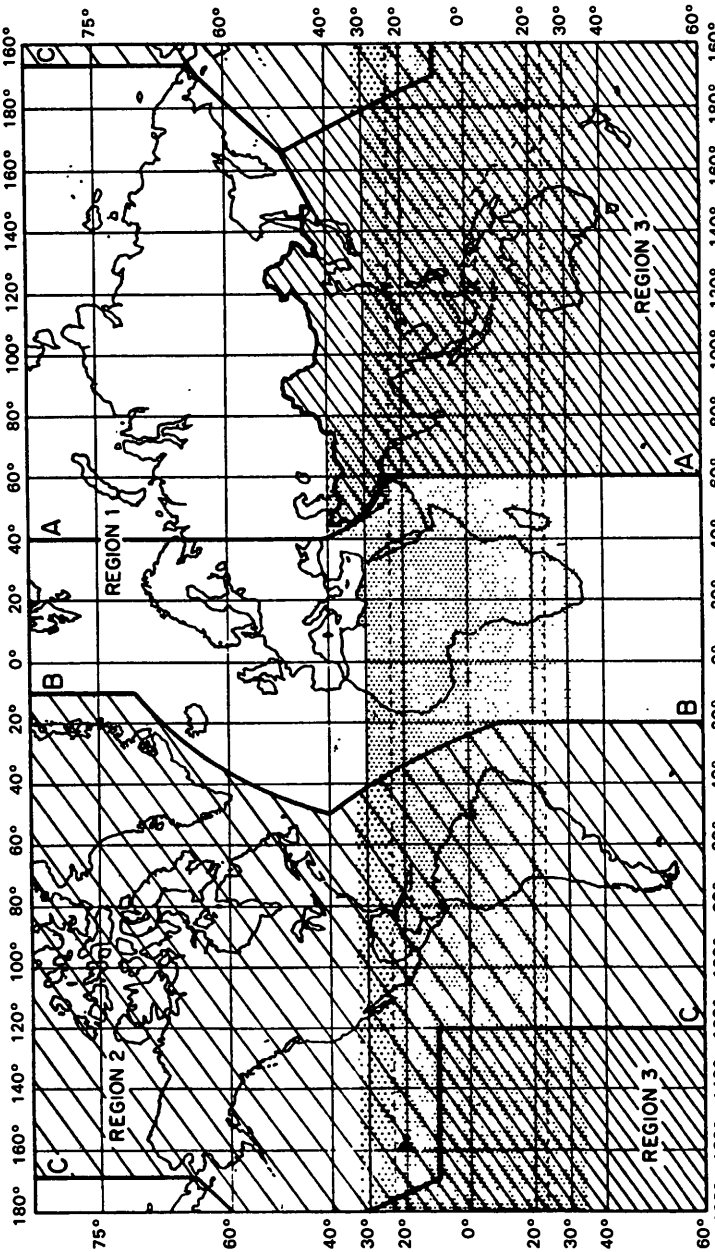
391 § 1. In all documents of the Union where the terms *allocation*, *allotment* and *assignment* are to be used, they shall have the meaning given them in Nos. **17** to **19**, the terms used in the three working languages being as follows:

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	Assignation (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 Regions[1] 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 Zone 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 and Jordan are included in the European Broadcasting Area.

405 § 5. The "European Maritime Area" is bounded on the north by 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 30° West; on the west by a line extending along meridian 30° West to its intersection with parallel 30° North; on the south by a line extending along parallel 30° North to its intersection with meridian 43° East; on 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 parallel 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 concerned.

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 — 19.95

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	

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, Hungary, Poland, the German Democratic Republic, 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 — 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, Hungary, Mongolia, Poland, 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, 70 — 90 kHz (72 — 84 kHz and 86 — 90 kHz in Region 1) and 90 — 110 kHz 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 bands concerned.

kHz
19.95 — 90

Allocation to Services		
Region 1	Region 2	Region 3
19.95 — 20.05	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	
20.05 — 70	FIXED MARITIME MOBILE 448 447 449	
70 — 72 RADIO-NAVIGATION 451	**70 — 90** FIXED MARITIME MOBILE 448 MARITIME RADIO-NAVIGATION 451 Radiolocation	**70 — 72** RADIO-NAVIGATION 451 Fixed Maritime Mobile 448 450
72 — 84 FIXED MARITIME MOBILE 448 RADIO-NAVIGATION 451 447		**72 — 84** FIXED MARITIME MOBILE 448 RADIO-NAVIGATION 451
84 — 86 RADIO-NAVIGATION 451		**84 — 86** RADIO-NAVIGATION 451 Fixed Maritime Mobile 448 450
86 — 90 FIXED MARITIME MOBILE 448 RADIONAVIGATION 447	452	**86 — 90** FIXED MARITIME MOBILE 448 RADIO-NAVIGATION 451

449 *Additional allocation:* in Bulgaria, Hungary, Poland, the German Democratic Republic, Czechoslovakia and the U.S.S.R., the band 67 — 70 kHz is also allocated to the radionavigation service on a permitted basis.

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 services is on a primary basis (see No. **425**).

451 The use of the bands 70 — 90 kHz (70 — 86 kHz in Region 1) and 110 — 130 kHz (112 — 130 kHz in Region 1) by the radionavigation service is limited to continuous wave systems.

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.

kHz
90 — 110

Allocation to Services		
Region 1	Region 2	Region 3
90 — 110	RADIONAVIGATION 453 Fixed Maritime Mobile 448 454	

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.

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 RADIO-NAVIGATION 451 454
112 — 115 RADIO-NAVIGATION 451		**112 — 117.6** RADIO-NAVIGATION 451 Fixed Maritime Mobile 454 455
115 — 117.6 RADIO-NAVIGATION 451 Fixed Maritime Mobile 454 456		
117.6 — 126 FIXED MARITIME MOBILE RADIO-NAVIGATION 451 454		**117.6 — 126** FIXED MARITIME MOBILE RADIO-NAVIGATION 451 454
126 — 129 RADIO-NAVIGATION 451		**126 — 129** RADIO-NAVIGATION 451 Fixed Maritime Mobile 454 455
129 — 130 FIXED MARITIME MOBILE RADIO-NAVIGATION 451 454	452 454	**129 — 130** FIXED MARITIME MOBILE RADIO-NAVIGATION 451 454

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 — 285

Allocation to Services		
Region 1	Region 2	Region 3
130 — 148.5 MARITIME MOBILE / FIXED / 454 457 458	**130 — 160** FIXED MARITIME MOBILE 454	**130 — 160** FIXED MARITIME MOBILE RADIONAVIGATION 454
148.5 — 255 BROADCASTING 458 460 461 462	**160 — 190** FIXED 459	**160 — 190** FIXED Aeronautical Radionavigation
	190 — 200 AERONAUTICAL RADIONAVIGATION	
255 — 283.5 BROADCASTING / AERONAUTICAL RADIONAVIGATION / 463 458 462 464	**200 — 285** AERONAUTICAL RADIONAVIGATION Aeronautical Mobile	

457 *Additional allocation:* in Bulgaria, Hungary, Mongolia, Poland, the German Democratic Republic, Roumania, 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 In Region 1, the change of the band limits from 150 kHz and 285 kHz to 148.5 kHz and 283.5 kHz respectively shall take place on 1 February 1986 for the lower limit and 1 February 1990 for the upper limit (see Resolution **500**).

459 In the Region 2 polar areas (north of 60° N and south of 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.

kHz
283.5 — 405

Allocation to Services		
Region 1	Region 2	Region 3
283.5 — 315 MARITIME RADIONAVIGATION (radiobeacons) 466 / AERONAUTICAL RADIONAVIGATION / 458 465	**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
325 — 405 AERONAUTICAL RADIONAVIGATION 465	**325 — 335** AERONAUTICAL RADIONAVIGATION Aeronautical Mobile Maritime Radionavigation (radiobeacons) **335 — 405** AERONAUTICAL RADIONAVIGATION Aeronautical Mobile	**325 — 405** AERONAUTICAL RADIONAVIGATION Aeronautical Mobile

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.

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.

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
405 — 415

Allocation to Services		
Region 1	Region 2	Region 3
405 — 415 RADIO-NAVIGATION 468 465	**405 — 415** RADIONAVIGATION 468 Aeronautical Mobile	

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.

kHz
415 — 1 606.5

Allocation to Services		
Region 1	Region 2	Region 3
415 — 435 AERONAUTICAL RADIONAVIGATION / MARITIME MOBILE / 470 465	**415 — 495** MARITIME MOBILE 470	
435 — 495 MARITIME MOBILE 470 Aeronautical Radionavigation 465 471	469 471	
495 — 505	MOBILE (distress and calling) 472	
505 — 526.5 MARITIME MOBILE 470 / AERONAUTICAL RADIONAVIGATION / 473 465 471 474 475 476	**505 — 510** MARITIME MOBILE 470 471	**505 — 526.5** MARITIME MOBILE 470 / AERONAUTICAL RADIONAVIGATION / Aeronautical Mobile Land Mobile 471
	510 — 525 MOBILE 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

469 *Additional allocation:* in Afghanistan, Australia, China, the Overseas French Territories of Region 3, India, Japan and Papua New Guinea, the band 415 — 495 kHz is also allocated to the aeronautical radionavigation service on a permitted 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.

471 The bands 490 — 495 kHz and 505 — 510 kHz shall be subject to the provisions of No. **3018** until the provisions of Recommendation **200** have been implemented.

472 The frequency 500 kHz is the international distress and calling frequency for radiotelegraphy. The conditions for its use are prescribed in Article **38**.

473 In Region 1, in the band 505 — 526.5 kHz, the administrations which operate stations of the aeronautical radionavigation service shall take the technical steps necessary to avoid harmful interference to the maritime mobile service.

474 In the Federal Republic of Germany, Belgium, Spain, France, Iceland, Italy, Norway, the Netherlands, the United Kingdom, Sweden and Yugoslavia, the frequency 518 kHz is used on an experimental basis for the transmission by coast stations of meteorological and navigational warnings to ships, by means of narrow-band direct-printing telegraphy.

475 In the band 515.5 — 526.5 kHz, Austria may continue to operate only those broadcasting stations listed in Additional Protocol III to the Final Acts of the Regional Administrative LF/MF Broadcasting Conference (Regions 1 and 3), Geneva, 1975. This operation is allowed until the entry into force of a revision of the Geneva Plan, 1975, and subject to not causing harmful interference to the maritime mobile and aeronautical radionavigation services.

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

<table>
<tr><th colspan="3">Allocation to Services</th></tr>
<tr><th>Region 1</th><th>Region 2</th><th>Region 3</th></tr>
<tr><td rowspan="2">1 606.5 — 1 625
MARITIME MOBILE
/ FIXED /
/ LAND MOBILE /

483 484</td><td rowspan="2">1 605 — 1 625
BROADCASTING 480

481</td><td rowspan="2">1 606.5 — 1 800
FIXED
MOBILE
RADIOLOCATION
RADIONAVIGATION</td></tr>
<tr><td></td></tr>
<tr><td>1 625 — 1 635
RADIOLOCATION 487

485 486</td><td rowspan="2">1 625 — 1 705
BROADCASTING 480
/ FIXED /
/ MOBILE /
Radiolocation

481</td><td rowspan="3"></td></tr>
<tr><td rowspan="2">1 635 — 1 800
MARITIME MOBILE
/ FIXED /
/ LAND MOBILE /

483 484 488</td></tr>
<tr><td>1 705 — 1 800
FIXED
MOBILE
RADIOLOCATION
AERONAUTICAL RADIONAVIGATION</td><td>482</td></tr>
</table>

480 In Region 2, the use of the band 1 605 — 1 705 kHz by stations of the broadcasting service shall be subject to a plan to be established by a regional administrative radio conference (see Recommendation **504**).

481 In Region 2, until the dates decided by the regional administrative radio conference referred to in No. **480**, the band 1 605 — 1 705 kHz is allocated to the fixed, mobile and aeronautical radionavigation services on a primary basis and to the radiolocation service on a secondary basis (see Recommendation **504**).

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 — 2 000

Allocation to Services		
Region 1	Region 2	Region 3
1 800 — 1 810 RADIOLOCATION 487 485 486	**1 800 — 1 850** AMATEUR 489	**1 800 — 2 000** AMATEUR FIXED MOBILE except aeronautical mobile RADIONAVIGATION Radiolocation 489
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 489 494	

489 In Region 2, Loran stations operating in the band 1 800 — 2 000 kHz shall cease operation by 31 December 1982. In Region 3, the Loran system operates either on 1 850 kHz or 1 950 kHz, 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.

kHz
2 000 — 2 170

Allocation to Services		
Region 1	Region 2	Region 3
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		
2 045 — 2 160 MARITIME MOBILE / FIXED / / LAND MOBILE / 483 484	**2 065 — 2 107** MARITIME MOBILE 497 498	
2 160 — 2 170 RADIOLOCATION 487 485 486 499	**2 107 — 2 170** FIXED MOBILE	

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.

497 In Region 2, except in Greenland, coast stations and ship stations using 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. **4245**.

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.

kHz
2 170 — 2 194

Allocation to Services		
Region 1	Region 2	Region 3
2 170 — 2 173.5	MARITIME MOBILE	
2 173.5 — 2 190.5	MOBILE (distress and calling) 500 501	
2 190.5 — 2 194	MARITIME MOBILE	

500 The frequency 2 182 kHz is the international distress and calling frequency for radiotelephony. The conditions for the use of the band 2 173.5 — 2 190.5 kHz are prescribed in Articles **38** and **60**.

501 The frequencies 2 182 kHz, 3 023 kHz, 5 680 kHz, 8 364 kHz, 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 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.

kHz
2 194 — 2 502

<table>
<tr><th colspan="3">Allocation to Services</th></tr>
<tr><th>Region 1</th><th>Region 2</th><th>Region 3</th></tr>
<tr><td>2 194 — 2 300
FIXED
MOBILE except aeronautical mobile (R)
484 495 502</td><td colspan="2">2 194 — 2 300
FIXED
MOBILE
502</td></tr>
<tr><td>2 300 — 2 498
FIXED
MOBILE except aeronautical mobile (R)
BROADCASTING 503
495</td><td colspan="2">2 300 — 2 495
FIXED
MOBILE
BROADCASTING 503</td></tr>
<tr><td>2 498 — 2 501
STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)</td><td colspan="2">2 495 — 2 501
STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)</td></tr>
<tr><td>2 501 — 2 502</td><td colspan="2">STANDARD FREQUENCY AND TIME SIGNAL
Space Research</td></tr>
</table>

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
2 502 — 2 850

<table>
<tr><th colspan="3">Allocation to Services</th></tr>
<tr><th>Region 1</th><th>Region 2</th><th>Region 3</th></tr>
<tr><td>2 502 — 2 625
FIXED
MOBILE except aeronautical mobile (R)
484 495 504</td><td colspan="2">2 502 — 2 505
STANDARD FREQUENCY AND TIME SIGNAL</td></tr>
<tr><td>2 625 — 2 650
MARITIME MOBILE
MARITIME RADIONAVIGATION
484</td><td colspan="2" rowspan="3">2 505 — 2 850
FIXED
MOBILE</td></tr>
<tr><td>2 650 — 2 850
FIXED
MOBILE except aeronautical mobile (R)
484 495</td></tr>
</table>

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.

kHz
2 850 — 3 230

Allocation to Services		
Region 1	Region 2	Region 3
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	

505 The carrier (reference) frequencies 3 023 kHz and 5 680 kHz may also be used, in accordance with Nos. **2980** and **2984** respectively, 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 — 4 000

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	511 512 514 515	**3 950 — 4 000** FIXED BROADCASTING 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.

kHz
4 000 — 4 650

Allocation to Services		
Region 1	Region 2	Region 3
4 000 — 4 063	FIXED MARITIME MOBILE 517 516	
4 063 — 4 438	MARITIME MOBILE 520 518 519	
4 438 — 4 650 FIXED MOBILE except aeronautical mobile (R)		**4 438 — 4 650** FIXED MOBILE except aeronautical mobile

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. **4373**).

518 In Afghanistan, Argentina, Australia, Botswana, China, India, Swaziland, 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 For the use of the carrier frequency 4 125 kHz in the zone of Regions 1 and 2 south of latitude 15° N, including Mexico, and in the zone of Region 3 south of latitude 25° N, see No. **2982**.

kHz
4 650 — 5 005

Allocation to Services		
Region 1	Region 2	Region 3
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	

kHz
5 005 — 5 480

Allocation to Services		
Region 1	Region 2	Region 3
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	
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

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
5 480 — 6 765

Allocation to Services		
Region 1	Region 2	Region 3
5 480 — 5 680	AERONAUTICAL MOBILE (R) 501 505	
5 680 — 5 730	AERONAUTICAL MOBILE (OR) 501 505	
5 730 — 5 950 FIXED LAND MOBILE	**5 730 — 5 950** FIXED MOBILE except aeronautical mobile (R)	**5 730 — 5 950** FIXED Mobile except aeronautical mobile (R)
5 950 — 6 200	BROADCASTING	
6 200 — 6 525	MARITIME MOBILE 523 522	
6 525 — 6 685	AERONAUTICAL MOBILE (R)	
6 685 — 6 765	AERONAUTICAL MOBILE (OR)	

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.

523 For the use of the carrier frequency 6 215.5 kHz in the zone of Region 3 south of latitude 25° N, see No. **2986**.

kHz
6 765 — 7 300

Allocation to Services		
Region 1	Region 2	Region 3
6 765 — 7 000	FIXED Land Mobile 525 524	
7 000 — 7 100	AMATEUR 510 AMATEUR-SATELLITE 526 527	
7 100 — 7 300 BROADCASTING	**7 100 — 7 300** AMATEUR 510 528	**7 100 — 7 300** BROADCASTING

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.

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.

kHz
7 300 — 9 995

Allocation to Services		
Region 1	Region 2	Region 3
7 300 — 8 100	FIXED Land Mobile 529	
8 100 — 8 195	FIXED MARITIME MOBILE	
8 195 — 8 815	MARITIME MOBILE 501	
8 815 — 8 965	AERONAUTICAL MOBILE (R)	
8 965 — 9 040	AERONAUTICAL MOBILE (OR)	
9 040 — 9 500	FIXED	
9 500 — 9 900	BROADCASTING 530 531	
9 900 — 9 995	FIXED	

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.

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 not using a total radiated power exceeding 24 dBW.

531 The bands 9 775 — 9 900 kHz, 11 650 — 11 700 kHz, 11 975 — 12 050 kHz, 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 broadcasting service shall be 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**). Within these bands, the date of commencement 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
9 995 — 13 200

Allocation to Services		
Region 1	Region 2	Region 3
9 995 — 10 003	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 501	
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 — 11 650	FIXED	
11 650 — 12 050	BROADCASTING 530 531	
12 050 — 12 230	FIXED	
12 230 — 13 200	MARITIME MOBILE 532	

532 The bands 12 230 — 12 330 kHz, 16 360 — 16 460 kHz, 17 360 — 17 410 kHz, 18 780 — 18 900 kHz, 19 680 — 19 800 kHz and 22 720 — 22 855 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 maritime mobile service shall be subject to provisions to be decided by a competent world administrative radio conference. The date of commencement of operations in the maritime mobile service on a frequency in accordance with the above-mentioned provisions shall not be earlier than the date of completion of satisfactory transfer, in accordance with the procedure 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 maritime mobile operations on that frequency.

kHz
13 200 — 14 990

Allocation to Services		
Region 1	Region 2	Region 3
13 200 — 13 260	AERONAUTICAL MOBILE (OR)	
13 260 — 13 360	AERONAUTICAL MOBILE (R)	
13 360 — 13 410	FIXED RADIO ASTRONOMY 533	
13 410 — 13 600	FIXED Mobile except aeronautical mobile (R) 534	
13 600 — 13 800	BROADCASTING 531	
13 800 — 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)	

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**).

534 The band 13 553 — 13 567 kHz (centre frequency 13 560 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**.

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
14 990 — 18 030

Allocation to Services		
Region 1	Region 2	Region 3
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	
15 600 — 16 360	FIXED 536	
16 360 — 17 410	MARITIME MOBILE 532	
17 410 — 17 550	FIXED	
17 550 — 17 900	BROADCASTING 531	
17 900 — 17 970	AERONAUTICAL MOBILE (R)	
17 970 — 18 030	AERONAUTICAL MOBILE (OR)	

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.

kHz
18 030 — 19 990

Allocation to Services		
Region 1	Region 2	Region 3
18 030 — 18 052	FIXED	
18 052 — 18 068	FIXED Space Research	
18 068 — 18 168	AMATEUR 510 AMATEUR-SATELLITE 537 538	
18 168 — 18 780	FIXED	
18 780 — 18 900	MARITIME MOBILE 532	
18 900 — 19 680	FIXED	
19 680 — 19 800	MARITIME MOBILE 532	
19 800 — 19 990	FIXED	

537 The band 18 068 — 18 168 kHz is allocated to the fixed service on a primary basis subject to the procedure described in Resolution **8**. The use of this band by the amateur and amateur-satellite services shall be subject to the completion of satisfactory transfer of all assignments to stations in the fixed service operating in this band and recorded in the Master Register, in accordance with the procedure described in Resolution **8**.

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
19 990 — 23 350

Allocation to Services		
Region 1	Region 2	Region 3
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 532 540	
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 — 25 070

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 542 543	
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	

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 The band 24 890 — 24 990 kHz is allocated to the fixed and land mobile services on a primary basis subject to the procedure described in Resolution **8**. The use of this band by the amateur and amateur-satellite services shall be subject to the completion of the satisfactory transfer of all assignments to fixed and land mobile stations operating in this band and recorded in the Master Register, in accordance with the procedure described in Resolution **8**.

kHz
25 070 — 27 500

Allocation to Services		
Region 1	Region 2	Region 3
25 070 — 25 210	MARITIME MOBILE 544	
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 544	
26 175 — 27 500	FIXED MOBILE except aeronautical mobile 546	

544 The bands 25 110 — 25 210 kHz and 26 100 — 26 175 kHz are also allocated to the fixed and land mobile services on a primary basis subject to the procedure described in Resolution **8**. The use of these bands on an exclusive basis by the maritime mobile service shall be subject to provisions to be decided by a competent world administrative radio conference. The date of commencement of operations in the maritime mobile service on a frequency in accordance with the above-mentioned provisions shall not be earlier than the date of completion of satisfactory transfer, in accordance with the procedure described in Resolution **8**, of all assignments to stations in the fixed and land mobile services operating in accordance with the Table and other provisions of the Radio Regulations recorded in the Master Register and which may be affected by such maritime mobile operations on that frequency.

545 The band 25 550 — 25 600 kHz is allocated to the fixed and mobile, except aeronautical mobile, service 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 — 38.25

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	

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**).

MHz
38.25 — 47

Allocation to Services		
Region 1	Region 2	Region 3
38.25 — 39.986	FIXED MOBILE	
39.986 — 40.02	FIXED MOBILE Space Research	
40.02 — 40.98	FIXED MOBILE 548	
40.98 — 41.015	FIXED MOBILE Space Research 549 550 551	
41.015 — 44	FIXED MOBILE 549 550 551	
44 — 47	FIXED MOBILE 551 552	

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**.

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 *Additional allocation:* in France and Monaco, the band 41 — 47 MHz is also allocated to the broadcasting service on a primary basis until 1 January 1986 and, in the United Kingdom, until 1 January 1987.

552 *Additional allocation:* in Australia and New Zealand, the band 44 — 47 MHz is also allocated to the broadcasting service on a primary basis.

MHz
47 — 68

Allocation to Services		
Region 1	Region 2	Region 3
47 — 68 BROADCASTING	**47 — 50** FIXED MOBILE	**47 — 50** FIXED MOBILE BROADCASTING
	50 — 54 AMATEUR 556 557 558 560	
553 554 555 559 561	**54 — 68** BROADCASTING Fixed Mobile 562	**54 — 68** FIXED MOBILE BROADCASTING

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, Denmark, Finland, France, Gabon, Greece, Israel, Italy, the Lebanon, Liechtenstein, Luxembourg, Mali, Malta, Morocco, Nigeria, Norway, the Netherlands, Poland, the German Democratic Republic, the United Kingdom, Senegal, Sweden, Switzerland, Tunisia, Turkey and Yugoslavia, the band 47 — 68 MHz, and in Roumania, 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, Chad and Yemen (P.D.R. of), 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**).

MHz
68 — 75.2

Allocation to Services		
Region 1	Region 2	Region 3
68 — 74.8 FIXED MOBILE except aeronautical mobile	**68 — 72** BROADCASTING Fixed Mobile 563	**68 — 74.8** FIXED MOBILE
	72 — 73 FIXED MOBILE	
	73 — 74.6 RADIO ASTRONOMY 569 570	
	74.6 — 74.8 FIXED MOBILE	
564 565 567 568 571 572	572	566 568 571 572
74.8 — 75.2	AERONAUTICAL RADIONAVIGATION 572	

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 In Region 2, the fixed, mobile and broadcasting services previously authorized in the band 73 — 74.6 MHz may continue to operate on a non-interference basis to the radio astronomy service until 31 December 1985.

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, Hungary, 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 aeronautical marker beacons. Administrations 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.

Until 31 December 1989, administrations in Regions 2 and 3 should refrain from assigning frequencies to stations of other services in the bands 74.6 — 74.8 MHz and 75.2 — 75.4 MHz.

In the future 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.

MHz
75.2 — 88

Allocation to Services		
Region 1	Region 2	Region 3
75.2 — 87.5 FIXED MOBILE except aeronautical mobile	**75.2 — 75.4** FIXED MOBILE 571 572	
	75.4 — 76 FIXED MOBILE	**75.4 — 87** FIXED MOBILE
565 571 572 575 578	**76 — 88** BROADCASTING Fixed Mobile 576	573 574 577 579

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.

MHz
87 — 108

Allocation to Services		
Region 1	Region 2	Region 3
		87 — 100 FIXED MOBILE BROADCASTING 580
87.5 — 100 BROADCASTING 581 582	**88 — 100** BROADCASTING	
100 — 108	BROADCASTING 582 583 584 585 586 587 588 589 590	

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, Spain, France, Ireland, Italy, Liechtenstein, Monaco, the United Kingdom, Switzerland and Yemen (P.D.R. of), 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 *Additional allocation:* in the United Kingdom, the band 97.6 — 102.1 MHz is also allocated to the land mobile service on a permitted basis until 31 December 1989. The use of this band by the land mobile service is restricted to those stations in operation on 1 January 1980. The withdrawal of land mobile stations will be arranged in consultation with the administrations concerned.

583 In Region 1, existing systems in the fixed and mobile, except aeronautical mobile (R), services may continue to use the band 100 — 104 MHz on a primary basis until the date of entry into force of the new regional broadcasting agreement referred to in Resolution **510** or 1 January 1985, whichever is the earlier date.

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 Austria, Bulgaria, Hungary, Israel, Kenya, Mongolia, Poland, Syria, the German Democratic Republic, the United Kingdom, Somalia, Czechoslovakia and the U.S.S.R., 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, Roumania, Sweden, Turkey and Yugoslavia, the band 104 — 108 MHz is also allocated to the mobile, except aeronautical mobile (R), service on a permitted basis until 31 December 1995.

590 *Additional allocation:* in Italy, the band 104 — 108 MHz is also allocated to the land mobile service on a primary basis until the date of entry into force of the new regional broadcasting agreement referred to in Resolution **510** or 1 January 1985, whichever is the earlier date.

MHz
108 — 138

Allocation to Services		
Region 1	Region 2	Region 3
108 — 117.975	AERONAUTICAL RADIONAVIGATION	
117.975 — 136	AERONAUTICAL MOBILE (R) 501 591 592 593 594	
136 — 137	AERONAUTICAL MOBILE (R) Fixed Mobile except aeronautical mobile (R) 591 595	
137 — 138	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 596 597 598 599	

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.

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 for 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.

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 and shall be effected in accordance with internationally agreed plans for that service. 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 Recommendation **404**).

596 *Different category of service:* in Afghanistan, Saudi Arabia, Bahrain, Brunei, China, the United Arab Emirates, India, Indonesia, Iran, Iraq, Kuwait, Malaysia, Oman, Pakistan, Qatar, Singapore, Thailand, Yemen A.R. and Yemen (P.D.R. of), the allocation of the band 137 — 138 MHz 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, Jordan and Syria, the allocation of the 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, Greece, Hungary, the Lebanon, Mongolia, Poland, the German Democratic Republic, Roumania, Czechoslovakia, the U.S.S.R. and Yugoslavia, 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.

MHz
138 — 144

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

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, Sudan, Tanzania, Yemen A.R. and Yugoslavia, the band 138 — 144 MHz is also allocated to the fixed service on a primary basis.

MHz
144 — 150.05

<table>
<tr><th colspan="3">Allocation to Services</th></tr>
<tr><th>Region 1</th><th>Region 2</th><th>Region 3</th></tr>
<tr><td>144 — 146</td><td colspan="2">AMATEUR 510
AMATEUR-SATELLITE
605 606</td></tr>
<tr><td rowspan="2">146 — 149.9
FIXED
MOBILE except aeronautical mobile (R)
608</td><td>146 — 148
AMATEUR
607</td><td>146 — 148
AMATEUR
FIXED
MOBILE
607</td></tr>
<tr><td colspan="2">148 — 149.9
FIXED
MOBILE
608</td></tr>
<tr><td>149.9 — 150.05</td><td colspan="2">RADIONAVIGATION-SATELLITE
609</td></tr>
</table>

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.

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.

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.

MHz
150.05 — 174

Allocation to Services		
Region 1	Region 2	Region 3
150.05 — 153 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 610 612	**150.05 — 156.7625** FIXED MOBILE	
153 — 154 FIXED MOBILE except aeronautical mobile (R) Meteorological Aids		
154 — 156.7625 FIXED MOBILE except aeronautical mobile (R) 613	611 613	
156.7625 — 156.8375	MARITIME MOBILE (distress and calling) 501 613	
156.8375 — 174 FIXED MOBILE except aeronautical mobile 613 614 615	**156.8375 — 174** FIXED MOBILE 613 616 617 618	

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 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**).

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 *Additional allocation:* in Sweden and Switzerland the band 150.05 — 153 MHz is also allocated to the aeronautical mobile (OR) service on a secondary basis.

613 The frequency 156.8 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service. The conditions for the use of this frequency are contained in Article **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 that administration (see Article **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 radiocommunications on inland waterways subject to agreement between interested and affected administrations and taking into account current frequency usage and existing agreements.

614 *Alternative allocation:* in France and Monaco, the band 162 — 174 MHz is allocated to the broadcasting service on a primary basis until 1 January 1985.

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.

MHz
174 — 235

Allocation to Services		
Region 1	Region 2	Region 3
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	
	220 — 225 AMATEUR FIXED MOBILE Radiolocation 627	
223 — 230 BROADCASTING Fixed Mobile 622 628 629 631 632 633 634 635		**223 — 230** FIXED MOBILE BROADCASTING AERONAUTICAL RADIONAVIGATION Radiolocation 636 637
	225 — 235 FIXED MOBILE	
230 — 235 FIXED MOBILE 629 632 633 634 635 638 639		**230 — 235** FIXED MOBILE AERONAUTICAL RADIONAVIGATION 637

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, Belgium, Denmark, Finland, France, Italy, Liechtenstein, Monaco, Norway, the Netherlands, the United Kingdom, Sweden, Switzerland and Yemen (P.D.R. of), 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, nor 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, Austria, Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Luxembourg, Monaco, Norway, the Netherlands, Portugal, the United Kingdom, Sweden, Switzerland and Yemen (P.D.R. of), 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, nor 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, the band 216 — 225 MHz is allocated to the radiolocation service on a primary basis until 1 January 1990. On and after 1 January 1990, no new stations in that service may be authorized. Stations authorized prior to 1 January 1990 may continue to operate on a secondary basis.

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 *Additional allocation:* in Spain and Portugal, the band 223 — 235 MHz is also allocated to the aeronautical radionavigation service on a permitted basis until 1 January 1990, subject to not causing harmful interference to existing or planned broadcasting stations in other countries.

634 *Additional allocation:* in Sweden, the band 223 — 235 MHz is also allocated to the aeronautical radionavigation service on a permitted basis until 1 January 1990, subject to agreement obtained under the procedure set forth in Article **14**, and on condition that no harmful interference is caused to existing and planned broadcasting stations in other countries.

635 *Alternative allocation:* in Botswana, Lesotho, Namibia, South Africa, Swaziland and Zambia, 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 — 322	FIXED MOBILE 641	
322 — 328.6	FIXED MOBILE RADIO ASTRONOMY 644	
328.6 — 335.4	AERONAUTICAL RADIONAVIGATION 645	

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.

642 The frequency 243 MHz is the frequency in this band for use by survival craft stations and equipment used for survival purposes.

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).

MHz
335.4 — 401

Allocation to Services		
Region 1	Region 2	Region 3
335.4 — 399.9	FIXED MOBILE 641	
399.9 — 400.05	RADIONAVIGATION-SATELLITE 609	
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) SPACE RESEARCH (space-to-Earth) Space Operation (space-to-Earth) 647	

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, Colombia, Costa Rica, Cuba, Egypt, the United Arab Emirates, Ecuador, Hungary, Indonesia, Iran, Iraq, Israel, Kuwait, Liberia, Malaysia, Nigeria, Oman, Pakistan, the Philippines, Poland, Qatar, Syria, the German Democratic Republic, Roumania, 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.

MHz
401 — 420

Allocation to Services		
Region 1	Region 2	Region 3
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	
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	
406.1 — 410	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 648 650	
410 — 420	FIXED MOBILE except aeronautical mobile	

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 band 406 — 406.1 MHz is reserved solely for the use and development of low-power (not to exceed 5 W) emergency position-indicating radiobeacon (EPIRB) systems using space techniques.

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**).

MHz
420 — 470

Allocation to Services		
Region 1	Region 2	Region 3
420 — 430	FIXED MOBILE except aeronautical mobile Radiolocation 651 652 653	
430 — 440 AMATEUR RADIOLOCATION 653 654 655 656 657 658 659 661 662 663 664 665	**430 — 440** RADIOLOCATION Amateur 653 658 659 660 663 664	
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	

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**).

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.

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 radiolocation 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, Bangladesh, Brunei, 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 and Togo, 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, Gabon, Hungary, Mali, Mongolia, Niger, Poland, the German Democratic Republic, Roumania, 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**).

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 Brazil, France and 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 until 1 January 1990, subject to agreement obtained under the procedure set forth in Article **14**. After 1 January 1990, the band 433.75 — 434.25 MHz will be allocated in the same countries 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, Hungary, 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**.

MHz
470 — 890

Allocation to Services		
Region 1	**Region 2**	**Region 3**
470 — 790 BROADCASTING 676 680 681 682 683 684 685 686 687 689 693 694	**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)	
790 — 862 FIXED BROADCASTING 694 695 696 697 698 699 702	**614 — 806** BROADCASTING Fixed Mobile 675 692 693	**610 — 890** FIXED MOBILE BROADCASTING
862 — 890 FIXED MOBILE except aeronautical mobile BROADCASTING 703 699 704	**806 — 890** FIXED MOBILE BROADCASTING 700	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 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, Ecuador, the United States, Guyana and Jamaica, 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, Kenya, Libya, Senegal, Sudan, Syria, and Yemen (P.D.R. of), 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.

678 *Additional allocation:* in Costa Rica, El Salvador, Ecuador, the United States, Guatemala, Guyana, Honduras, Jamaica 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 *Additional allocation:* in the United Kingdom, the following bands are also allocated to the aeronautical radionavigation service on a primary basis: 582 — 590 MHz until 31 December 1987; 598 — 606 MHz until 31 December 1994. All new assignments to stations in the aeronautical radionavigation service in these bands 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.

681 *Additional allocation:* in Belgium, the band 582 — 606 MHz is also allocated to the radionavigation service on a primary basis until 31 December 1984.

682 *Additional allocation:* in France and Italy, the band 582 — 606 MHz is also allocated to the radionavigation service on a permitted basis until 1 January 1990.

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.

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.

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**.

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 dB (W/m^2) 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.

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, Denmark, Finland, Israel, Liechtenstein, Norway, the Netherlands, Sweden, Switzerland and Yugoslavia, the band 790 — 830 MHz, and in these same countries and in Spain and France, 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 *Additional allocation:* in Austria, the band 790 — 862 MHz is also allocated to the mobile, except aeronautical mobile, service on a secondary basis.

699 *Additional allocation:* in Norway and Sweden, the bands 806 — 890 MHz and 942 — 960 MHz are also allocated to the mobile-satellite, except aeronautical mobile-satellite, 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**. This service shall not cause harmful interference to services operating in accordance with the Table.

700 *Additional allocation:* in Region 2, the band 806 — 890 MHz is also allocated to the mobile-satellite, except aeronautical 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**.

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, 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**. This service shall not cause harmful interference to services operating in accordance with the Table.

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, Libya and Morocco. Such operations shall be in accordance with the Final Acts of the African VHF/UHF Broadcasting Conference, Geneva, 1963.

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 — 960

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 705 **902 — 928** FIXED Amateur Mobile except aeronautical mobile Radiolocation 705 707 **928 — 942** FIXED MOBILE except aeronautical mobile Radiolocation 705	**890 — 942** FIXED MOBILE BROADCASTING Radiolocation 706
942 — 960 FIXED MOBILE except aeronautical mobile BROADCASTING 703 699 704	**942 — 960** FIXED Mobile 708	**942 — 960** FIXED MOBILE BROADCASTING 701

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. 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**.

708 *Different category of service:* in the United States, the allocation of the bands 942 — 947 MHz and 952 — 960 MHz to the mobile service is on a primary basis (see No. **425**) and subject to agreement obtained under the procedure set forth in Article **14**.

MHz
960 — 1 215

Allocation to Services		
Region 1	Region 2	Region 3
960 — 1 215	AERONAUTICAL RADIONAVIGATION 709	

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.

MHz
1 215 — 1 240

Allocation to Services		
Region 1	Region 2	Region 3
1 215 — 1 240	RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) 710 711 712 713	

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.

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 — 1 300

Allocation to Services		
Region 1	Region 2	Region 3
1 240 — 1 260	RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) 710 Amateur 711 712 713 714	
1 260 — 1 300	RADIOLOCATION Amateur 664 711 712 713 714	

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.

MHz
1 300 — 1 350

Allocation to Services		
Region 1	Region 2	Region 3
1 300 — 1 350	AERONAUTICAL RADIONAVIGATION 717 Radiolocation 715 716 718	

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**).

MHz
1 350 — 1 427

Allocation to Services		
Region 1	Region 2	Region 3
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	

719 In Bulgaria, Hungary, Mongolia, Poland, the German Democratic Republic, Roumania, 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.

MHz
1 427 — 1 525

Allocation to Services		
Region 1	Region 2	Region 3
1 427 — 1 429	SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 722	
1 429 — 1 525 FIXED MOBILE except aeronautical mobile 722	**1 429 — 1 525** FIXED MOBILE 723 722	

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.

MHz
1 525 — 1 530

Allocation to Services		
Region 1	Region 2	Region 3
1 525 — 1 530	**1 525 — 1 530**	**1 525 — 1 530**
SPACE OPERATION (space-to-Earth)	SPACE OPERATION (space-to-Earth)	SPACE OPERATION (space-to-Earth)
FIXED	Earth Exploration-Satellite	FIXED
Earth Exploration-Satellite	Fixed	Earth Exploration-Satellite
Mobile except aeronautical mobile 724	Mobile 723	Mobile 723 724
722 725	722	722

724 *Different category of service:* in Afghanistan, Saudi Arabia, Bahrain, Bulgaria, Cameroon, Egypt, the United Arab Emirates, France, Hungary, Iran, Iraq, Israel, Kuwait, the Lebanon, Morocco, Mongolia, Oman, Poland, Qatar, Syria, the German Democratic Republic, Roumania, Czechoslovakia, the U.S.S.R., Yemen (P.D.R. of) 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.

MHz
1 530 — 1 535

Allocation to Services		
Region 1	Region 2	Region 3
1 530 — 1 535	**1 530 — 1 535**	
SPACE OPERATION (space-to-Earth)	SPACE OPERATION (space-to-Earth)	
MARITIME MOBILE-SATELLITE (space-to-Earth)	MARITIME MOBILE-SATELLITE (space-to-Earth)	
Earth Exploration-Satellite	Earth Exploration-Satellite	
Fixed	Fixed	
Mobile except aeronautical mobile	Mobile 723	
722 726	722 726	

726 The allocation to the maritime mobile-satellite service in the band 1 530 — 1 535 MHz shall be effective from 1 January 1990. Up to that date the allocation to the fixed service shall be on a primary basis in Regions 1 and 3.

MHz
1 535 — 1 559

Allocation to Services		
Region 1	Region 2	Region 3
1 535 — 1 544	MARITIME MOBILE-SATELLITE (space-to-Earth) 722 727	
1 544 — 1 545	MOBILE-SATELLITE (space-to-Earth) 722 727 728	
1 545 — 1 559	AERONAUTICAL MOBILE-SATELLITE (R) (space-to-Earth) 722 727 729 730	

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.

728 The use of the bands 1 544 — 1 545 MHz (space-to-Earth) and 1 645.5 — 1 646.5 MHz (Earth-to-space) by the mobile-satellite service is limited to distress and safety operations.

729 Transmissions in the band 1 545 — 1 559 MHz from terrestrial aeronautical 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.

730 *Additional allocation:* in the Federal Republic of Germany, Austria, Bulgaria, Cameroon, Guinea, Hungary, Indonesia, Libya, Mali, Mongolia, Nigeria, Poland, the German Democratic Republic, Roumania, Senegal, 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.

MHz
1 559 — 1 626.5

Allocation to Services		
Region 1	Region 2	Region 3
1 559 — 1 610	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) 722 727 730 731	
1 610 — 1 626.5	AERONAUTICAL RADIONAVIGATION 722 727 730 732 733 734	

731 *Alternative allocation:* in Sweden, the band 1 590 — 1 610 MHz is allocated to the aeronautical radionavigation service on a primary basis.

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 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**.

734 The band 1 610.6 — 1 613.8 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**).

MHz
1 626.5 — 1 660.5

Allocation to Services		
Region 1	Region 2	Region 3
1 626.5 — 1 645.5	MARITIME MOBILE-SATELLITE (Earth-to-space) 722 727 730	
1 645.5 — 1 646.5	MOBILE-SATELLITE (Earth-to-space) 722 728	
1 646.5 — 1 660	AERONAUTICAL MOBILE-SATELLITE (R) (Earth-to-space) 722 727 730 735	
1 660 — 1 660.5	AERONAUTICAL MOBILE-SATELLITE (R) (Earth-to-space) RADIO ASTRONOMY 722 735 736	

735 Transmissions in the band 1 646.5 — 1 660.5 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.

736 In making assignments to stations of other services to which the band 1 660 — 1 670 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**).

MHz
1 660.5 — 1 670

Allocation to Services		
Region 1	Region 2	Region 3
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	

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 1 660.5 — 1 668.4 MHz to the fixed and the mobile, except aeronautical mobile, service 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 1 660.5 — 1 668.4 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 1 665 MHz and 1 667 MHz, administrations are urged to give all practicable protection in the band 1 660.5 — 1 668.4 MHz for future research in radio astronomy, particularly by eliminating air-to-ground transmissions in the meteorological aids service in the band 1 664.4 — 1 668.4 MHz as soon as practicable.

MHz
1 670 — 1 690

Allocation to Services		
Region 1	Region 2	Region 3
1 670 — 1 690	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 722	

MHz
1 690 — 1 700

Allocation to Services		
Region 1	Region 2	Region 3
1 690 — 1 700	**1 690 — 1 700**	
METEOROLOGICAL AIDS	METEOROLOGICAL AIDS	
METEOROLOGICAL-SATELLITE (space-to-Earth)	METEOROLOGICAL-SATELLITE (space-to-Earth)	
Fixed		
Mobile except aeronautical mobile		
671 722 741	671 722 740 742	

740 *Additional allocation:* in Afghanistan, Costa Rica, Cuba, India, Iran, Malaysia, Pakistan, Singapore, Sri Lanka and Thailand, the band 1 690 — 1 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

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.

MHz
1 700 — 1 710

Allocation to Services		
Region 1	Region 2	Region 3
1 700 — 1 710	**1 700 — 1 710**	
FIXED	FIXED	
METEOROLOGICAL-SATELLITE (space-to-Earth)	METEOROLOGICAL-SATELLITE (space-to-Earth)	
Mobile except aeronautical mobile	MOBILE except aeronautical mobile	
671 722	671 722 743	

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.

MHz
1 710 — 2 290

Allocation to Services		
Region 1	Region 2	Region 3
1 710 — 2 290	**1 710 — 2 290**	
FIXED	FIXED	
Mobile	MOBILE	
722 744 746 747 748 750	722 744 745 746 747 748 749 750	

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, Hungary, Mali, Mongolia, Poland, the German Democratic Republic, Roumania, 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**.

747 Subject to agreement obtained under the procedure set forth in Article **14**, the band 2 025 — 2 110 MHz may also be used for Earth-to-space and space-to-space transmissions in the space research, space operation and earth exploration-satellite services. The services using space-to-space transmissions shall operate in accordance with the provisions of Nos. **2557** to **2560** and shall not cause harmful interference to the other space services.

748 Subject to agreement obtained under the procedure set forth in Article **14**, the band 2 110 — 2 120 MHz may also be used for Earth-to-space transmissions in the space research (deep space) service.

749 Subject to agreement obtained under the procedure set forth in Article **14**, the band 2 110 — 2 120 MHz may also be used in Japan for the space research (Earth-to-space) and space operation (Earth-to-space) services until 31 December 1990.

750 Subject to agreement obtained under the procedure set forth in Article **14**, the band 2 200 — 2 290 MHz may also be used for space-to-Earth and space-to-space transmissions in the space research, space operations and earth exploration-satellite services. These services shall operate in accordance with the provisions of Nos. **2557** to **2560**; the space-to-space transmissions shall not cause harmful interference to the other space services.

MHz
2 290 — 2 450

Allocation to Services		
Region 1	Region 2	Region 3
2 290 — 2 300 FIXED SPACE RESEARCH (deep space) (space-to-Earth) Mobile except aeronautical mobile	**2 290 — 2 300** FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	
2 300 — 2 450 FIXED Amateur Mobile Radiolocation 664 752	**2 300 — 2 450** FIXED MOBILE RADIOLOCATION Amateur 664 751 752	

751 In Australia, the United States and Papua New Guinea, the use of the band 2 310 — 2 390 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile services.

752 The band 2 400 — 2 500 MHz (centre frequency 2 450 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**.

MHz
2 450 — 2 500

Allocation to Services		
Region 1	Region 2	Region 3
2 450 — 2 500	**2 450 — 2 500**	
FIXED	FIXED	
MOBILE	MOBILE	
Radiolocation	RADIOLOCATION	
752 753	752	

753 In France, the band 2 450 — 2 550 MHz is allocated on a primary basis to the radiolocation service and on a secondary basis to the fixed and mobile services (see Nos. **424** and **425**). 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.

MHz
2 500 — 2 655

Allocation to Services		
Region 1	Region 2	Region 3
2 500 — 2 655 FIXED 762 763 764 MOBILE except aeronautical mobile BROADCASTING-SATELLITE 757 760 720 753 756 758 759	**2 500 — 2 655** FIXED 762 764 FIXED-SATELLITE (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING-SATELLITE 757 760 720 755	**2 500 — 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

754 Subject to agreement obtained under the procedure set forth in Article **14**, the band 2 500 — 2 535 MHz may also be used in Region 3 for the mobile-satellite (space-to-Earth), except aeronautical mobile-satellite, service for operation limited to within national boundaries.

755 *Additional allocation:* in Canada, the band 2 500 — 2 550 MHz is also allocated to the radiolocation service on a primary basis.

756 *Additional allocation:* in the United Kingdom, the band 2 500 — 2 600 MHz is also allocated to the radiolocation service on a secondary basis.

757 The use of the band 2 500 — 2 690 MHz by the broadcasting-satellite 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**.

758 *Alternative allocation:* in the Federal Republic of Germany and Greece, the band 2 500 — 2 690 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.

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 — 2 690	**2 655 — 2 690**	**2 655 — 2 690**
FIXED 762 763 764	FIXED 762 764	FIXED 762 764
MOBILE except aeronautical mobile	FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 761	FIXED-SATELLITE (Earth-to-space) 761
BROADCASTING-SATELLITE 757 760	MOBILE except aeronautical mobile	MOBILE except aeronautical mobile
Earth Exploration-Satellite (passive)	BROADCASTING-SATELLITE 757 760	BROADCASTING-SATELLITE 757 760
Radio Astronomy	Earth Exploration-Satellite (passive)	Earth Exploration-Satellite (passive)
Space Research (passive)	Radio Astronomy	Radio Astronomy
	Space Research (passive)	Space Research (passive)
758 759 765	765	765 766

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 — 2 690 MHz may also be used in Region 3 for the mobile-satellite (Earth-to-space), except aeronautical mobile-satellite, service for operation limited to within national boundaries.

MHz
2 690 — 2 700

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	

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, Bulgaria, Cameroon, the Central African Republic, the Congo, the Ivory Coast, Cuba, Egypt, the United Arab Emirates, Ethiopia, Gabon, Guinea, Guinea-Bissau, Hungary, Iran, Iraq, Israel, the Lebanon, Malaysia, Malawi, Mali, Morocco, Mauritania, Mongolia, Nigeria, Oman, Pakistan, the Philippines, Poland, Qatar, Syria, the German Democratic Republic, Roumania, Singapore, Somalia, Sri Lanka, Czechoslovakia, Thailand, Tunisia, the U.S.S.R., Yemen A.R., Yemen (P.D.R. of), 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.

MHz
2 700 — 3 100

Allocation to Services		
Region 1	Region 2	Region 3
2 700 — 2 900	AERONAUTICAL RADIONAVIGATION 717 Radiolocation 770 771	
2 900 — 3 100	RADIONAVIGATION 773 774 775 Radiolocation 772	

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 2 850 — 2 900 MHz is also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars.

772 In the bands 2 900 — 3 100 MHz, 5 470 — 5 650 MHz and 9 200 — 9 300 MHz, the use of shipborne transponder systems shall be confined to the sub-bands 2 930 — 2 950 MHz, 5 470 — 5 480 MHz and 9 280 — 9 300 MHz.

773 The use of the band 2 900 — 3 100 MHz by the aeronautical radionavigation service is limited to ground-based radars.

774 In the bands 2 900 — 2 920 MHz and 9 300 — 9 320 MHz in the maritime radionavigation service, the use of shipborne radars other than those existing on 1 January 1976 is not permitted.

775 In the bands 2 920 — 3 100 MHz and 9 320 — 9 500 MHz in the maritime radionavigation service, the use of fixed-frequency radar beacons (racons) on land or at sea is not permitted.

MHz
3 100 — 3 300

Allocation to Services		
Region 1	Region 2	Region 3
3 100 — 3 300	RADIOLOCATION 713 776 777 778	

776 In the band 3 100 — 3 300 MHz, radar beacons (racons) and shipborne radars on merchant ships may operate within the band 3 100 — 3 266 MHz.

777 *Additional allocation:* in Bulgaria, Canada, Cuba, Hungary, Mongolia, Poland, the German Democratic Republic, Roumania, 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**).

MHz
3 300 — 3 400

Allocation to Services		
Region 1	Region 2	Region 3
3 300 — 3 400	**3 300 — 3 400**	**3 300 — 3 400**
RADIOLOCATION	RADIOLOCATION	RADIOLOCATION
	Amateur	Amateur
	Fixed	
	Mobile	
778 779 780	778 780	778 779

779 *Additional allocation:* in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, China, the Congo, the United Arab Emirates, India, Indonesia, Iran, Iraq, Israel, Japan, Kuwait, the Lebanon, Libya, Malaysia, Oman, Pakistan, Qatar, Syria, Singapore, Sri Lanka and Thailand, 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, Hungary, Mongolia, Poland, the German Democratic Republic, Roumania, 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 — 4 200

Allocation to Services		
Region 1	Region 2	Region 3
3 400 — 3 600 FIXED FIXED-SATELLITE (space-to-Earth) Mobile Radiolocation 781 782 785	**3 400 — 3 500** FIXED FIXED-SATELLITE (space-to-Earth) Amateur Mobile Radiolocation 784 664 783	
3 600 — 4 200 FIXED FIXED-SATELLITE (space-to-Earth) Mobile	**3 500 — 3 700** FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation 784 786	
	3 700 — 4 200 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 787	

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 *Different category of service:* in Austria, the allocation of the band 3 400 — 3 500 MHz to the radiolocation service is on a primary basis (see No. **425**), subject to the agreement of the Administrations of the following countries: Hungary, Italy, the German Democratic Republic, Czechoslovakia and Yugoslavia. Such use is limited to ground-based stations. However, this Administration is urged to cease operations by 1985. After this date, this Administration shall take all practicable steps to protect the fixed-satellite service and coordination requirements shall not be imposed on the fixed-satellite service.

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.

MHz
4 200 — 4 400

Allocation to Services		
Region 1	Region 2	Region 3
4 200 — 4 400	AERONAUTICAL RADIONAVIGATION 789 788 790 791	

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**.

MHz
4 400 — 4 990

Allocation to Services		
Region 1	Region 2	Region 3
4 400 — 4 500	FIXED MOBILE	
4 500 — 4 800	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 792	
4 800 — 4 990	FIXED MOBILE 793 Radio Astronomy 720 778 794	

792 *Alternative allocation:* in Belgium, Norway, the Netherlands and the United Kingdom, the band 4 500 — 4 800 MHz is allocated to the fixed and mobile services on a primary basis. Such use shall not impose power flux-density limitations on the fixed-satellite service greater than those given in No. **2566**.

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**).

MHz
4 990 — 5 000

Allocation to Services		
Region 1	Region 2	Region 3
4 990 — 5 000	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space Research (passive) 795	

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**).

MHz
5 000 — 5 470

Allocation to Services		
Region 1	Region 2	Region 3
5 000 — 5 250	AERONAUTICAL RADIONAVIGATION 733 796 797	
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	

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**.

798 *Additional allocation:* in Austria, Bulgaria, Hungary, Libya, Mongolia, Poland, the German Democratic Republic, Roumania, 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.

MHz
5 470 — 5 650

Allocation to Services		
Region 1	Region 2	Region 3
5 470 — 5 650	MARITIME RADIONAVIGATION 772 Radiolocation 800 801 802	

800 *Additional allocation:* in Afghanistan, Austria, Bulgaria, Hungary, Iran, Mongolia, Poland, the German Democratic Republic, Roumania, 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.

MHz
5 650 — 5 725

Allocation to Services		
Region 1	Region 2	Region 3
5 650 — 5 725	RADIOLOCATION Amateur Space Research (deep space) 664 801 803 804 805	

803 *Additional allocation:* in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, 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, Malta, Niger, Nigeria, Pakistan, the Philippines, Qatar, Syria, Singapore, Sri Lanka, Tanzania, Chad, Thailand and Yemen (P.D.R. of), 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, Hungary, Mongolia, Poland, the 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 — 5 925

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

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.

MHz
5 925 — 7 250

Allocation to Services		
Region 1	Region 2	Region 3
5 925 — 7 075	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 791 809	
7 075 — 7 250	FIXED MOBILE 809 810 811	

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.

MHz
7 250 — 7 550

Allocation to Services		
Region 1	Region 2	Region 3
7 250 — 7 300	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 812	
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	

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 precedure set forth in Article **14**.

MHz
7 550 — 8 025

Allocation to Services		
Region 1	Region 2	Region 3
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 — 7 975	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 812	
7 975 — 8 025	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 812	

MHz
8 025 — 8 175

Allocation to Services		
Region 1	Region 2	Region 3
8 025 — 8 175	**8 025 — 8 175**	**8 025 — 8 175**
FIXED	EARTH EXPLORATION-SATELLITE (space-to-Earth)	FIXED
FIXED-SATELLITE (Earth-to-space)	FIXED	FIXED-SATELLITE (Earth-to-space)
MOBILE	FIXED-SATELLITE (Earth-to-space)	MOBILE
Earth Exploration-Satellite (space-to-Earth) 813 815	MOBILE 814	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 — 8 400

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

MHz
8 400 — 8 500

Allocation to Services		
Region 1	Region 2	Region 3
8 400 — 8 500	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 816 817 818	

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.

MHz
8 500 — 8 850

Allocation to Services		
Region 1	Region 2	Region 3
8 500 — 8 750	RADIOLOCATION 713 819 820	
8 750 — 8 850	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 821 822	

819 *Additional allocation:* in Saudi Arabia, Bahrain, Bangladesh, Burundi, Cameroon, China, the Congo, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guinea, Guyana, Indonesia, Iran, Iraq, Israel, Jamaica, Kuwait, Libya, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Nigeria, Oman, Pakistan, Qatar, Syria, Senegal, Singapore, Somalia, Sri Lanka, Tanzania, Chad, Thailand, Togo and Tunisia, 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.

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.

MHz
8 850 — 9 300

Allocation to Services		
Region 1	Region 2	Region 3
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 772 823 824	

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.

MHz
9 300 — 10 000

Allocation to Services		
Region 1	Region 2	Region 3
9 300 — 9 500	RADIONAVIGATION 774 775 Radiolocation 825	
9 500 — 9 800	RADIOLOCATION RADIONAVIGATION 713	
9 800 — 10 000	RADIOLOCATION Fixed 826 827 828	

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.

826 *Different category of service:* in Afghanistan, Algeria, Saudi Arabia, Austria, Bahrain, Bangladesh, 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, Pakistan, Qatar, Singapore, Somalia, Sudan, Sri Lanka, Sweden, Thailand, Trinidad and Tobago, and Yemen (P.D.R. of), 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 — 10.6

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	

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, China, Ecuador, Spain, Japan, Kenya, Morocco, Nigeria, Sweden, Tanzania and Thailand, the band 10.45 — 10.5 GHz is also allocated to the fixed and mobile services on a primary basis.

GHz
10.6 — 10.7

Allocation to Services		
Region 1	Region 2	Region 3
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	

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, China, Colombia, the Republic of Korea, Costa Rica, Cuba, Egypt, the United Arab Emirates, Ecuador, Hungary, Iran, Iraq, Israel, Japan, Kuwait, the Lebanon, Mongolia, Pakistan, Poland, Qatar, the German Democratic Republic, Roumania, Czechoslovakia, the U.S.S.R. 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 — 11.7

Allocation to Services		
Region 1	Region 2	Region 3
10.7 — 11.7 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 835 MOBILE except aeronautical mobile	**10.7 — 11.7** FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	

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.

GHz
11.7 — 12.75

Allocation to Services		
Region 1	Region 2	Region 3
11.7 — 12.5 FIXED BROADCASTING BROADCASTING-SATELLITE Mobile except aeronautical mobile 838 840	**11.7 — 12.1** FIXED 837 FIXED-SATELLITE (space-to-Earth) Mobile except aeronautical mobile 836 839 840	**11.7 — 12.2** FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 838 840
	12.1 — 12.3 FIXED 837 FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 839 840 841 842 843 844	**12.2 — 12.5** FIXED MOBILE except aeronautical mobile BROADCASTING 838 840 845
12.5 — 12.75 FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 840 848 849 850	**12.3 — 12.7** FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 839 840 843 844 846	**12.5 — 12.75** FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile BROADCASTING-SATELLITE 847 840
	12.7 — 12.75 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE except aeronautical mobile 840	

836 In Region 2, in the band 11.7 — 12.1 GHz, transponders on space stations 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. The upper limit of this band shall be modified in accordance with the decisions of the 1983 regional administrative radio conference for Region 2 (see No. **841**).

837 *Different category of service:* in Canada, Mexico and the United States, the allocation of the band 11.7 — 12.2 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 band 11.7 — 12.7 GHz in Region 2 by the fixed-satellite and broadcasting-satellite services is limited to national and sub-regional systems and 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** and Resolution **33**).

840 For the use of the band 11.7 — 12.75 GHz in Regions 1, 2 and 3, see Resolutions **31**, **34**, **504**, **700** and **701**.

841 The 1983 regional administrative radio conference for Region 2 will divide the band 12.1 — 12.3 GHz into two sub-bands. It will allocate the lower sub-band to the fixed-satellite service and the upper sub-band to the broadcasting-satellite, broadcasting, mobile except aeronautical mobile, and fixed services, all services being on a primary basis.

842 *Additional allocation:* the bands 12.1 — 12.3 GHz in Brazil and Peru, and 12.2 — 12.3 GHz in the United States, are also allocated to the fixed service on a primary basis.

843 In the band 12.1 — 12.7 GHz, the Region 2 space services, existing or planned before the 1983 regional administrative radio conference for Region 2, shall not impose restrictions on the elaboration of the plan for the broadcasting-satellite service in Region 2 and shall be operated under the conditions set forth by that conference.

844 In Region 2, in the band 12.1 — 12.7 GHz, existing and future terrestrial radiocommunication services shall not cause harmful interference to the space services operating in accordance with the broadcasting-satellite plan to be prepared at the 1983 regional administrative radio conference for Region 2, and shall not impose restrictions on the elaboration of such a plan. The lower limit of this band shall be modified in accordance with the decisions of that conference for Region 2 (see No. **841**).

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 12.3 — 12.7 GHz, assignments to stations of the broadcasting-satellite service made available in the plan to be established by the 1983 regional administrative radio conference for Region 2 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 accordance with that plan. With respect to the space services, this band shall be used principally for the broadcasting-satellite service. The lower limit of this band shall be modified in accordance with the decisions of that conference for Region 2 (see No. **841**).

847 The broadcasting-satellite service in the band 12.5 — 12.75 GHz in Region 3 is limited to community reception with a power flux-density not exceeding −111 dB(W/m²) as defined in Annex 8 of Appendix **30**.

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.

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, Poland, 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 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.

GHz
12.75 — 13.25

Allocation to Services		
Region 1	Region 2	Region 3
12.75 — 13.25	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Space Research (deep space) (space-to-Earth)	

GHz
13.25 — 14

Allocation to Services		
Region 1	Region 2	Region 3
13.25 — 13.4	AERONAUTICAL RADIONAVIGATION 851 852 853	
13.4 — 14	RADIOLOCATION Standard Frequency and Time Signal-Satellite (Earth-to-space) Space Research 713 853 854 855	

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, 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, Poland, the German Democratic Republic, Roumania, 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.

GHz
14 — 14.25

Allocation to Services		
Region 1	Region 2	Region 3
14 — 14.25	FIXED-SATELLITE (Earth-to-space) 858 RADIONAVIGATION 856 Space Research 857 859	

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, Australia, Bahrain, Bangladesh, Botswana, Cameroon, China, the Republic of Korea, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Kenya, Kuwait, Lesotho, the Lebanon, Malaysia, Malawi, Mali, Malta, Morocco, Mauritania, Niger, Pakistan, the Philippines, Qatar, Syria, Senegal, Singapore, Somalia, Sudan, Sri Lanka, Swaziland, Tanzania, Chad, Thailand and Yemen (P.D.R. of), 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 (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 and for Malta.

859 The band 14 — 14.5 GHz is also allocated to the land mobile-satellite service (Earth-to-space) on a secondary basis.

GHz
14.25 — 14.3

Allocation to Services		
Region 1	Region 2	Region 3
14.25 — 14.3	FIXED-SATELLITE (Earth-to-space) 858 RADIONAVIGATION 856 Space Research 857 859 860 861	

860 *Additional allocation:* in the Federal Republic of Germany, Austria, Belgium, Denmark, Spain, Finland, France, Greece, Ireland, Iceland, Italy, Jordan, 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 — 14.5

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	

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**).

GHz
14.5 — 15.35

Allocation to Services		
Region 1	Region 2	Region 3
14.5 — 14.8	FIXED FIXED-SATELLITE (Earth-to-space) 863 MOBILE Space Research	
14.8 — 15.35	FIXED MOBILE Space Research 720	

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

GHz
15.35 — 15.7

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	

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.

GHz
15.7 — 17.7

Allocation to Services		
Region 1	Region 2	Region 3
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	

866 *Additional allocation:* in Afghanistan, Algeria, Angola, Saudi Arabia, Austria, Bahrain, Bangladesh, Cameroon, Costa Rica, Egypt, El Salvador, the United Arab Emirates, Finland, Guatemala, India, Indonesia, Iran, Kuwait, Libya, Malaysia, Malawi, Malta, Morocco, Mozambique, Nepal, Nicaragua, Oman, Pakistan, Qatar, Singapore, Somalia, Sudan, Sri Lanka, Sweden, Tanzania, Chad, Thailand, Yemen (P.D.R. of) 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 Germany, Angola, Saudi Arabia, Austria, Bahrain, Bangladesh, Cameroon, Costa Rica, El Salvador, the United Arab Emirates, Finland, Guatemala, Honduras, India, Indonesia, Iran, Iraq, Israel, Japan, Kuwait, Libya, Nepal, Nicaragua, 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 provisionally (see Resolution **101**).

869 The use of the band 17.3 — 18.1 GHz by the fixed-satellite (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.

GHz
17.7 — 19.7

Allocation to Services		
Region 1	Region 2	Region 3
17.7 — 18.1	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE	
18.1 — 18.6	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 870	
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
18.8 — 19.7	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	

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**.

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
19.7 — 22

Allocation to Services		
Region 1	Region 2	Region 3
19.7 — 20.2	FIXED-SATELLITE (space-to-Earth) Mobile-Satellite (space-to-Earth) 873	
20.2 — 21.2	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard Frequency and Time Signal-Satellite (space-to-Earth) 873	
21.2 — 21.4	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	
21.4 — 22	FIXED MOBILE	

873 *Additional allocation:* in Afghanistan, Algeria, Angola, Saudi Arabia, Bahrain, Bangladesh, Brazil, Cameroon, China, the Congo, the Republic of Korea, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Kenya, Kuwait, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Nigeria, 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.

GHz
22 — 22.5

Allocation to Services		
Region 1	Region 2	Region 3
22 — 22.21	FIXED MOBILE except aeronautical mobile 874	
22.21 — 22.5	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 875 876	

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**).

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.

GHz
22.5 — 23.6

Allocation to Services		
Region 1	Region 2	Region 3
22.5 — 22.55 FIXED MOBILE	**22.5 — 22.55** FIXED MOBILE BROADCASTING-SATELLITE 877 878	
22.55 — 23 FIXED INTER-SATELLITE MOBILE 879	**22.55 — 23** FIXED INTER-SATELLITE MOBILE BROADCASTING-SATELLITE 877 878 879	
23 — 23.55	FIXED INTER-SATELLITE MOBILE 879	
23.55 — 23.6	FIXED MOBILE	

877 In Regions 2 and 3, the broadcasting-satellite service is authorized in the band 22.5 — 23 GHz, subject to agreement obtained under the procedure set forth in Article **14**.

878 *Additional allocation:* in Japan, the band 22.5 — 23 GHz is also allocated to the broadcasting service on a primary basis.

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**).

GHz
23.6 — 24.25

Allocation to Services		
Region 1	Region 2	Region 3
23.6 — 24	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 880	
24 — 24.05	AMATEUR AMATEUR-SATELLITE 881	
24.05 — 24.25	RADIOLOCATION Amateur Earth Exploration-Satellite (active) 881	

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
24.25 — 27.5

Allocation to Services		
Region 1	Region 2	Region 3
24.25 — 25.25	RADIONAVIGATION	
25.25 — 27	FIXED MOBILE Earth Exploration-Satellite (space-to-space) Standard Frequency and Time Signal-Satellite (Earth-to-space)	
27 — 27.5 FIXED MOBILE Earth Exploration-Satellite (space-to-space)	**27 — 27.5** FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Earth Exploration-Satellite (space-to-space)	

GHz
27.5 — 31

Allocation to Services		
Region 1	Region 2	Region 3
27.5 — 29.5	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE	
29.5 — 30	FIXED-SATELLITE (Earth-to-space) Mobile-Satellite (Earth-to-space) 882 883	
30 — 31	FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) Standard Frequency and Time Signal-Satellite (space-to-Earth) 883	

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.

883 *Additional allocation:* in Afghanistan, Saudi Arabia, Bahrain, Cameroon, China, the Republic of Korea, the United Arab Emirates, Ethiopia, India, Indonesia, Iran, Iraq, Israel, Japan, Kenya, Kuwait, the Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, 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.

GHz
31 — 31.5

Allocation to Services		
Region 1	Region 2	Region 3
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	

884 In the band 31 — 31.3 GHz the power flux-density limits specified in No. **2542** shall apply to the space research service.

885 *Different category of service:* in Bulgaria, Cuba, Hungary, Mongolia, Poland, the 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.

GHz
31.5 — 31.8

Allocation to Services		
Region 1	Region 2	Region 3
31.5 — 31.8	**31.5 — 31.8**	**31.5 — 31.8**
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)
RADIO ASTRONOMY	RADIO ASTRONOMY	RADIO ASTRONOMY
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)	SPACE RESEARCH (passive)
Fixed		Fixed
Mobile except aeronautical mobile		Mobile except aeronautical mobile
888 889	888	888

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, Hungary, Mongolia, Poland, the German Democratic Republic, Roumania, 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 — 33

Allocation to Services		
Region 1	Region 2	Region 3
31.8 — 32	RADIONAVIGATION Space Research 890 891 892	
32 — 32.3	INTER-SATELLITE RADIONAVIGATION Space Research 890 891 892 893	
32.3 — 33	INTER-SATELLITE RADIONAVIGATION 892 893	

890 *Different category of service:* in Australia, Spain and the United States, the allocation of the band 31.8 — 32.3 GHz to the space research service (deep space) in the space-to-Earth direction is on a primary basis (see No. **425**). This use shall not impose power flux-density constraints on the inter-satellite service in the band 32 — 32.3 GHz.

891 *Different category of service:* in Bulgaria, Cuba, Hungary, Mongolia, Poland, the German Democratic Republic, Czechoslovakia and the U.S.S.R., the allocation of the band 31.8 — 32.3 GHz to the space research service is on a primary basis (see No. **425**).

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, administrations shall take all necessary measures to prevent harmful interference between these two services, bearing in mind the safety aspects of the radionavigation service (see Recommendation **707**).

GHz
33 — 34.2

Allocation to Services		
Region 1	Region 2	Region 3
33 — 33.4	RADIONAVIGATION 892	
33.4 — 34.2	RADIOLOCATION 892 894	

894 *Additional allocation:* in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, Egypt, the United Arab Emirates, Spain, Finland, Gabon, Guinea, Indonesia, Iran, Iraq, Israel, 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 A.R. and Zaire, the band 33.4 — 36 GHz is also allocated to the fixed and mobile services on a primary basis.

GHz
34.2 — 36

Allocation to Services		
Region 1	Region 2	Region 3
34.2 — 35.2	RADIOLOCATION Space Research 895 896 894	
35.2 — 36	METEOROLOGICAL AIDS RADIOLOCATION 894 897	

895 *Different category of service:* in Australia, Spain and the United States, the allocation of the band 34.2 — 34.7 GHz to the space research (deep space) (Earth-to-space) service is on a primary basis (see No. **425**).

896 *Different category of service:* in Bulgaria, Cuba, Hungary, Poland, Mongolia, the German Democratic Republic, Czechoslovakia and the U.S.S.R., the allocation of the band 34.2 — 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.

GHz
36 — 40.5

Allocation to Services		
Region 1	Region 2	Region 3
36 — 37	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 898	
37 — 37.5	FIXED MOBILE 899	
37.5 — 39.5	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 899	
39.5 — 40.5	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	

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**).

899 Subject to agreement obtained under the procedure set forth in Article **14**, the band 37 — 39 GHz may also be used in Japan for Earth-to-space transmissions in the fixed-satellite service up to 31 December 1990.

GHz
40.5 — 43.5

Allocation to Services		
Region 1	Region 2	Region 3
40.5 — 42.5	BROADCASTING-SATELLITE /BROADCASTING/ Fixed Mobile	
42.5 — 43.5	FIXED FIXED-SATELLITE (Earth-to-space) 901 MOBILE except aeronautical mobile RADIO ASTRONOMY 900	

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.

GHz
43.5 — 50.2

Allocation to Services		
Region 1	Region 2	Region 3
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	

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.

GHz
50.2 — 59

Allocation to Services		
Region 1	Region 2	Region 3
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	
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	

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.

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**).

GHz
59 — 66

Allocation to Services		
Region 1	Region 2	Region 3
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	

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
66 — 76

Allocation to Services		
Region 1	Region 2	Region 3
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	
74 — 75.5	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE	
75.5 — 76	AMATEUR AMATEUR-SATELLITE	

GHz
76 — 86

Allocation to Services		
Region 1	Region 2	Region 3
76 — 81	RADIOLOCATION Amateur Amateur-Satellite 912	
81 — 84	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	
84 — 86	FIXED MOBILE BROADCASTING BROADCASTING-SATELLITE 913	

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
86 — 95

Allocation to Services		
Region 1	Region 2	Region 3
86 — 92	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 907	
92 — 95	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIOLOCATION 914	

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**).

GHz
95 — 116

Allocation to Services		
Region 1	Region 2	Region 3
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	

GHz
116 — 142

Allocation to Services		
Region 1	Region 2	Region 3
116 — 126	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE MOBILE 909 SPACE RESEARCH (passive) 722 915 916	
126 — 134	FIXED INTER-SATELLITE MOBILE 909 RADIOLOCATION 910	
134 — 142	MOBILE 902 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE Radiolocation 903 917 918	

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.

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**).

GHz
142 — 151

Allocation to Services		
Region 1	Region 2	Region 3
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	

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
151 — 182

Allocation to Services		
Region 1	Region 2	Region 3
151 — 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	

GHz
182 — 217

Allocation to Services		
Region 1	Region 2	Region 3
182 — 185	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 920 921	
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	

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
217 — 248

Allocation to Services		
Region 1	Region 2	Region 3
217 — 231	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 722 907	
231 — 235	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	
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	

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.

GHz
248 — 265

Allocation to Services		
Region 1	Region 2	Region 3
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	

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**).

GHz
265 — 400

Allocation to Services		
Region 1	Region 2	Region 3
265 — 275	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 926	
275 — 400	(Not allocated) 927	

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** and **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 Standards[1] in accordance with Nos. **1454** and **1582** and of Rules of Procedure[1] 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 organization of radio conferences in consultation, as

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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**.

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.

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 to 1040 NOT allocated.

ARTICLE 11

Coordination of Frequency Assignments to Stations in a Space Radiocommunication Service Except Stations in the Broadcasting-Satellite Service and to Appropriate Terrestrial Stations[1]

Section I. Procedures for the Advance Publication of Information on Planned Satellite Networks[2]

1041 *Publication of Information*

1042 § 1. (1) An administration (or one acting on behalf of a group of named administrations) which intends to establish a satellite system shall, prior to the coordination procedure in accordance with No. **1060** where applicable, send to the International Frequency Registration Board, not earlier than five years and preferably not later than two years before the date of bringing into service each satellite network of the planned system, the information listed in Appendix **4**.

1043 (2) Any amendments to the information sent concerning a planned satellite system in accordance with No. **1042** shall also be sent to the Board as soon as they become available.

1044 (3) The Board shall publish the information sent under Nos. **1042** and **1043** in a special section of its weekly circular and shall also, when the weekly circular contains such information, so advise all administrations by circular telegram. The circular telegram shall include the frequency bands to be used and, in the case of a geostationary satellite, the orbital location of the space station.

1045 (4) If the information is found to be incomplete, the Board shall publish it under No. **1044** and immediately seek, from the administration concerned, any clarification and information not provided. In

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A.11.1 [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 Regions 2 and 3) and 11.7-12.5 GHz (in Region 1), see also Article **15**.

A.11.2 [2] These procedures may be applicable to stations on board satellite launching vehicles.

such cases, the period of four months specified in No. **1047** shall count from the date of publication, under No. **1044**, of the complete information.

1046 *Comments on Published Information*

1047 § 2. If, after studying the information published under No. **1044**, any administration is of the opinion that interference which may be unacceptable may be caused to its existing or planned space radiocommunication services, it shall, within four months after the date of the weekly circular publishing the complete information listed in Appendix **4**, send its comments to the administration concerned. 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 that administration has no basic objections to the planned satellite network(s) of that system on which details have been published.

1048 *Resolution of Difficulties*

1049 § 3. (1) An administration receiving comments sent in accordance with No. **1047** 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 *a)* the administration responsible for the planned system 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 systems of other administrations. If no such means can be found, the administration concerned is then free to apply to other administrations concerned to solve 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 *c)* if after following the procedure outlined 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 systems involved in order to provide for the normal operation of both the planned and existing systems.

1054 (3) In their attempts to resolve the difficulties mentioned above administrations may seek the assistance of the Board.

1055 *Results of Advance Publication*

1056 § 4. An administration on behalf of which details of planned 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 a special section of its weekly circular and shall also, when the weekly circular contains such information, so inform all administrations by circular telegram.

1057 *Commencement of Coordination or Notification Procedures*

1058 § 5. In complying with the provisions of Nos. **1049** to **1054**, an administration responsible for a planned satellite system shall, if necessary, defer its commencement of the coordination procedure, or, where this is not applicable, the sending of its notices to the Board, by six

months after the date of the weekly circular containing the information listed in Appendix **4** on the relevant satellite network. However, in respect of those administrations with which difficulties have been resolved or which have responded favourably, the coordination procedure, where applicable, may be commenced prior to the expiry of the six months mentioned above.

Section II. Coordination of Frequency Assignments to a Space Station on a Geostationary Satellite or an Earth Station Communicating with Such a Space Station in Relation to Stations of Other Geostationary-Satellite Networks

1059 *Requirement for Coordination*

1060 § 6. (1) Before an administration (or, in the case of a space station, one acting on behalf of a group of 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.

1061 (2) Frequency assignments to which the provisions of No. **1060** are applicable are those:

1062 *a)* in the same frequency band as the planned assignment and in conformity with No. **1503**; *and*

1063 *b)* either recorded in the Master Register, or coordinated under the provisions of this Section; *or*

1064 *c)* to be taken into account for coordination with effect from the date of receipt by the Board, in accordance with No. **1074**, of the relevant information as annotated in Appendix **3**; *or*

1065 *d)* notified to the Board without any coordination in those cases where Nos. **1066** to **1071** apply.

1066 (3) No coordination under No. **1060** is required:

1067 *a)* 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 *b)* 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 *c)* when an administration proposes to notify or bring into use a new earth station within a service area of an existing satellite network, provided that the new earth station would not cause interference of a level greater than that which would be caused by an earth station pertaining to the same satellite network and whose characteristics have been published, together with the information concerning the space station, in accordance with No. **1078**;

1070 *d)* 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 *e)* between earth stations using frequency assignments in the same direction (either Earth-to-space or space-to-Earth).

1072 *Coordination Data*

1073 § 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 the coordination. The request concerning coordination of a space station or an associated earth station may specify all or some of the frequency assignments expected to be used by that space station, but thereafter each assignment shall be dealt with individually.

1074 (2) The administration requesting coordination shall at the 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. An administration believing that the provisions of Nos. **1066** to **1071** apply to its planned assignment may send to the Board the relevant information listed in Appendix **3**, either under this provision or in accordance with Nos. **1488** to **1491**. In the latter case, the Board shall immediately inform all administrations by circular telegram.

1075 § 8. On receipt of the information referred to in No. **1074**, the Board shall:

1076 *a)* immediately examine this information with respect 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 receipt 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;

1078 *c)* publish in a special section of its weekly circular the information received under No. **1074** and the result of the examination under Nos. **1076** and **1077**, together with a reference to the weekly circular in which details of the satellite network were published in accordance with Section I of this Article. When the weekly circular contains such information, the Board shall so inform all administrations by circular telegram.

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 shall promptly examine the matter with regard to interference[1] which would be caused to the service rendered by its stations in respect of which coordination is sought under No. **1060** or caused by these stations. 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.

1084.1 [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.

1085 (2) Either 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.

1086 *Results of Coordination*

1087 § 12. An administration which has initiated a coordination 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 and any changes in the characteristics of its frequency assignment. 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 a special section of its weekly circular and, when the weekly circular contains information on changes in the characteristics published, it shall 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 information 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 circular;

1092 *c)* there is disagreement between the administration seeking coordination and an administration with which coordination is sought as to the acceptable interference; *or*

1093 *d)* coordination between administrations is not possible for any other reason.

1094 (2) In so doing, the administration shall furnish the necessary 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**.

1099 (4) Where necessary, as part of the procedure under 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 (5) The Board may request additional information which it may require to assess the interference to the services concerned.

1101 (6) Where an administration fails to reply within thirty days of dispatch of the Board's telegram requesting an 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**, 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 harmful interference which may be caused to the services rendered by its space radiocommunication stations by the use of the assignment for which coordination was requested;

1103 *b)* that its space radiocommunication stations will not cause harmful interference to the use of the assignment for which coordination was requested.

1104 *Notification of Frequency Assignments in the Event of Continuing Disagreement*

1105 § 15. 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 publication of the request for coordination under No. **1078**, taking into consideration the provisions of No. **1496**.

Section III. Coordination of Frequency Assignments to an Earth Station in Relation to Terrestrial Stations

1106 *Requirement for Coordination*

1107 § 16. (1) Before an administration notifies to the Board or brings into use any frequency assignment to an earth station, 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 assignment with each administration whose territory lies wholly or partly within the coordination area[1] 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 individually.

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 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.

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**.

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 *a)* interference[1] which would be caused to 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.

1118.1 } **1119.1** } [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.

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*

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 harmful interference which may be caused to the services rendered by its terrestrial stations by the use of the assignment for which coordination was requested;

1144 *b)* that its terrestrial stations will not cause harmful interference to the use of the assignment for which coordination was requested.

1145 *Notification of Frequency Assignments in the Event of Continuing Disagreement*

1146 § 22. 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 No. **1496**.

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 area[1] 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*

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.

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.

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 with which coordination is sought shall promptly examine the matter with regard to interference[1] which would be caused to 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 shall, within an overall period of four months[2] from dispatch of the coordination data, either notify the administration requesting coordination of its agreement to the proposals or, if this is not possible, indicate the reasons therefor and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem.

1167 § 27. Either the administration seeking coordination or the administration with which coordination is sought may request additional information which it may require to assess the interference to the services 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

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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.

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 to **1213** NOT allocated.

ARTICLE 12

Notification and Recording in the Master International Frequency Register of Frequency Assignments[1] to Terrestrial Radiocommunication Stations[2, 3]

Section I. Notification of Frequency Assignments

1214 § 1. (1) Any frequency assignment[4] to a fixed, land, broadcasting[5], 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:

1215 *a)* if the use of the frequency concerned is capable of causing harmful interference to any service of another administration[6]; *or*

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 in frequency assignments to terrestrial stations in the frequency bands 11.7-12.2 GHz (in Regions 2 and 3) 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**.

1214.1 [4] 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 [5] With respect to assignments to broadcasting stations in the bands allocated exclusively to the broadcasting service between 5 950 kHz and 26 100 kHz, see Article **17**.

1215.1 [6] 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 frequency [1].

1218 (2) Similar notice [2] 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**.

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 Section 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.

1217.1 [1] Same text as for No. **1215.1**.

1218.1 [2] See Resolution **103**.

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 administration 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 B[1]. 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.* **1248***).*

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 telecommunication;

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 frequency assignments which are in conformity with the Allotment Plans appearing in Appendices **25**, **26**, **27*** and **27 Aer2*** to these Regulations; such frequency assignment shall be entered in the Master Register on receipt of the notice by the Board.

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 23 000 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 23 000 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 No. **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.

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

1321 (5) In the case of a notice which has received a favourable finding with respect to No. **1317** but unfavourable with respect to No. **1318**, the Board shall examine this notice with respect to the probability of harmful interference to the service rendered by a radiotelephone coast station for which a frequency assignment:

1322 *a)* is in conformity with an allotment in the Allotment Plan and is already recorded in the Master Register or may be so recorded in the future; *or*

1323 *b)* was recorded in the Master Register on a frequency specified in Appendix **16**, as a result of a favourable finding with respect to Nos. **1321** to **1324**; *or*

1324 *c)* was recorded in the Master Register on a frequency specified in Appendix **16**, after an unfavourable finding with respect to Nos. **1321** to **1324**, but has not, in fact, caused harmful interference to any frequency assignment to a coast radiotelephone station previously recorded in the Master Register.

1325 (6) According to the finding of the Board with respect to Nos. **1321** to **1324**, further action shall be in accordance with the provisions of Nos. **1249** to **1265** inclusive, or Nos. **1305** to **1307** inclusive, as appropriate, it being understood that in those provisions Nos. **1321** to **1324** shall be read for No. **1241**.

1326 § 25. (1) *Examination of Notices Concerning Frequencies Used for Reception by Coast Radiotelephone Stations in the Bands Allocated Exclusively to the Maritime Mobile Service Between 4 000 kHz and 23 000 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 particular those of No. **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 respect 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 (5) Any assignment of a frequency for reception by a coast radiotelephone station which has received a favourable finding with respect to No. **1328** but unfavourable with respect to No. **1329** shall be recorded in the Master Register. The date to be entered in Column 2b shall be that determined according to the relevant provisions of Section III of this Article.

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 *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 permissive change from one class of emission to another and the necessary bandwidth is within the channelling arrangement provided for in Appendix **27 Aer2***;

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

1337 *c)* the limitations of use set forth in Column 3 of the Plan have been appropriately observed;

1338 *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 (4) In the case of a notice in conformity with the provisions of Nos. **1335** to **1338**, but not with those of No. **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. 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 (5) 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:

1345 *a)* the assignment is in conformity with the primary allotments in the Allotment Plan for the aeronautical mobile (OR) service and the conditions specified in Appendix **26** (Parts III and IV);

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

1346 *b)* the assignment is in conformity with or satisfies the requirements for secondary allotments in the Allotment Plan for the aeronautical mobile (OR) service and the conditions specified in Appendix **26** (Part III, Section II, paragraph 4, sub-paragraph *d)*, and Part IV). In applying these provisions, the Board shall assume that the frequency will be used on a day-time basis;

1347 *c)* the assignment is the result of a permitted change from one class of emission to another, its occupied bandwidth is within the channelling arrangement provided for in Appendix **26** (Part III, Section II, paragraphs 1 and 2), and it meets all the conditions for a primary or secondary allotment in the Plan, except that the assigned frequency does not correspond numerically with one of the frequencies specified therein.

1348 (3) The technical criteria to be employed by the Board in its examination of these notices shall be those in Appendix **26** (Part III).

1349 (4) All frequency assignments referred to in No. **1343** 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.

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 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** and shall be included only in the annual list referred to in No. **1769**, which shall be considered as a supplement to the International Frequency List.

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:*

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*
4 219.4	*- 4 349.4*	*kHz*	
6 325.4	*- 6 493.9*	*kHz*	
8 435.4	*- 8 704.4*	*kHz*	
12 652.3	*- 13 070.8*	*kHz*	
16 859.4	*- 17 196.9*	*kHz*	
22 310.5	*- 22 561*	*kHz*	

1389 (2) For any assignment to which the provisions of No. **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 No. **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 Mobile Service Between 4 000 kHz and 23 000 kHz for Coast Radiotelephone Stations.*

1392 (2) If the finding is favourable with respect to Nos. **1317** and **1318**, the date of 7 June 1974 shall be entered in Column 2a.

1393 (3) For all other cases referred to in No. **1315**, the relevant date shall be entered in Column 2b (see Nos. **1250**, **1254**, **1255**, **1261**, **1265**, **1306** and **1307**).

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 Mobile Service Between 4 000 kHz and 23 000 kHz for Ship Radiotelephone Stations.*

1396 (2) If the finding is favourable with respect to Nos. **1328** and **1329**, the date of 7 June 1974 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 Mobile Service Between 4 000 kHz and 25 110 kHz for Radiotelegraph 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 Aeronautical 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 Aeronautical Mobile (OR) Service Between 3 025 kHz and 18 030 kHz.*

1407 (2) If the finding is favourable with respect to No. **1345**, the date of 3 December 1951 shall be entered in Column 2a.

1408 (3) If the finding is favourable with respect to No. **1346**, the date of 3 December 1951 shall be entered in Column 2b.

1409 (4) If the provisions of No. **1347** are found to be applicable, the date of 3 December 1951 shall be entered in Column 2a for a primary allotment, or in Column 2b for a secondary allotment.

1410 (5) In all other cases covered by No. **1343**, the date of receipt of the notice by the Board shall be entered in Column 2b.

1411 (6) For assignments to stations other than aeronautical 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 No. **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 No. **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 ratio 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 (excepting No. **1430**) and VII of this Article shall not be applied to frequency assignments in conformity with the Allotment Plans contained in Appendices **25**, **26**, **27** * 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

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

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 proceeding as are prescribed in the Convention for the settlement of international disputes.

1459 to **1487** NOT allocated.

ARTICLE 13

Notification and Recording in the Master International Frequency Register of Frequency Assignments[1] to Radio Astronomy and Space Radiocommunication Stations Except Stations in the Broadcasting-Satellite Service[2]

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*

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.

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 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 Regions 2 and 3) and 11.7-12.5 GHz (in Region 1), see also Article **15**.

1494 (4) A notice submitted in accordance with Nos. **1488** to **1491** and relating to a frequency assignment to mobile earth stations in a satellite system shall include the technical characteristics either of each mobile earth station, or of a typical mobile earth station, and an indication of the service area within which these stations are to be operated.

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 *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 relating to the coordination procedures and the probability of harmful interference which are the subject of the following sub-paragraphs;

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 examination[1] shall take into account the frequency assignments for transmission or reception already recorded in the Master Register:

1507 1) in application of No. **1526**, **1531**, **1534** or **1543**; *or*

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 No. **1362**, **1367**, **1370**, or **1373**; *or*

1506.1 [1] 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**.

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** *in Cases Where the Provisions of Nos.* **1504** *and* **1505** *Are Not Applicable (space station on board a non-geostationary satellite).*

1518 (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**, 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.

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.

1520 § 13. (1) *Finding Unfavourable with Respect to No.* **1503** *in Cases Where the Provisions of Nos.* **1504** *and* **1505** *Are Applicable.*

1521 (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 Nos. **1504**, **1505**, **1506** to **1508** and **1509** to **1512**, as appropriate, 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.

1522 (3) 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 unfavourable with respect to Nos. **1504**, **1505**, **1506** to **1508** or **1509** to **1512**, 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 administration insist upon reconsideration of the notice, the assignment shall be recorded in the Master Register with the understanding that the provisions of No. **1560** shall be applied. The date of receipt by the Board of the original notice shall be entered in Column 2d.

1523 (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 together with such suggestions as the Board is able to offer with a view to a satisfactory solution of the problem.

1524 (5) If the notifying administration resubmits the notice unchanged, it shall be treated in accordance with the provisions of No. **1523**.

If it is resubmitted 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 in accordance with the provisions of No. **1521** or **1522**, as appropriate. If it is resubmitted with modifications which, after re-examination, result in a favourable finding by the Board with respect to No. **1503**, it shall be treated as a new notice.

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 application of Nos. **1528** or **1089** to **1094** or **1130** to **1135** 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 Nos. **1506** to **1508** and **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.

1531 (4) Where the notifying administration resubmits the notice 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 (5) Where the notifying administration resubmits the notice 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 projected date of bringing into use of a frequency assignment may be extended on request of the notifying administration by four 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 eighteen months from the original projected date of bringing into use.

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 Nos. **1522** and **1544**, and as long 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 specified 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 No. **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 administrations 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 **1609** NOT allocated.

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.

1615 § 2. (1) The Board shall publish the information sent under Nos. **1611** to **1614** in a special section of its weekly circular[2] and shall

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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.

1615.1 [2] 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.

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.

1620 § 4. The administration requesting agreement under Nos. **1611** to **1613** and the administration responding under No. **1617** shall together[1] 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.

1622 § 6. Either administration may request the assistance of the Board in an attempt to resolve the problem.

1620.1 [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.

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].

1631 to **1655** NOT allocated.

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.

ARTICLE 15

Coordination, Notification and Recording of Frequency Assignments to Stations of the Broadcasting-Satellite Service in the Frequency Bands 11.7-12.2 GHz (in Regions 2 and 3) 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 Plan for the broadcasting-satellite service in the frequency bands 11.7-12.2 GHz (in Regions 2 and 3) and 11.7-12.5 GHz (in Region 1) adopted by the World Broadcasting-Satellite Administrative Radio Conference, Geneva, 1977 as contained in Appendix **30** 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.

1657 to **1681** NOT allocated.

ARTICLE 16

Procedure for Bringing Up to Date the Frequency Allotment[1] 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.

1686 (3) If it is requested by any administration, particularly by an administration of a country in need of special assistance, and if the

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A.16.1 [1] See No. **18**.

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 1747 NOT allocated.

ARTICLE 17

Procedure for the Bands Allocated Exclusively to the Broadcasting Service Between 5 950 kHz and 26 100 kHz

Section I. Submission of Seasonal High Frequency Broadcasting Schedules

1748 § 1. 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 § 2. The first schedules became effective on 4 September 1960 for the September-October period 1960. The closure dates for the receipt of schedules are set by 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 § 3. Two or more administrations may submit coordinated schedules containing their agreed projected frequency usage.

1751 § 4. 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 § 5. The schedules shall be submitted in the form prescribed in Appendix **2**, which specifies the data to be furnished for each assignment.

1753 § 6. The frequencies included in the schedules shall be in conformity with No. **1240** of these Regulations. To the extent practicable, the frequencies selected should correspond to listings in the Master International Frequency Register. Those administrations not having suitable listings in the Master Register may suggest any frequency considered appropriate, or may, if they so desire, indicate only the frequency band.

Section II. Preliminary Examination and Preparation of the Tentative High Frequency Broadcasting Schedule

1754 § 7. (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.

Section III. Technical Examination and Revision of the Tentative Schedule

1761 § 8. (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.

Section IV. Publication of the High Frequency Broadcasting Schedule

1766 § 9. 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 Schedule which were taken into account by the Board in the examination under Section III of this Article.

Section V. Annual High Frequency Broadcasting Frequency List

1769 § 10. A High Frequency Broadcasting Frequency List shall be published at the end of the first year of implementation of the procedure prescribed in this Article, including all frequency assignments which appear in the High Frequency Broadcasting Schedules for the year concerned. This list shall be issued as a supplement to the International Frequency List, and in the same general format. It shall also include symbols to indicate those assignments which were notified to the Board as being unsatisfactory in practice, as well as symbols to indicate the seasonal periods during which each assignment was used. A recapitulative list shall be issued annually thereafter.

Section VI. Miscellaneous Provisions

1770 § 11. 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 provision of this Article.

1771 § 12. 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 information 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 § 13. In applying the provisions of Article **22** of these Regulations, problems of harmful interference which may arise in frequency usage in the bands concerned shall be resolved by administrations by exercising the utmost goodwill and mutual cooperation and by giving due consideration to all the relevant technical and operational factors involved.

1773 to **1797** NOT allocated.

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].

1814.1 [1] In this matter, administrations should be guided by the latest relevant CCIR Recommendations.

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 **1841** NOT allocated.

1815.1 [1] In this matter, administrations should be guided by the latest 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. **3766**, **3767** and **5058** to **5060**.

1847 to **1871** NOT allocated.

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, aknowledge 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 authorization 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 radiocommunications 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 stations, there shall be added, when necessary, to the text written in the national language, a translation of the text in one of the working languages of the Union.

2025 § 4. (1) The government which issues a licence to a mobile station shall mention 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 circumstances where delay is likely to occur in the issue of a licence by the country in which it will be registered, the administration of the country from which the mobile 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 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 the lesser.

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 **2054** NOT allocated.

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.

2065 (5) When identification signals are transmitted they shall comply with the provisions of this Article.

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.

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.

2069 § 3. In transmissions carrying identification signals a station shall be identified by a call sign, by a maritime mobile service identity in accordance with Appendix **43**[1] 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.

2069.1 [1] For the application of Appendix **43**, see Resolution **313**.

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) All ship stations and ship earth stations with respect to which the provisions of Chapter **XI** apply and all 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**[1].

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, for the maritime mobile service identification system, be responsible for allocating nationality identification digits series to countries not included in the Table of Nationality Identification Digits (see Appendix **43**[1]).

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 identification numbers of its stations from the international series allocated 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

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2083.1 }
2087.1 }

[1] For the application of Appendix **43**, see Resolution **313**.

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 nationality identification digits series allocated to it and notify this information to the Secretary-General for inclusion in the relevant lists, as provided for in Article **26**.

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).

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:

2101.1 [1] For call sign series beginning with B, F, G, I, K, M, N, R 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.

— 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 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** and Resolution **313** and 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 **2179** NOT allocated.

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**, **27*** and **27 Aer2***.

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.

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;

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

2190 *b)* frequency assignments in Region 1 in the bands above 50 MHz, and frequency assignments[1] 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.

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.

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.

2200 § 4. *List III.* (Spare)

2201 § 5. *List IV. List of Coast Stations.*

2202 (1) There are annexed to this list a table and a chart showing the zones and hours of service of ships of the second and third categories (see Appendix **12**) and a table of inland telegraph rates, limitrophic rates, etc. This list shall also contain an annex giving any details of maritime mobile-satellite systems which may be forwarded to the Secretary-General by participating administrations.

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. Alphabetical List of Call Signs Assigned from the International Series to Stations Included in Lists I, II, IV, V, VI and VIII A.*

This list shall be published in two volumes:

2216 (1) *List VII A. Alphabetical List of Call Signs and/or 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), Ship and Ship Earth Stations Maritime Mobile Service Identities and Selective Call Numbers or Signals, and Coast and Coast Earth Stations Maritime Mobile Service Identities and Identification Numbers or Signals.*

2217 *a)* This list shall be preceded by the Table of Allocation of International Call Sign Series and the Table of Nationality Identification Digits Series given in Appendices **42** and **43** and a table of signals characterizing the emissions of radiobeacons used in the maritime mobile service.

2218 *b)* List VII A shall be republished every two years and kept up to date by recapitulative supplements every three months.

2219 (2) *List VII B. Alphabetical List of Call Signs of Stations Other than Amateur Stations, Experimental Stations and Stations of the Maritime Mobile Service.*

2220 *a)* This list shall be preceded by the Table of Allocation of 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 *b)* List VII B shall be republished at intervals determined 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 Which Are Open to Public Correspondence or Which Participate in the Port Operations Service.*

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 radiodetermination 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 radiocommunication and space radiocommunication services shall be selected having regard to the relevant CCIR Recommendations with respect to geographical separation from earth stations.

2502 § 2. (1) As far as practicable, sites for transmitting[1] stations, in the fixed or mobile service, employing maximum values of equivalent

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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.

* For provisions governing the mobile services and the special services related to safety, see:

Special services related to safety:	Chapter IX
Aeronautical mobile service:	Chapter X
Maritime mobile service:	Chapter XI
Maritime mobile-satellite service:	Chapter XI
Land mobile service:	Chapter XII

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 refraction[1].

2503 (2) As far as practicable, sites for transmitting[2] 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 refraction[3].

2504 (3) In the frequency bands above 15 GHz there shall be no restriction[4] as to the direction of maximum radiation for stations in the fixed or mobile service.

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.

2502.2 [1] Information on this subject is given in the most recent version of CCIR Report 393.

2503.1 [2] 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.

2503.2 [3] See No. **2502.2**.

2504.1 [4] 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.

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 refraction [1].

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** apply in the following frequency bands allocated to the fixed-satellite service, the meteorological-satellite service and the mobile-satellite service for reception by space stations, where these bands are shared with equal rights with the fixed or mobile service:

1 626.5 - 1 645.5 MHz	(for countries mentioned in No. **730**)
1 646.5 - 1 660 MHz	(for countries mentioned in No. **730**)
2 655 - 2 690 MHz [2]	(for Regions 2 and 3)
5 725 - 5 755 MHz [2]	(for countries of Region 1 mentioned in Nos. **803** and **805**)
5 755 - 5 850 MHz	(for countries of Region 1 mentioned in Nos. **803**, **805** and **807**)
5 850 - 7 075 MHz	
7 900 - 8 400 MHz	

2506.1 [1] Information on this subject is given in the most recent version of CCIR Report 393.

2509.1 [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.

2510 (6) The limits given in Nos. **2503**, **2505** and **2508** apply in 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 GHz[1,2]	(for Region 1)
12.5 - 12.75 GHz[1]	(for countries mentioned in Nos. **848** and **850**)
12.7 - 12.75 GHz[1]	(for Region 2)
12.75 - 13.25 GHz	
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 GHz[1]	(for Regions 1 and 3)
14.4 - 14.5 GHz	
14.5 - 14.8 GHz[2]	

2511 (7) The limits given in Nos. **2505** and **2508** apply in 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:

17.7 - 18.1 GHz[2]	
27.0 - 27.5 GHz[3]	(for Regions 2 and 3)
27.5 - 29.5 GHz	

2512 to **2538** NOT allocated.

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 } **2511.1** } [2] The application of the limits in this frequency band is provisional (see Resolution **101**).

2511.2 [3] See No. **2510.1**.

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 $\theta \leqslant 0°$

$+40 + 3\,\theta$ dBW in any 4 kHz band for $0° < \theta \leqslant 5°$

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 $\theta \leqslant 0°$

$+64 + 3\,\theta$ dBW in any 1 MHz band for $0° < \theta \leqslant 5°$

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**)

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.

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**)
14.25 - 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	

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 GHz[1]	(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**)

2547.1 } **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.

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/m^2) 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/m^2) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

$-154 + 0.5(\delta - 5)$ dB(W/m^2) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

-144 dB(W/m^2) 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 given in No. **2557** apply in the frequency 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 operation service (space-to-Earth)

for transmission by space stations where these bands are shared with equal rights with the fixed or mobile service.

2559 1 525 - 1 530 MHz[1] (for Regions 1 and 3)
1 530 - 1 535 MHz[1] (for Regions 1 and 3, up to 1 January 1990)
1 670 - 1 690 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.

1 690 - 1 700 MHz	(on the territory of the countries mentioned in Nos. **740** and **741**)
1 700 - 1 710 MHz	
2 290 - 2 300 MHz	

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 by emissions from a space station in the broadcasting-satellite service or the fixed-satellite service for all conditions and for all methods of modulation shall not exceed the following values:

-152 dB(W/m^2) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

$-152 + 0.75(\delta - 5)$ dB(W/m^2) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

-137 dB(W/m^2) 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 band:

2 500 - 2 690 MHz

which is shared by the broadcasting-satellite service or the fixed-satellite service with the fixed or mobile service.

2564 *c)* The power flux-density values given in No. **2562** 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 band 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 3 400 MHz and 7 750 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/m^2) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

$-152 + 0.5(\delta - 5)$ dB(W/m^2) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

– 142 dB(W/m^2) 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/m^2) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

$-150 + 0.5(\delta - 5)$ dB(W/m^2) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

-140 dB(W/m^2) 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/m^2) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

$-148 + 0.5(\delta - 5)$ dB(W/m^2) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

-138 dB(W/m^2) 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 GHz[1] (for Region 3)
12.5 - 12.75 GHz[2] (for Region 3 and for Region 1 on the territory of countries mentioned in Nos. **848** and **850**)

2577 (7) Power flux-density limits between 17.7 GHz and 19.7 GHz.

2578 *a)* The power flux-density at the Earth's surface produced by emissions from a space station, including emissions from a reflecting

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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 Resolutions **31**, **34** and **700**.

satellite, for all conditions and for all methods of modulation, shall not exceed the following values:

-115 dB(W/m^2) in any 1 MHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

$-115 + 0.5(\delta - 5)$ dB(W/m^2) in any 1 MHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

-105 dB(W/m^2) 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 band listed in No. **2580** which is allocated to the following space radiocommunication services:

— fixed-satellite service (space-to-Earth)

— earth exploration satellite including meteorological-satellite service (space-to-Earth)

for transmission by space stations where this band is shared with equal rights with the fixed or mobile service.

2580 17.7 - 19.7 GHz[1]

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

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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.

satellite, for all conditions and for all methods of modulation, shall not exceed the values given in No. **2578**[1]

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 service.

2584

31.0 - 31.3 GHz	
34.2 - 35.2 GHz	(for space-to-Earth transmissions under Nos. **895** and **896** on the territory of countries mentioned in No. **894**)
37.5 - 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 **2611** NOT allocated.

2582.1 [1] 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.

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, and whenever there is unacceptable interference[1] to geostationary-satellite space systems in the fixed-satellite service operating in accordance with these Regulations.

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 interference[1] to any geostationary-satellite space system in the fixed-satellite service, these emissions shall be reduced to a level at or less than accepted interference[1].

2613.1 } 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 Stations [1]

2615 § 4. (1) Space stations on board geostationary satellites which use any frequency band allocated to the fixed-satellite service or the broadcasting-satellite service [2]:

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*

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 interference [3] to any other satellite network whose space station complies with the limits given in Nos. **2617** and **2618**.

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*

A.29 S.III.1 [1] In the case of space stations on board geosynchronous satellites with orbits having an angle of inclination greater than 5 degrees the positional tolerance shall relate to the nodal point.

2615.1 [2] 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**.

2619.1 [3] The level of accepted interference shall be fixed by agreement between the administrations concerned, using the relevant CCIR Recommendations as a guide.

2623 *c)* need not comply with No. **2622** as long as the satellite network to which the space station belongs does not cause unacceptable interference[1] to any other satellite network whose space station complies with the limits given in No. **2622**.

2624 (3) Space stations[2] 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

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 as 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 interference[3] to any other satellite network whose space station complies with the limits given in No. **2626**.

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 satellites[4] shall be capable of being maintained within:

a) 10% of the half-power beamwidth relative to the nominal pointing direction, *or*

2623.1 [1] The level of accepted interference shall be fixed by agreement between the administrations concerned, using the relevant CCIR Recommendations as a guide.

2624.1 [2] Same text as for No. **2615.1**.

2627.1 [3] See No. **2623.1**

2628.1 [4] 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**.

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.

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 interference[1] to other systems.

Section V. Power Flux-Density at the Geostationary-Satellite Orbit

2631 § 6. In the frequency band 8 025 - 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 dB(W/m^2) 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 Moon[2] emissions causing harmful interference to radio astronomy observations[3] and to other users of passive services shall be prohibited in the entire frequency spectrum except in the following bands:

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

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2630.1 [1] The level of accepted interference shall be fixed by agreement between the administrations concerned, using the relevant CCIR Recommendations as a guide.

2632.1 [2] 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 [3] The level of harmful interference is determined by agreement between the administrations concerned, with the guidance of the relevant CCIR Recommendations.

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° N, 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**.

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 2730 NOT allocated.

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 radiocommunications.

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 **2797** NOT allocated.

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 different provisions from those contained in this Article.

2806 to **2830** NOT allocated.

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.

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.

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 radiobeacons operating in the bands between 160 kHz and 435 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 § 15. (1) The protection ratio required for maritime radiobeacons operating in the bands between 283.5 kHz and 335 kHz is based on the radiated power being kept to the value necessary to give the desired field strength at the service range.

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 (6) In Region 1, for maritime radiobeacons in these bands, the assignment of frequencies is based on a separation of 2.3 kHz between adjacent frequencies used for class A2A emissions.

2866 (7) In Region 1, for maritime radiobeacons, the depth of modulation should be at least 70%.

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 **2929** NOT allocated.

CHAPTER IX

Distress and Safety Communications

ARTICLE 37

General Provisions

2930 § 1. The procedure specified in this Chapter is obligatory in the maritime mobile service and for communications between aircraft stations and stations of the maritime mobile service. The provisions of this Chapter are also applicable to the aeronautical mobile service except in the case of special arrangements between the governments concerned.

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 mobile station or ship earth station in distress of any means at its disposal to attract attention, make known its position, and obtain help.

2933 (2) No provision of these Regulations prevents the use by 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 in distress.

2934 (3) No provision of these Regulations prevents the use by a land station, in exceptional circumstances, of any means at its disposal to assist a mobile station in distress (see also No. **959**).

2935 § 4. In cases of distress, urgency or safety, transmissions:

2936 *a)* by radiotelegraphy shall not in 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.

2938 § 5. The abbreviations and signals of Appendix **14** and the Phonetic Alphabet and Figure Code in Appendix **24** should be used where applicable and, where language difficulties exist, the use of the International Code of Signals also is recommended.

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 Aviation state which aircraft should be fitted with radio equipment and which aircraft should carry portable radio equipment for use in survival craft. 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 stations of the maritime mobile service may communicate, for safety purposes, with stations of the aeronautical mobile service.

2943 § 9. Any aircraft required by national or international regulations to communicate for distress, urgency or safety purposes with stations of the maritime mobile service shall be capable 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 A3E or H3E and receiving class A3E and H3E emissions, or on the frequency 156.8 MHz transmitting and receiving class G3E emissions.

2944 to **2968** NOT allocated.

ARTICLE 38

Frequencies for Distress and Safety

Section I. Availability of Frequencies

2969 *A. 500 kHz*

2970 § 1. (1) The frequency 500 kHz is the international distress frequency for radiotelegraphy (see also No. **472**); it shall be used for this purpose by ship, aircraft and survival craft stations using frequencies in the bands between 405 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**).

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.

2972 *B. 2 182 kHz*

2973 § 2. (1) The frequency 2 182 kHz[1] is the 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 the distress call and distress traffic, for signals of emergency position-indicating

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2973.1 [1] Where administrations provide at their coast stations a watch on 2 182 kHz for receiving class R3E and J3E emissions as well as class A3E and H3E emissions, ship stations beyond the A3E or H3E communication range of such coast stations may call them for safety purposes using class R3E or J3E emissions. This procedure shall only be used when calling by the use of class A3E and H3E emissions has not been successful.

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 A3E or H3E (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**).

2974 (2) In the zone of Regions 1 and 2 south of latitude 15° N, including Mexico, and in the zone of Region 3 south of latitude 25° N, 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 6 215.5 kHz, as appropriate (see Nos. **2982**, **2986** and **3054**).

2975 (3) However, ship and aircraft stations which cannot transmit on the carrier frequency 2 182 kHz or, in accordance with No. **2974**, on the carrier frequencies 4 125 kHz or 6 215.5 kHz, should use any other available frequency on which attention might be attracted.

2976 (4) Selective calling under the provisions of Article **62** may be used on the carrier frequency 2 182 kHz in the shore-to-ship, ship-to-shore and ship-to-ship directions and on this frequency shall be confined to distress and urgency and to vital navigational warnings. In no circumstances shall such selective calling be used in place of the procedures given in Nos. **3101**, **3102**, **3116**, **3117** and **3270**.

2977 (5) 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 (6) Any coast station authorized to send navigational warnings should be able to transmit the navigational warning signal described in Nos. **3284**, **3285** and **3286**.

2979 *C. 3 023 kHz*

2980 § 3. The aeronautical carrier (reference) frequency 3 023 kHz 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 Appendices **27*** and **27 Aer2*** (see also Nos. **501** and **505**).

2981 *D. 4 125 kHz*

2982 § 4. In the zone of Regions 1 and 2 south of latitude 15° N, including Mexico, and in the zone of Region 3 south of latitude 25° N, the carrier frequency 4 125 kHz is designated to supplement the carrier frequency of 2 182 kHz for distress and safety purposes and for call and reply (see also No. **520**). Stations using the frequency 4 125 kHz may continue to use class H3E emission until 1 January 1984.

2983 *E. 5 680 kHz*

2984 § 5. The aeronautical carrier (reference) frequency 5 680 kHz 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 Appendices **27*** and **27 Aer2*** (see also Nos. **501** and **505**).

2985 *F. 6 215.5 kHz*

2986 § 6. In the zone of Region 3 south of latitude 25° N, the carrier frequency 6 215.5 kHz is designated to supplement the carrier frequency 2 182 kHz for distress and safety purposes and for call and reply (see also No. **523**). Stations using the frequency 6 215.5 kHz may continue to use class H3E emission until 1 January 1984.

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

2987 *G. 8 364 kHz*

2988 § 7. The frequency 8 364 kHz is designated for use by survival craft stations if they are equipped to transmit on frequencies in the bands between 4 000 kHz and 27 500 kHz and if they desire to establish communications relating to search and rescue operations with stations of the maritime and aeronautical mobile services (see also No. **501**).

2989 *H. 121.5 MHz and 123.1 MHz*

2990 § 8. (1) Mobile stations of the maritime mobile service may communicate, for safety purposes, with stations of the aeronautical mobile service.

2991 (2) For these purposes only, they may use the aeronautical emergency frequency 121.5 MHz and the aeronautical auxiliary frequency 123.1 MHz, 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 *I. 156.3 MHz and 156.8 MHz*

2993 § 9. The frequencies 156.3 MHz and 156.8 MHz may be used by aircraft stations for safety purposes only (see also note *h)* of Appendix **18**).

2994 § 10. (1) The frequency 156.8 MHz is the international distress, 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 and call and distress traffic, for the urgency signal, urgency traffic and for the safety signal (see also No. **2993**). Safety messages shall be transmitted where practicable on a working frequency after a preliminary announcement on 156.8 MHz. The class of emission to be used for radiotelephony on the frequency 156.8 MHz shall be G3E (see Appendix **19**).

2995 (2) However, ship stations which cannot transmit on 156.8 MHz should use any other available frequency on which attention might be attracted.

2996 *J. 243 MHz*

(See Nos. **501** and **642**.)

2997 *K. 406 - 406.1 MHz Band*

(See No. **649**.)

2998 *L. 1 544 - 1 545 MHz Band and 1 645.5 - 1 646.5 MHz Band*

(See No. **728**.)

2999 *M. 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 *N. Survival Craft Stations*

3002 § 12. Equipment provided for use in survival craft stations shall, if capable of operating on any frequency:

3003 *a)* *in the bands between 405 kHz and 535 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

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* This is to cater for the automatic reception of the radiotelegraph alarm signal.

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 *d)* *in the bands between 118 MHz and 136 MHz*, be able to transmit on 121.5 MHz, preferably 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;

3007 *e)* *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;

3008 *f)* *in the bands between 235 MHz and 328.6 MHz*, be able to transmit on the frequency 243 MHz.

Section II. Protection of Distress Frequencies

3009 *A. General*

3010 § 13. Any emission capable of causing harmful interference to distress, alarm, urgency or safety communications on the international distress frequencies 500 kHz or 2 182 kHz is prohibited (see Nos. **472**, **500**, **3018** and **3023**). Any emission causing harmful interference to distress, safety and calling communications on the frequency 156.8 MHz is prohibited (see Nos. **613**, **3033** and **4414**).

3011 § 14. (1) Any signals sent for testing shall be kept to a minimum, particularly:

3012 *a)* on the carrier frequency 2 182 kHz;

3013 *b)* on the frequency 156.8 MHz;

3014 *c)* in the zone of Regions 1 and 2 south of latitude 15° N, including Mexico, and in the zone of Region 3 south of latitude 25° N, on the carrier frequency 4 125 kHz;

3015 *d)* in the zone of Region 3 south of latitude 25° N also on the carrier frequency 6 215.5 kHz.

3016 (2) It is not permitted to send test transmissions of the radiotelephone alarm signal on the carrier frequency 2 182 kHz and the frequency 156.8 MHz, except where emergency equipment which can operate only on these frequencies is involved, in which case measures shall be taken to prevent radiation. Measures shall also be taken to prevent radiation from radiotelephone alarm tests carried out on frequencies other than 2 182 kHz and 156.8 MHz.

3017 *B. 500 kHz*

3018 § 15. (1) Apart from the transmissions authorized on 500 kHz, and taking account of No. **4226**, all transmissions on the frequencies included between 490 kHz and 510 kHz are forbidden (see No. **471** and Recommendation **200**).

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 (3) Before transmitting on 500 kHz, stations in the mobile service must listen on this frequency for a reasonable period to make sure that no distress traffic is being sent (see No. **3702** or **4713**).

3021 (4) The provisions of No. **3020** do not apply to stations in distress.

3022 *C. 2 182 kHz*

3023 § 16. (1) Except for transmissions authorized on the carrier frequency 2 182 kHz, all transmissions on the frequencies between 2 173.5 kHz and 2 190.5 kHz are forbidden.

3024 (2) Before transmitting on the carrier frequency 2 182 kHz, a station in the mobile service should listen on this frequency for a reasonable period to make sure that no distress traffic is being sent (see No. **4915**).

3025 (3) The provisions of No. **3024** do not apply to stations in distress.

3026 (4) To facilitate the reception of distress calls, all transmissions on 2 182 kHz shall be kept to a minimum.

3027 (5) To reduce unnecessary alarm signal emissions, tests of the radiotelephone alarm signal on the carrier frequency 2 182 kHz are prohibited (see No. **3016**).

3028 (6) As an exception such tests are permitted for radiotelephone emergency equipment which can operate only on the international distress frequency 2 182 kHz, in which case a suitable artificial antenna shall be employed.

3029 *D. 4 125 kHz and 6 215.5 kHz*

3030 § 17. (1) In the zone of Regions 1 and 2 south of latitude 15° N, including Mexico, and in the zone of Region 3 south of latitude 25° N, before transmitting on the carrier frequency 4 125 kHz or 6 215.5 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**).

3031 (2) The provisions of No. **3030** do not apply to stations in distress.

3032 *E. 156.8 MHz*

3033 § 18. (1) All emissions in the band 156.725 - 156.875 MHz[1] capable of causing harmful interference to the authorized transmissions of stations of the maritime mobile service on 156.8 MHz are forbidden.

3034 (2) Before transmitting on the frequency 156.8 MHz, a station in the mobile service should listen on this frequency for a reasonable period to make sure that no distress traffic is being sent (see No. **4915**).

3035 (3) The provisions of No. **3034** do not apply to stations in distress.

3036 (4) 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.

3033.1 [1] After 1 January 1983 this band is reduced to 156.7625 - 156.8375 MHz (see Resolution **308**).

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 405 kHz and 535 kHz 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 a loudspeaker.

3039 (2) During the periods mentioned above, except for the emissions provided for in this Chapter:

3040 *a)* transmissions shall cease in the bands between 485 kHz and 515 kHz;

3041 *b)* outside these bands, transmissions of stations of the 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**.

3042 § 20. (1) Stations of the maritime mobile service open to public correspondence and using frequencies in the authorized bands between 405 kHz and 535 kHz shall, during their hours of service, remain on watch on 500 kHz. This watch is obligatory only for class A2A and H2A emissions.

3043 (2) These stations, while observing the requirements of 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.

3047 *B. 2 182 kHz*

3048 § 21. (1) All coast stations which are open to public correspondence and which form an essential part of the coverage of the area for distress purposes shall, during their hours of service, maintain a watch on 2 182 kHz.

3049 (2) These stations shall maintain this watch by means of an operator using some aural method, such as headphones, split headphones or loudspeaker.

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 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).

3053 *C. 4 125 kHz and 6 215.5 kHz*

3054 § 24. (1) In the zone of Regions 1 and 2 south of latitude 15° N, including Mexico, and in the zone of Region 3 south of latitude 25° N, all coast stations which are open to public correspondence 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 and/or 6 215.5 kHz, as appropriate (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 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 Recommendation **306**).

3058 (2) 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.

3059 (3) 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.

3060 (4) Ship stations, when in communication with a coast 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 that coast station.

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 radiotelegraph distress signal consists of the group · · · — — — · · ·, symbolized herein by $\overline{\text{SOS}}$, 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 other vehicle is threatened by grave and imminent danger and requests immediate assistance.

Section III. Distress Call

3091 § 4. (1) The distress call sent by radiotelegraphy consists of:

— the distress signal $\overline{\text{SOS}}$, 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 radiotelegraph distress message consists of:

— the distress signal $\overline{\text{SOS}}$;

— 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 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 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 position either in radiotelephony or 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 radiotelegraphy, the words NORTH 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. Radiotelegraphy*

3100 § 7. (1) The radiotelegraph distress procedure shall consist of:

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 radiotelegraphy, until an answer is received.

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)* Radiotelegraphy:

— 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 radiotelegraphy, the abbreviation QRT, followed by the distress signal $\overline{\text{SOS}}$;

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 radiotelegraphy, the abbreviation QRT, 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 radiotelegraphy, the use of the signal QRT $\overline{\text{SOS}}$ 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 radiotelegraphy, the message referred to 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 radiotelegraphy, the message referred to 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)* Radiotelegraphy:

— the signal $\overline{\text{DDD}}$ $\overline{\text{SOS}}$ $\overline{\text{SOS}}$ $\overline{\text{SOS}}$ $\overline{\text{DDD}}$;

— 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 § 34. When the 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 radiotelegraphy, the urgency signal consists of 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 three repetitions of the group of words PAN PAN, each word of the group pronounced as the French word "panne". The urgency signal shall be transmitted 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 the message following it shall be sent 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.

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 provision as 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 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.

3210 § 8. For the purpose of announcing and identifying medical 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 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.

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 radiotelegraphy, the safety signal consists of 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 "SÉCURITÉ" pronounced clearly as in French, spoken three times and transmitted before the call.

3223 § 14. (1) The safety signal indicates that the station is about to transmit a message containing an important navigational or important meteorological warning.

3224 (2) The safety signal and call shall be sent 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.

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 radiotelephony); 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

Section I. 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 1 300 Hz, and having a ratio of the period of the emission to the period of silence equal to or greater than one, and an emission duration between one and five seconds; *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 243 MHz, a signal whose characteristics shall be in accordance with those recommended by the organizations mentioned in Resolution **601**.

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.

3256.1 [1] In Japan, there are emergency position-indicating radiobeacons which transmit the distress signal and identification on frequencies between 2 089.5 kHz and 2 092.5 kHz using class A1A emissions.

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 § 3. (1) Only the signal specified in No. **3257** shall be used by low-power radiobeacons (Type L) and it shall be transmitted continuously.

3264 (2) High-power radiobeacons (Type H) may transmit either of the signals specified in No. **3257** or **3258** with a keying cycle which consists of the keying signal for between thirty and fifty seconds followed by a period of silence of between thirty and sixty seconds.

3265 (3) However, the keying cycles in Nos. **3263** and **3264** may be 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-indicating radiobeacon signals on the frequencies 121.5 MHz and 243 MHz shall comply with the recommendations and standards of the organizations mentioned in Resolution **601**.

Section II. Radiotelegraph and Radiotelephone Alarm Signals

3268 § 5. (1) The radiotelegraph alarm signal consists of a 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 405 kHz and 535 kHz which is not provided with an automatic apparatus for the transmission of the radiotelegraph alarm signal shall be permanently equipped with a clock, clearly marking the seconds, preferably by means

of a sweep hand completing one revolution per minute. 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 radiotelegraphy, the actuation of automatic 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 loudspeaker 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. 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. **3196** and **3197**).

3280 (2) In the cases referred to in Nos. **3278** and **3279**, an interval of two minutes should, if possible, separate the end of the radiotelegraph alarm signal and the beginning of the warning or the message.

3281 § 9. Automatic devices intended for the reception of the 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.

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 stations shall in principle be sent in accordance with a definite timetable,

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3326 § 4. (1) Meteorological messages specially intended for all ship 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 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**).

3339 to **3363** NOT allocated.

CHAPTER X

Aeronautical Mobile Service

ARTICLE 43

Authority of the Person Responsible for the Mobile Stations in the Aeronautical Mobile 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. The person responsible, as well as all the 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.

3367 to **3391** NOT allocated.

ARTICLE 44

Operators' Certificates for Aircraft Stations

Section I. General Provisions

3392 § 1. (1) The service of every aircraft radiotelegraph station shall be performed by an operator holding a certificate issued or recognized by the government to which the station is subject.

3393 (2) The service of every aircraft radiotelephone 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.

3394 (3) The service of automatic communication devices[1] installed in an aircraft 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 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 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.

3396 (5) The provisions of No. **3395** shall not, however, apply to any aircraft 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

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3394.1 [1] The term "automatic communication devices" is intended to include such equipment as teleprinters, data transfer systems, etc.

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, as well as a special certificate, for radiotelegraph operators [1].

3404 (2) There are two categories of radiotelephone operators' certificates, general and restricted [1].

3403.1 } 3404.1 } [1] As regards the employment of operators holding the different certificates, see Article **45**.

3405 § 6. (1) The holder of a first- or second-class radiotelegraph operator's certificate may carry out the radiotelegraph or radiotelephone service of any aircraft station.

3406 (2) The holder of a radiotelephone operator's general certificate may carry out the radiotelephone service of any aircraft station.

3407 (3) The holder of a radiotelephone operator's restricted certificate may carry out the radiotelephone service of any aircraft station, when working on frequencies of the maritime mobile service, provided that:

3408 *a)* the peak envelope power of the transmitter does not exceed 200 W; *or*

3409 *b)* the operation of the transmitter requires only the use of simple external switching devices, excluding 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 kW.

3410 (4) The holder of a radiotelephone operator's restricted certificate may carry out the radiotelophone service of any aircraft station operating on frequencies allocated exclusively to the aeronautical mobile service, 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 by Appendix **7**.

3411 (5) The radiotelephone service of aircraft 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 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;

3421 *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. **3420**;

3422 *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 flight;

3423 *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;

3424 *e)* ability to send correctly and to receive correctly by radiotelephone;

3425 *f)* detailed knowledge of the Regulations applying to radiocommunications, knowledge of the documents relating to charges for radiocommunications, knowledge of the provisions of the 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 certificate states that the holder has successfully passed the tests relating to these special provisions;

3426 *g)* a sufficient knowledge of world geography, especially the principal shipping and air routes and the most important telecommunication routes;

3427 *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.

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 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 radio-navigation;

3431 *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. **3430**;

3432 *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 flight;

3433 *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;

3434 *e)* ability to send correctly and to receive correctly by radiotelephone, except in the case provided for in No. **3412**;

3435 *f)* knowledge of the Regulations applying to radiocommunications, knowledge of the documents relating to

charges for radiocommunications, knowledge of the provisions of the 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 certificate states that the holder has successfully passed the tests relating to these special provisions;

3436 *g)* a sufficient knowledge of world geography, especially the principal shipping and air routes and the most important telecommunication routes;

3437 *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.

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)* 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;

3441 *b)* knowledge of the practical operation and adjustment of radiotelegraph apparatus;

3442 *c)* knowledge of the Regulations applying to radiotelegraph communications and specifically of that part of those Regulations relating to safety of life at sea.

3443 (2) Each administration concerned shall fix the other conditions for obtaining this certificate. However, except as provided for in No. **3412**, the conditions specified in Nos. **3450**, **3451**, **3452** and **3453** or **3454**, as the case may be, shall be satisfied.

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 radiotelephony;

3447 *b)* detailed knowledge of the practical operation and adjustment of radiotelephone apparatus;

3448 *c)* ability to send correctly and to receive correctly by telephone;

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 telephone;

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 operating on frequencies allocated exclusively to the aeronautical mobile service, each administration may itself fix these 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, 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. **3457**.

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 § 16. 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.

3458 to **3482** NOT allocated.

ARTICLE 45

Personnel of Aeronautical Stations

3483 Administrations shall ensure that the staff on duty in aeronautical stations shall be adequately qualified to operate the stations efficiently.

3484 to **3508** NOT allocated.

ARTICLE 46

Inspection of Aircraft Stations

3509 § 1. (1) The governments or appropriate administrations of countries which an aircraft 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.

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 an administration has found it 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 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 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
3540

NOT allocated.

ARTICLE 47

Working Hours of Stations in the Aeronautical Mobile Service

Section I. General

3541 § 1. In order to permit the application of the following rules on the subject of hours of watch, every station of the aeronautical mobile service shall have an accurate clock correctly regulated to Coordinated Universal Time (UTC).

Section II. Aeronautical Stations

3542 § 2. The service of an aeronautical station shall be continuous throughout the period during which it bears responsibility for the radiocommunication service to aircraft in flight.

Section III. Aircraft Stations

3543 § 3. For the international public correspondence service, aircraft stations constitute a single category. The duration of the service of such stations is not fixed by these Regulations.

3544 to 3568 NOT allocated.

ARTICLE 48

Working Conditions in the Aeronautical Mobile Service

Section I. General

3569 § 1. Except as otherwise provided in these Regulations, the aeronautical mobile service may be regulated by special agreements between governments concerned under the provision for special arrangements in Article 31 of the Convention (Malaga-Torremolinos, 1973).

3570 § 2. In the absence of special agreements, the provisions of these Regulations concerning the exchanging of and accounting for public correspondence shall be applicable to stations in the aeronautical mobile service (see also No. **3633**).

Section II. Communication with Stations in the Maritime Mobile Service and in the Maritime Mobile-Satellite Service

3571 § 3. 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 (see Chapter **XI**, especially Article **59**, Section III).

3572 to **3596** NOT allocated.

ARTICLE 49

Conditions to Be Observed by Mobile Stations in the 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 § 5. (1) Changes of frequency in the sending and receiving apparatus of any mobile stations shall be capable of being made as rapidly as possible.

3602 (2) Installations of any mobile station shall be capable, once communication is established, of changing from transmission to reception and vice versa in as short a time as possible.

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").

3605 to **3629** NOT allocated.

ARTICLE 50

Special Rules Relating to the Use of Frequencies in the Aeronautical Mobile Service

3630 § 1. Frequencies in any band allocated to the aeronautical mobile (R) service are reserved for communications between any aircraft and those aeronautical stations primarily concerned with the safety and regularity of flight along national or international civil air routes.

3631 § 2. Frequencies in any band allocated to the aeronautical mobile (OR) service are reserved for communications between any aircraft and aeronautical 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 mobile service between 2 850 kHz and 22 000 kHz (see Article **8**) shall be assigned in conformity with the provisions of Appendices **26**, **27** * and **27 Aer2** * and the other relevant provisions of these Regulations.

3633 § 4. Administrations shall not permit public correspondence in the frequency bands allocated exclusively to the aeronautical mobile service, unless permitted by special aeronautical regulations adopted by a conference of the Union to which all interested Members are invited. Such regulations shall recognize the absolute priority of safety and control messages.

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

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

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 to be used for call and reply in the aeronautical mobile service.

3636 to **3650** NOT allocated.

ARTICLE 51

Order of Priority of Communications in the Aeronautical Mobile Service

3651 The order of priority for communications[1] in the aeronautical mobile 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 aircraft and ships, 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.
9. Service communications relating to the working of the telecommunication service or to communications previously exchanged.

3651.1 [1] The term *communications* as used in this Article includes radiotelegrams, radiotelephone calls and radiotelex calls.

10. Government communications other than those shown in 8 above, ordinary private communications. RCT[1] radiotelegrams and press radiotelegrams.

3652
to
3676 NOT allocated.

3651.2 [1] RCT (Red Cross Telegrams): Telegrams concerning persons protected in time of war by the Geneva Conventions of 12 August 1949.

ARTICLE 52

General Radiotelegraph Procedure in the Aeronautical Mobile Service

Section I. General Provisions

3677 § 1. (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.

3678 (2) The procedure specified in Sections IV, V and VI of the present Article is applicable only in the absence of special arrangements to the contrary concluded between the governments concerned.

3679 § 2. The use of the Morse code signals specified in the Instructions for the Operation of the International Public Telegram Service shall be obligatory in the aeronautical mobile service. However, for radiocommunications of a special character, the use of other signals is not precluded.

3680 § 3. In order to facilitate radiocommunications, stations shall use the service abbreviations given in Appendix **13**.

Section II. Calls

3681 *A. General*

3682 § 4. The provisions of this Article are not applicable to the aeronautical mobile service when special agreements exist between the governments concerned.

3683 § 5. (1) As a general rule, it rests with the aircraft station to establish communication with the aeronautical station. For this purpose, the aircraft station may call the aeronautical 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 aircraft station can be heard by the aeronautical station.

3684 (2) However, an aeronautical station having traffic for an aircraft station may call this station if it has reason to believe that the aircraft station is keeping watch and is within the service area of the aeronautical station.

3685 § 6. When an aeronautical station receives calls from several aircraft 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. **3651**) of the radiotelegrams that aircraft stations have on hand and on the need for allowing each calling station to clear the greatest possible number of communications.

3686 § 7. (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.

3687 (2) Before renewing the call, the calling station shall ascertain that the station called is not in communication with another station.

3688 (3) If there is no reason to believe that harmful interference will be caused to other communications in progress, the provisions of No. **3686** 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.

3689 § 8. Aircraft stations shall not radiate a carrier wave between calls.

3690 § 9. When the name and address of the administration or private operating agency controlling an aircraft 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 aircraft station to furnish as a matter of regular procedure, to the aeronautical station to which it transmits traffic, all the necessary information in this respect.

3691 § 10. (1) The aeronautical station may, by means of the abbreviation TR, ask the aircraft station to furnish it with the following information:

3692 *a)* position and, whenever possible, heading and speed;

3693 *b)* next destination.

3694 (2) The information referred to in Nos. **3691** to **3693**, preceded by the abbreviation TR, should be furnished by aircraft stations, whenever this seems appropriate, without prior request from the aeronautical station. The provision of this information is authorized only by the person responsible for the aircraft.

3695 *B. Calls to Several Stations*

3696 § 11. Two types of calling signal "to all stations" are recognized:

3697 *a)* call CQ followed by the letter K (see No. **3699**);

3698 *b)* call CQ not followed by the letter K (see No. **3700**).

3699 § 12. Stations desiring to enter into communication with stations of the 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 mobile service with request for reply).

3700 § 13. 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.

3701 § 14. 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 III. Preliminary Operations

3702 § 15. (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 communications in progress. This obligation does not apply to stations where unattended operation is possible through automatic means (see No. **3394**) on frequencies dedicated to narrow-band direct-printing.

3703 (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:

3704 *a)* the aircraft station whose emission causes interference to the communication of a mobile station with a land station shall cease sending at the first request of the land station;

3705 *b)* the aircraft 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;

3706 *c)* the station which requests this cessation shall indicate the approximate waiting time imposed on the station whose emission it suspends.

Section IV. Method of Calling, Reply to Calls and Signals Preparatory to Traffic

3707 *A. Method of Calling*

3708 § 16. (1) 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.

3709 (2) However, in the bands between 4 000 kHz and 27 500 kHz, when the conditions of establishing contact are difficult, the call signs may be transmitted more than three times, but not more than ten times each. In this case, the call signs of the called and the calling station shall be transmitted in alternate sequence up to a total of twenty call signs altogether (e.g. ABC ABC de WXYZ WXYZ ... *or* ABC ABC ABC de WXYZ WXYZ WXYZ ...). This call may be sent three times at intervals of two minutes; thereafter it shall not be repeated until an interval of fifteen minutes has elapsed.

3710 § 17. For making the call and for transmitting preparatory signals, the calling station shall use a frequency on which the station called keeps watch.

3711 *B. Indication of the Frequency to Be Used for Traffic*

3712 § 18. (1) The call, as described in Nos. **3708** and **3709**, shall be followed by 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.

3713 (2) When, as an exception to this rule, the call is not followed by an indication of the frequency to be used for the traffic, this indicates:

3714 *a)* where the calling station is an aeronautical station, that it proposes to use for traffic its normal working frequency shown in the appropriate document;

3715 *b)* where the calling station is an aircraft station, that the frequency to be used for traffic is to be chosen by the station called from the frequencies on which the calling station can transmit.

3716 *C. Indication of Priority, of the Reason for the Call, and of Transmission of Radiotelegrams in Series*

3717 § 19. (1) When the calling station has more than one radiotelegram to transmit to the station called, the above-mentioned preparatory signals shall be followed by the service abbreviation and the figure giving the number of such radiotelegrams.

3718 (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.

3719 *D. Form of Reply to Calls*

3720 § 20. 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.

3721 *E. Frequency for Reply*

3722 § 21. 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.

3723 *F. Agreement on the Frequency to Be Used for Traffic*

3724 § 22. (1) If the station called is in agreement with the calling station, it shall transmit:

3725 *a)* the reply to the call;

3726 *b)* the service abbreviation indicating that from that moment onwards it will listen on the working frequency announced by the calling station;

3727 *c)* if necessary, the indications referred to in No. **3736**;

3728 *d)* if useful, the service abbreviation and figure indicating the strength and/or intelligibility of the signals received (see Appendix **13**);

3729 *e)* the letter K if the station called is ready to receive the traffic of the calling station.

3730 (2) If the station called is not in agreement with the calling station on the working frequency to be used, it shall transmit:

3731 *a)* the reply to the call;

3732 *b)* the service abbreviation indicating the working frequency to be used by the calling station and, if necessary, the class of emission;

3733 *c)* if necessary, the indications specified in No. **3736**.

3734 (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.

3735 *G. Reply to the Request for Transmission by Series*

3736 § 23. The station called, in replying to a calling station which has proposed to transmit its radiotelegrams by series (see No. **3718**), 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.

3737 *H. Difficulties in Reception*

3738 § 24. (1) If the station called is unable to accept traffic immediately, it shall reply to the call as indicated in Nos. **3724** to **3729**, 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.

3739 (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

3740 *A. Traffic Frequency*

3741 § 25. (1) As a general rule, a station of the aeronautical mobile service shall transmit its traffic on one of its working frequencies in that band in which the call has been made.

3742 (2) The use of frequencies reserved for calling shall be forbidden for traffic, except distress traffic (see Chapter **IX**).

3743 (3) 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 tadiotelegram 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.

3744 (4) 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.

3745 *B. Numbering in Daily Series*

3746 § 26. (1) As a general rule, radiotelegrams in the public correspondence service transmitted by aircraft stations shall be numbered in a daily series; number 1 shall be given to the first radiotelegram sent each day to each separate station.

3747 (2) A series of numbers which has begun in radiotelegraphy should be continued in radiotelephony and vice versa.

3748 *C. Long Radiotelegrams*

3749 § 27. (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.

3750 (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.

3751 (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.

3752 *D. Suspension of Traffic*

3753 § 28. When an aircraft station transmits on a working frequency of an aeronautical station and causes interference to the transmission of such an aeronautical station, it shall suspend working at the first request of the latter.

Section VI. End of Traffic and Work

3754 *A. Signal for the End of Transmission*

3755 § 29. (1) The transmission of a radiotelegram shall be terminated by the signal · — · — · (end of transmission), followed by the letter K.

3756 (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.

3757 *B. Acknowledgement of Receipt*

3758 § 30. (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.

3759 (2) The acknowledgement of receipt shall be transmitted by the receiving station on the traffic frequency (see No. **3741**).

3760 *C. End of Work*

3761 § 31. (1) The end of work between two stations shall be indicated by each of them by means of the signal · · · — · — (end of work).

3762 (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; *and*
— when transmission is ended in long-distance radiocommunication services with deferred acknowledgement of receipt or without acknowledgement of receipt.

Section VII. Control of Working

3763 § 32. The provisions of this Section are not applicable in cases of distress, urgency or safety (see No. **3677**).

3764 § 33. In communication between aeronautical stations and aircraft stations the aircraft station shall comply with the instructions given by the aeronautical 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.

3765 § 34. In communication between aircraft stations the station called shall control the working in the manner indicated in No. **3764**. However, if an aeronautical station finds it necessary to intervene, these stations shall comply with the instructions given by the aeronautical station.

Section VIII. Tests

3766 § 35. When it is necessary for an aircraft station to send signals for testing or adjustment which are liable to interfere with the working of neighbouring coast or aeronautical stations, the consent of these stations shall be obtained before such signals are sent.

3767 § 36. When it is necessary for a station in the aeronautical 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 be composed of a series of VVV followed by the call sign of the station emitting the test signals.

3768 to **3792** NOT allocated.

ARTICLE 53

Radiotelephone Procedure in the Aeronautical Mobile Service — Calls

3793 § 1. The provisions of this Article are not applicable to the aeronautical mobile service when special agreements exist between the governments concerned.

3794 § 2. (1) As a general rule, it rests with the aircraft station to establish communication with the aeronautical station. For this purpose the aircraft station may call the aeronautical 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 aircraft station can be heard by the aeronautical station.

3795 (2) However, an aeronautical station having traffic for an aircraft station may call this station if it has reason to believe that the aircraft station is keeping watch and is within the service area of the aeronautical station.

3796 § 3. When an aeronautical station receives calls from several aircraft 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. **3651**) of the radiotelegrams or radiotelephone calls that aircraft stations have on hand and on the need for allowing each calling station to clear the greatest possible number of communications.

3797 § 4. (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.

3798 (2) Before renewing the call, the calling station shall ascertain that the station called is not in communication with another station.

3799 (3) If there is no reason to believe that harmful interference will be caused to other communications in progress, the provisions of No. **3797** 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.

3800 § 5. Aircraft stations shall not radiate a carrier wave between calls.

3801 § 6. When the name and address of the administration or private operating agency controlling an aircraft 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 aircraft station to furnish, as a matter of regular procedure, to the aeronautical station to which it transmits traffic, all the necessary information in this respect.

3802 § 7. (1) The aeronautical station may, by means of the abbreviation TR (spoken as TANGO ROMEO), ask the aircraft station to furnish it with the following information:

3803 *a)* position and, whenever possible, heading and speed;

3804 *b)* next destination.

3805 (2) The information referred to in Nos. **3802** to **3804**, preceded by the abbreviation TR, should be furnished by aircraft stations, whenever this seems appropriate, without prior request from the aeronautical station. The provision of this information is authorized only by the person responsible for the aircraft.

3806 to **3830** NOT allocated.

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

Operators' Certificates for Ship Stations and Ship Earth Stations

Section I. General Provisions

3860 § 1. (1) The service of every ship radiotelegraph station 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 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.

3862 (3) The service of every ship earth station shall be controlled by a person 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.

3863 (4) The service of automatic communication devices[1] installed 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 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 (5) 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.

3863.1 [1] The term "automatic communication devices" is intended to include such equipment as teleprinters, data transfer systems, etc.

3865 (6) 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 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 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**.

Section II. Categories of Certificates for Ship Station Operators

3878 § 5. (1) There are four categories of certificates for radiotelegraph operators[1], namely:

3879 *a)* the radiocommunication operator's general certificate;

3880 *b)* the first-class radiotelegraph operator's certificate;

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.

3878.1 } 3883.1 } [1] As regards the employment of operators holding the different certificates, see Article **56**.

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.

3889 (6) However, where the conditions specified in No. **3934** are 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.

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.

Section III. Conditions for the Issue of Operators' Certificates

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 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;

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 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;

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 radiotelegraph 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 operators' 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 W, 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.

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.

ARTICLE 56

Personnel of Stations in the Maritime Mobile Service

Section I. Personnel of Coast Stations

3979 § 1. Administrations shall ensure that the staff on duty in coast stations shall be adequately qualified to operate the stations efficiently.

Section II. Class and Minimum Number of Operators for Stations on board Ships

3980 § 2. In the public correspondence service, each government shall take the necessary steps to ensure that stations on board ships of its own nationality have personnel adequate to perform efficient service.

3981 § 3. The personnel of ship stations in the public correspondence service shall, having regard to the provisions of Article **55**, include at least:

3982 *a)* ship stations of the first category, except in the case provided for in No. **3986**: a chief operator holding a radiocommunication operator's general certificate or a first-class radiotelegraph operator's certificate;

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.

3987 to **4011** NOT allocated.

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

Working Hours of Stations in the Maritime Mobile Service

Section I. General

4044 § 1. In order to permit the application of the following rules on the subject of hours of watch, every station of the maritime mobile 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 radiocommunication apparatus in compliance with an international agreement; this same provision will apply, as far as possible, to other ships.

Section II. Coast Stations

4046 § 3. (1) The service of coast stations is, 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 authorized 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:

$$\left.\begin{array}{l}0000 - 0400\\0800 - 1200\\1600 - 1800\\2000 - 2200\end{array}\right\}\ \text{ship's time or zone time,}$$

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 other than survival 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 Radiotelegraphy*

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 405 kHz and 535 kHz

4109 § 10. Transmitters used in ship stations working in the authorized bands between 405 kHz and 535 kHz shall be provided with devices readily permitting a material reduction of power.

4110 § 11. All ship stations equipped with radiotelegraph apparatus to work in the authorized bands between 405 kHz and 535 kHz shall be able to:

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 and either A2A or H2A emissions on at least two working frequencies;

4113 *c)* receive, in addition, class A1A, A2A and H2A emissions on all the other frequencies necessary for their service.

4114 § 12. The provisions of Nos. **4112** and **4113** do not apply to apparatus provided solely for distress, urgency and safety purposes.

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* This is to cater for the automatic reception of the radiotelegraph alarm signal.

4115 B2. Bands Between 1 605 kHz and 2 850 kHz

4116 § 13. In Region 2, any radiotelegraph station installed 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 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 Narrow-Band Direct-Printing Telegraphy*

4123 § 15. The characteristics of the narrow-band direct-printing equipment shall be in accordance with Appendix **38**.

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 apparatus to work in the authorized bands between 1 605 kHz and 2 850 kHz shall be able to:

4127 *a)* send class A3E or H3E emissions on a carrier frequency of 2 182 kHz and receive class A3E and H3E emissions on a carrier frequency of 2 182 kHz.

However, after 1 January 1982, it is no longer authorized to send class A3E emissions on a carrier frequency of 2 182 kHz, except for such apparatus as is referred to in No. **4130**;

4128 *b)* send, in addition:

1) class A3E, *or*
2) class H3E, R3E and J3E[1]

emissions on at least two working frequencies[2]. However, after 1 January 1982, class A3E and H3E emissions are no longer authorized on working frequencies;

4129 *c)* receive, in addition:

1) class A3E and H3E, *or*
2) class A3E, H3E, R3E and J3E

emissions on all other frequencies necessary for their service. However, after 1 January 1982, the ability to receive class A3E and H3E emissions is no longer required.

4130 § 17. The provisions of Nos. **4128** and **4129** do not apply to apparatus provided solely for distress, urgency and safety purposes.

4131 D2. Bands Between 4 000 kHz and 23 000 kHz

4132 § 18. In the zone of Regions 1 and 2 south of latitude 15° N, including Mexico, and in the zone of Region 3 south of latitude 25° N, all ship stations equipped with radiotelephony to work in the authorized bands between 4 000 kHz and 23 000 kHz should be able to send and receive on the carrier frequencies 4 125 kHz and 6 215.5 kHz (see Nos. **2982** and **2986**).

4133 D3. Bands Between 156 MHz and 174 MHz

4134 § 19. All ship stations equipped with radiotelephony to work in the authorized bands between 156 MHz and 174 MHz (see No. **613** and

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4128.1 [1] Up to 1 January 1982 administrations may, in certain areas, reduce this requirement to class H3E and J3E emissions on working frequencies.

4128.2 [2] In certain areas, administrations may reduce this requirement to one working frequency.

Appendix **18**) shall be able to send and receive class G3E emissions (see Resolution **308**) on:

4135 *a)* the distress, safety and calling frequency 156.8 MHz;

4136 *b)* the primary intership frequency 156.3 MHz;

4137 *c)* all the frequencies necessary for their service.

Section II. Conditions to Be Observed by Ship Earth Stations

4138 § 20. Ship earth stations shall be so established as to conform to the provisions of Chapter **III** as regards frequencies.

4139 § 21. The frequencies of emissions of ship earth stations shall be checked as often as practicable by the inspection service to which these stations are subject.

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.

Section III. 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 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**.

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 frequencies 156.3 MHz and 156.8 MHz may be used by aircraft stations for safety purposes only.

4155 to **4179** NOT allocated.

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*

4181 § 1. Stations employing single-sideband radiotelegraph transmissions shall use upper-sideband emissions. The frequencies specified in these Regulations for class H2A and H2B* emissions such as 410 kHz, 425 kHz, 454 kHz, 468 kHz, 480 kHz, 500 kHz, 512 kHz and 8 364 kHz shall be used as carrier frequencies.

4182 *B. Bands Between 405 kHz and 535 kHz*

4183 § 2. Except as provided in No. **961**, ship stations authorized to work in the bands between 415 kHz and 535 kHz shall transmit on the frequencies indicated in this Article (see No. **4237**).

4184 § 3. As a general rule, the minimum separation between adjacent frequencies used respectively by coast stations and by ship stations is 4 kHz.

4185 § 4. In the band 405 - 415 kHz in Region 1, no frequency is assigned to coast stations, in order to protect the frequency 410 kHz which is designated for the maritime radionavigation service (radio direction-finding).

4186 § 5. In the African Area of Region 1, in the bands 415 - 490 kHz and 510 - 525 kHz, the separation between adjacent frequencies assigned to coast stations is, as a general rule, 3 kHz. However, in order that the frequencies may coincide with those used in the European Area in these bands, this spacing is reduced in certain cases.

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* This is to cater for the automatic reception of the radiotelegraph alarm signal.

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 1 606.5 kHz and 3 800 kHz (see Article **8**) should, whenever possible, be in accordance with the following subdivision:

—	1 606.5 - 1 625 kHz:	Radiotelegraphy exclusively.
—	1 625 - 1 670 kHz:	Low power radiotelephony.
—	1 670 - 1 950 kHz:	Coast stations.
—	1 950 - 2 053 kHz:	Ship stations working to coast stations.
—	2 053 - 2 065 kHz:	Intership working.
—	2 065 - 2 170 kHz:	Ship stations working to coast stations.
—	2 170 - 2 173.5 kHz:	Coast stations calling ship stations (including selective calling) and, exceptionally, coast stations transmitting safety messages.
—	*2 173.5 - 2 190.5 kHz:*	*Guardband for the distress and calling frequency 2 182 kHz.*
—	2 190.5 - 2 194 kHz:	Ship stations calling coast stations.
—	2 194 - 2 440 kHz:	Intership working.
—	2 440 - 2 578 kHz:	Ship stations working to coast stations.
—	2 578 - 2 850 kHz:	Coast stations.
—	3 155 - 3 340 kHz:	Ship stations working to coast stations.
—	3 340 - 3 400 kHz:	Intership working.

— 3 500 - 3 600 kHz: Intership working.

— 3 600 - 3 800 kHz: Coast stations.

4189 (2) In these bands, in Region 1, the frequencies are spaced, as far as possible, by:

— 7 kHz when two adjacent frequencies are used for double-sideband radiotelephony;

— 3 kHz when two adjacent frequencies are used for radiotelegraphy;

— 5 kHz when one frequency is used for double-sideband radiotelephony and the adjacent frequency is used for radiotelegraphy.

4190 (3) However, in the case of the intership bands, in Region 1, the spacing is reduced to 5 kHz for adjacent frequencies used for double-sideband radiotelephony.

4191 (4) When these bands are used for single-sideband radiotelephony, a station operating in the lower half of a double-sideband channel shall use upper-sideband emission with the carrier frequency located 3 kHz below the centre frequency of that channel.

4192 (5) However, in the case of the intership bands, the carrier frequency of a station operating in the lower half of the double-sideband channel is located only 2.5 kHz below the centre frequency of that channel.

4193 § 7. In Regions 2 and 3, the carrier frequencies 2 635 kHz (assigned frequency 2 636.4 kHz) and 2 638 kHz (assigned frequency 2 639.4 kHz) are used as single-sideband intership radiotelephony working frequencies in addition to the frequencies prescribed for common use in certain services. The carrier frequency 2 635 kHz should be used with class R3E and J3E emissions only. The carrier frequency 2 638 kHz may be used with class A3E, H3E, R3E and J3E emissions. However, after 1 January 1982, class A3E and H3E emissions are no longer authorized. In Region 3 these frequencies are protected by a guardband between 2 634 kHz and 2 642 kHz.

4194 § 8. The assigned frequency of a single-sideband radiotelephone channel shall be 1 400 Hz higher than the carrier frequency.

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-frequency channels)

4 063 - 4 143.6 kHz
6 200 - 6 218.6 kHz
8 195 - 8 291.1 kHz
12 330 - 12 429.2 kHz
16 460 - 16 587.1 kHz
22 000 - 22 124 kHz

4198 *b)* *Coast stations*, telephony, duplex operation (two-frequency channels)

4 357.4 - 4 438 kHz
6 506.4 - 6 525 kHz
8 718.9 - 8 815 kHz
13 100.8 - 13 200 kHz
17 232.9 - 17 360 kHz
22 596 - 22 720 kHz

4199 *c)* *Ship stations and coast stations*, telephony, simplex operation (single-frequency channels) and intership cross-band operation (two frequencies)

4 143.6 - 4 146.6 kHz
6 218.6 - 6 224.6 kHz
8 291.1 - 8 297.3 kHz
12 429.2 - 12 439.5 kHz
16 587.1 - 16 596.4 kHz
22 124 - 22 139.5 kHz

4200 *d)* *Ship stations*, wide-band telegraphy, facsimile and special transmissions systems

4 146.6 - 4 162.5 kHz
4 166 - 4 170 kHz
6 224.6 - 6 244.5 kHz
6 248 - 6 256 kHz
8 300 - 8 328 kHz
8 331.5 - 8 343.5 kHz
12 439.5 - 12 479.5 kHz
12 483 - 12 491 kHz

16 596.4 - 16 636.5 kHz
16 640 - 16 660 kHz
22 139.5 - 22 160.5 kHz
22 164 - 22 192 kHz

4201 *e)* *Ship stations*, oceanographic data transmission (see note *c)* in Appendix **31**)

4 162.5 - 4 166 kHz
6 244.5 - 6 248 kHz
8 328 - 8 331.5 kHz
12 479.5 - 12 483 kHz
16 636.5 - 16 640 kHz
22 160.5 - 22 164 kHz

4202 *f)* *Ship stations*, narrow-band direct-printing telegraph and data transmission systems, at speeds not exceeding 100 bauds (frequencies paired with those in No. **4207**)

4 170 - 4 177.25 kHz
6 256 - 6 267.75 kHz
8 343.5 - 8 357.25 kHz
12 491 - 12 519.75 kHz
16 660 - 16 694.75 kHz
22 192 - 22 225.75 kHz

4203 *g)* *Ship stations*, narrow-band direct-printing telegraph and data transmission systems, at speeds not exceeding 100 bauds (non-paired frequencies)

4 177.25 - 4 179.75 kHz
6 267.75 - 6 269.75 kHz
8 297.3 - 8 300 kHz
8 357.25 - 8 357.75 kHz
12 519.75 - 12 526.75 kHz
16 694.75 - 16 705.8 kHz
22 225.75 - 22 227 kHz
25 076 - 25 090.1 kHz

4204 *h)* *Ship stations*, A1A Morse telegraphy, calling

4 179.75 - 4 187.2 kHz
6 269.75 - 6 280.8 kHz
8 359.75 - 8 374.4 kHz
12 539.6 - 12 561.6 kHz
16 719.8 - 16 748.8 kHz

22 227 - 22 247 kHz
25 070 - 25 076 kHz

4205 *i)* *Ship stations*, digital selective calling

4 187.2 - 4 188 kHz
6 280.8 - 6 282 kHz
8 374.4 - 8 376 kHz
12 561.6 - 12 564 kHz
16 748.8 - 16 752 kHz
22 247 - 22 250 kHz

4206 *j)* *Ship stations*, A1A Morse telegraphy, working

4 188 - 4 219.4 kHz
6 282 - 6 325.4 kHz
8 357.75 - 8 359.75 kHz
8 376 - 8 435.4 kHz
12 526.75 - 12 539.6 kHz
12 564 - 12 652.3 kHz
16 705.8 - 16 719.8 kHz
16 752 - 16 859.4 kHz
22 250 - 22 310.5 kHz
25 090.1 - 25 110 kHz

4207 *k)* *Coast stations*, narrow-band direct-printing telegraph and data transmission systems, at speeds not exceeding 100 bauds (frequencies paired with those in No. **4202**)

4 349.4 - 4 356.75 kHz
6 493.9 - 6 505.75 kHz
8 704.4 - 8 718.25 kHz
13 070.8 - 13 099.75 kHz
17 196.9 - 17 231.75 kHz
22 561 - 22 594.75 kHz

4208 *l)* *Coast stations*, digital selective calling

4 356.75 - 4 357.4 kHz
6 505.75 - 6 506.4 kHz
8 718.25 - 8 718.9 kHz
13 099.75 - 13 100.8 kHz
17 231.75 - 17 232.9 kHz
22 594.75 - 22 596 kHz

4209 *m)* *Coast stations*, wide-band and A1A Morse telegraphy, facsimile, special and data transmission systems and direct-printing telegraph systems

4 219.4 - 4 349.4 kHz
6 325.4 - 6 493.9 kHz
8 435.4 - 8 704.4 kHz
12 652.3 - 13 070.8 kHz
16 859.4 - 17 196.9 kHz
22 310.5 - 22 561 kHz

4210 (2) Frequencies in the bands 25 010 - 25 070 kHz, 25 110 - 25 600 kHz and 26 100 - 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**.

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.

Section II. Use of Frequencies for Radiotelegraphy

4215 *A. General*

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.

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* This is to cater for the automatic reception of the radiotelegraph alarm signal.

** This is to cater for the automatic reception of the radiotelegraph alarm signal and for selective calling.

4217 *B. Bands Between 405 kHz and 535 kHz*

B1. Call and Reply

4218 § 13. (1) The frequency 500 kHz is the international distress frequency for radiotelegraphy (see No. **2970** for details of its use for distress, safety and urgency purposes).

4219 (2) In addition, 500 kHz may be used only:

4220 *a)* for call and reply (see Nos. **4225** and **4229**);

4221 *b)* by coast stations to announce 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 under No. **4849**, shall be used by any ship station or coast station engaged in radiotelegraphy in the authorized bands between 405 kHz and 535 kHz, and by aircraft 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 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 3 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 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 405 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 stations may use, in the authorized bands, additional frequencies which are shown in ordinary type in the List of Coast Stations. The band 405 - 415 kHz, however, is assigned to radio direction-finding; it may not be used by the maritime mobile service except on the conditions fixed by Chapter **III**.

4234 (3) The working frequencies of coast stations shall be chosen so as to avoid interference with neighbouring stations.

4235 (4) In regions of heavy traffic, coast stations and ship stations should use class A1A emission on their working frequencies.

4236 § 19. As an exception to the provision 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 405 kHz and 535 kHz shall use working frequencies chosen from the following: 425 kHz, 454 kHz, 468 kHz, 480 kHz and 512 kHz, except as permitted by No. **961**.

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 a supplementary calling frequency 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.

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*

C1. Region 2

4245 § 21. In Region 2, the frequencies in the band 2 068.5 - 2 078.5 kHz are assigned to ship stations using wide-band telegraphy, facsimile and special transmission systems. The provisions of No. **4254** are applicable.

C2. Additional Provisions Applicable in Region 3 Areas North of the Equator Only

4246 § 22. (1) The band 2 089.5 - 2 092.5 kHz is the calling and safety band for radiotelegraphy in those parts of the bands between 1 605 kHz and 2 850 kHz in which 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 2 089.5 - 2 092.5 kHz for calling shall be able to use at least one other frequency in those parts of the bands between 1 605 kHz and 2 850 kHz in which 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 radiotelegraph stations equipped to operate in the bands specified in Nos. **4204** and **4206** shall employ only class A1A Morse telegraphy emissions 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 (2) Ship stations equipped for wide-band telegraphy, facsimile and special transmission systems may, in the frequency bands reserved for such use, employ any class of emission provided that such emissions can be contained within the wide-band channels indicated in Appendix **31**. However, A1A Morse telegraphy and telephony are excluded, except for circuit alignment purposes.

4255 (3) Except as provided for in No. **4376.1**, coast radiotelegraph stations operating in the maritime mobile exclusive bands between 4 000 kHz and 27 500 kHz shall not use Type 2 emissions (see No. **4216**).

4256 (4) Coast radiotelegraph stations employing single-channel class A1A or F1B emissions and operating in the maritime mobile exclusive bands between 4 000 kHz and 27 500 kHz shall at no time use a mean power in excess of the following:

Band	*Maximum mean power*
4 MHz	5 kW
6 MHz	5 kW
8 MHz	10 kW
12 MHz	15 kW
16 MHz	15 kW
22 MHz	15 kW

4257 (5) Coast radiotelegraph stations employing multichannel telegraph emissions and operating in the maritime mobile exclusive bands between 4 000 kHz and 27 500 kHz shall at no time use a mean power in excess of 2.5 kW per 500 kHz bandwidth.

4258 § 24. Nos. **4200** and **4209** and the corresponding columns of Appendix **31** show those parts of the bands between 4 000 kHz and 27 500 kHz exclusively allocated to the maritime mobile service which are to be used by coast stations and ship stations for radiotelegraphy.

D2. Call and Reply

4259 § 25. (1) In order to establish communication with a coast station, each ship station shall use an appropriate calling frequency in one of the bands listed in No. **4204**.

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 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 (see Nos. **4207** and **4209**).

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 § 29. The exclusive digital selective calling frequencies within the bands indicated in No. **4208** (see No. **4684**) may be assigned to any coast station for use in accordance with No. **4681**.

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 calling frequencies, a coast station shall take adequate steps to ensure, under normal conditions, the prompt receipt of calls (see No. **4755**).

D3. Traffic

4272 § 34. (1) A ship station, after establishing communication on a calling frequency (see No. **4259**), shall change to a working frequency for the transmission of traffic. The use of frequencies in the calling bands for any purpose other than calling shall be prohibited.

4273 (2) Working frequencies shall be assigned to ship stations in accordance with the provisions of Nos. **4288** to **4306** inclusive.

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 channel in one of the exclusive maritime mobile bands between 4 000 kHz and 27 500 kHz should give special consideration to the countries among them which have no other channel in the same band and should endeavour to use their primary 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 calling band between 4 000 kHz and 23 000 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) Coast stations shall, when providing international service as published in the List of Coast Stations, keep watch on the common calling channels in each band throughout their hours of service in the bands concerned, and on the appropriate group channel or channels during busy periods. The times during which watch will be kept on the group channel or channels shall be published for each country in the List of Coast Stations.

4279 (2) If necessary, an indication of the channels on which watch is kept may be included in the coast station transmissions.

4280 § 38. In the bands between 4 000 kHz and 23 000 kHz, the administration to which a ship station is subject shall assign to it at least two calling frequencies in each band in which the station is equipped to transmit[1]. 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 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 additional calling frequencies (see No. **4262**).

4282 § 40. If it is not intended to maintain watch on all the 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**).

4283 § 41. Administrations which assign to their ships frequencies in two or more 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 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.

4280.1 [1] Up to 1 January 1980 ship stations whose transmitters are capable of using only three frequencies in each of the bands between 4 000 kHz and 23 000 kHz may, exceptionally, be assigned a single calling frequency in each of the frequency bands in which they can transmit. This exception may be made only if the administration concerned considers that the assignment of a minimum of two working frequencies in each band is necessary for the ship's service.

4285 § 43. Administrations shall ensure, as far as possible, that ship stations under their jurisdiction are capable of keeping their transmission within the limits of the assigned channels (see Appendix **7**).

4286 § 44. The exclusive digital selective calling frequencies within the bands indicated in No. **4205** (see No. **4683**) may be assigned to any ship station for use in accordance with No. **4681**.

E2. Working Frequencies of Ship Stations

4287 *a) Channel Spacing and Assignment of Frequencies*

4288 § 45. In all bands, the working frequencies for ship stations equipped to use wide-band telegraphy, facsimile and special transmission systems are spaced 4 kHz apart. The frequencies assignable are shown in Appendix **31**.

4289 § 46. In all bands, the frequencies assignable for oceanographic data transmissions are spaced 0.3 kHz apart. The frequencies assignable are shown in Appendix **31**.

4290 § 47. In all bands, the working frequencies for ship stations using narrow-band direct-printing telegraph and data transmission systems, at speeds not exceeding 100 bauds, 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 Appendix **32** (see also No. **4202**). The frequencies assignable to ship stations which are not paired with those used by coast stations are shown in Appendix **33** (see also No. **4203**).

4291 § 48. In all bands, except the 6 MHz band, the working frequencies for ship stations using A1A Morse telegraphy, at speeds not exceeding 40 bauds, are spaced 0.5 kHz apart; in the 6 MHz band they are spaced 0.75 kHz apart (see also note *e)* to Appendix **31**). The extreme frequencies assignable in each of these bands are shown in Appendix **31**.

4292 § 49. In the 4, 6, 8, 12 and 16 MHz bands, certain frequencies are harmonically related as shown in Appendix **35**.

4293 *b) Working Frequencies for Ship Stations Using Wide-Band Telegraphy, Facsimile and Special Transmission Systems*

4294 § 50. (1) Each administration shall assign to each ship station 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 and shown in Appendix **31**. The total number of series assigned to each ship shall be determined by traffic requirements.

4295 (2) When ship stations employing wide-band telegraphy, 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.

4296 (3) However, within the limits of the bands given in No. **4200**, administrations may, to meet the needs of specific systems, assign frequencies in a different manner from that shown in Appendix **31**. Nevertheless administrations shall take into account, as far as possible, the provisions of Appendix **31** concerning channelling and 4 kHz spacing.

4297 *c) Working Frequencies for Oceanographic Data Stations*

4298 § 51. The frequency bands in No. **4201** may also be used by buoy stations for oceanographic data transmission and by stations interrogating these buoys.

4299 § 52. Each administration may assign to each station under its jurisdiction of a type specified in Nos. **4201** and **4298** one or more of the assignable frequencies designated in Appendix **31**.

4300 *d) Working Frequencies (paired with those in No.* **4207***) for Ship Stations Using Narrow-Band Direct-Printing Telegraph and Data Transmission Systems, at Speeds Not Exceeding 100 Bauds*

4301 § 53. The frequency pairs assignable to coast stations and ship stations using narrow-band direct-printing telegraph and data transmission systems are indicated in Appendix **32**.

4302 § 54. When assigning frequencies listed in Appendix **32** for narrow-band direct-printing telegraph and data transmission systems, administrations shall apply the procedure described in Resolution **300**.

4303 *e) Working Frequencies (non-paired) for Ship Stations Using Narrow-Band Direct-Printing Telegraph and Data Transmission Systems, at Speeds Not Exceeding 100 Bauds*

4304 § 55. When assigning frequencies listed in Appendix **33** for narrow-band direct-printing telegraph and data transmission systems, administrations shall take due account of the information entries in the Master Register resulting from the notification procedure contained in Resolution **301**.

4305 *f) Working Frequencies for Ship Stations Using A1A Morse Telegraphy*

4306 § 56. Each administration shall assign to each ship station under its jurisdiction a sufficient number of 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 working frequencies should be assigned to each ship. Administrations shall ensure a uniform distribution of assignments throughout the bands.

4307 § 57. For the exclusive purpose of communication with stations of the maritime mobile service, an aircraft station may be assigned one or more 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 Working Frequencies*

4309 § 58. In the bands between 4 000 kHz and 27 500 kHz the following abbreviations may be used to designate a 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 and the first decimal figure shall be transmitted.

Section III. Use of Frequencies for Narrow-Band Direct-Printing Telegraphy

4312 *A. General*

4313 § 59. Frequencies assigned to coast stations 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 405 kHz and 535 kHz*

4315 § 60. (1) All ship stations equipped with narrow-band direct-printing telegraph apparatus to work in the authorized bands between 405 kHz and 535 kHz shall be able to send and receive class F1B emissions on at least two working frequencies (see No. **4237**)[1].

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 § 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 emissions on at least two working frequencies.

4319 (2) Narrow-band direct-printing telegraphy is forbidden in the band 2 170 - 2 194 kHz.

4320 *D. Bands Between 4 000 kHz and 27 500 kHz*

4321 § 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 on at least two frequencies in each band as required by their

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4315.1 [1] In the European Maritime Area, use of these class F1B emissions is subject to special arrangements between interested and affected administrations.

service. The assignable frequencies are indicated in Appendices **32** and **33**.

4322 *E. Bands Between 156 MHz and 174 MHz*

4323 § 63. All ship stations equipped with narrow-band direct-printing telegraph apparatus may work in the authorized bands between 156 MHz and 174 MHz and shall conform to the provisions of Appendix **18**.

Section IV. Use of Frequencies for Radiotelephony

4324 *A. General*

4325 § 64. Except with regard to the provisions of Article **12** concerning notification and recording of frequencies, when designating frequencies for single-sideband radiotelephony the carrier frequency is always to be designated. The assigned frequency is to be determined in accordance with No. **4194**.

4326 § 65. Coast stations shall not occupy idle radiotelephone channels by emitting identification signals, such as those generated by call slips or tapes. Exceptionally, a coast station, when requested by a ship station for the purpose of establishing a radiotelephone call, may emit a receiver tuning signal of not more than 10 seconds' duration.

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 the maritime mobile service operating in the bands between 1 605 kHz and 4 000 kHz allocated to this service and in the bands allocated exclusively to this service between 4 000 kHz and 23 000 kHz shall satisfy the technical and operational conditions specified in Appendix **17** and Resolution **307**.

4329 § 68. When linked compressor and expander systems are used they shall conform to the characteristics specified in Appendix **40**, paragraph *a)*.

4330 § 69. Single-sideband radio equipment used in conjunction with linked compressor and expander systems shall conform to the characteristics specified in Appendix **17** and should also conform to Appendix **40**, paragraph *b)*.

4331 *B. Bands Between 1 605 kHz and 4 000 kHz*

B1. Mode of Operation of Stations

4332 § 70. (1) Except in the cases specified in Nos. **2973**, **4127** and **4342**, the classes of emission to be used in the bands between 1 605 kHz and 4 000 kHz shall be:

4333 *a)* A3E; *or*

4334 *b)* H3E, R3E and J3E.

4335 However, unless otherwise specified in the present Regulations (see Nos. **2973**, **3004**, **4127**, **4342** and **4354**):

4336 — class A3E emissions shall not be used by coast stations; *and*

4337 — after 1 January 1982, class H3E emissions for coast stations and class A3E and H3E emissions for ship stations shall no longer be authorized.

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 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 R3E and 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 emissions for safety messages.

B2. Call and Reply

4343 § 71. (1) The frequency 2 182 kHz[1] is the international distress frequency for radiotelephony (see No. **2973** for details of use for distress, urgency, safety and emergency position-indicating radiobeacon (EPIRB) purposes). The class of emission to be used for radiotelephony on the frequency 2 182 kHz shall be A3E or H3E (see No. **4127**).

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 the reception of distress calls, all transmissions on 2 182 kHz shall be kept to a minimum.

4343.1 [1] Where administrations provide at their coast stations a watch on 2 182 kHz for receiving class R3E and J3E emissions as well as class A3E and H3E emissions, ship stations beyond the A3E or H3E communication range of such coast stations may call them for safety purposes using class R3E or J3E emissions. This procedure shall only be used when calling by the use of class A3E and H3E emissions has not been successful.

4349 § 73. Ship stations open to public correspondence should, as far as possible during their hours of service, keep watch on 2 182 kHz.

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 or more frequencies other than 2 182 kHz in the authorized bands between 1 605 kHz and 2 850 kHz shall be capable of transmitting on those frequencies class A3E emissions or class H3E, R3E and J3E emissions. However, after 1 January 1982, class H3E emissions shall no longer be authorized, except on the frequency 2 182 kHz (see also No. **4342**).

4354 (3) Coast stations open to the public correspondence service on one or more frequencies between 1 605 kHz and 2 850 kHz shall also be capable of transmitting class H3E emissions with a carrier frequency of 2 182 kHz, and of receiving class A3E and H3E 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 frequencies, if required by their service:

4360 — carrier frequency 2 046 kHz (assigned frequency 2 047.4 kHz) and carrier frequency 2 049 kHz (assigned frequency 2 050.4 kHz) for class R3E and J3E emissions;

4361 — carrier frequency 2 049 kHz also for class A3E and H3E emissions until 1 January 1982;

4362 *b)* the following intership frequencies, if required by their service:

4363 — carrier frequency 2 053 kHz (assigned frequency 2 054.4 kHz) and carrier frequency 2 056 kHz (assigned frequency 2 057.4 kHz) for class R3E and J3E emissions;

4364 — carrier frequency 2 056 kHz also for class A3E and H3E emissions until 1 January 1982.

4365 These frequencies may be used as additional ship-to-shore frequencies.

4366 (2) These frequencies shall not be used for working between stations of the same nationality.

4367 § 78. (1) Ships frequently exchanging correspondence with a coast station of a nationality other than their own may use the same frequencies as ships of the nationality of the coast station where mutually agreed by the administrations concerned.

4368 (2) In exceptional circumstances, if frequency usage according to Nos. **4358** to **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.

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 *C. Bands Between 4 000 kHz and 23 000 kHz*

C1. Mode of Operation of Stations

4371 § 80. (1) The classes of emission to be used for radiotelephony in the bands between 4 000 kHz and 23 000 kHz are H3E[1], R3E and 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 H3E[1], R3E or J3E emissions in the bands between 4 000 kHz and 23 000 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.

4371.1 } **4373.1** } [1] For the use of class H3E emissions see Nos. **2982** and **2986**.

4374 (4) Ship radiotelephone stations employing class H3E[1], R3E or J3E emissions in the bands between 4 000 kHz and 23 000 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 for calling in radiotelephony:

4 125 kHz[2, 3]
6 215.5 kHz[4]
8 257 kHz
12 392 kHz
16 522 kHz
22 062 kHz

4374.1 [1] For the use of class H3E emissions see Nos. **2982** and **2986**.

4375.1 [2] In the United States and Canada, the carrier frequency 4 125 kHz is also 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 [3] In the zone of Regions 1 and 2 south of latitude 15° N, including Mexico, and in the zone of Region 3 south of latitude 25° N, the carrier frequency 4 125 kHz is also authorized for common use by coast and ship stations for single-sideband radiotelephony on a simplex basis for call, reply and safety purposes, provided the peak envelope power of such coast stations does not exceed 1 kW. In these zones the use of the carrier frequency 4 125 kHz for working purposes is not permitted (see also Nos. **2982**, **3030** and **4375.1**).

4375.3 [4] In the zone of Region 3 south of latitude 25° N, the carrier frequency 6 215.5 kHz is also authorized for common use by coast and ship stations for single-sideband radiotelephony on a simplex basis for call, reply and safety purposes, provided the peak envelope power of such coast stations does not exceed 1 kW. In this zone the use of the carrier frequency 6 215.5 kHz for working purposes is not permitted (see also No. **2986**).

4376 (2) Coast stations may use the following carrier frequencies for calling in radiotelephony[1]:

4 419.4 kHz[2]
6 521.9 kHz[2]
8 780.9 kHz
13 162.8 kHz
17 294.9 kHz
22 658 kHz

4377 § 82. Ship and coast stations using digital selective calling in accordance with No. **4681** may use the frequencies specified in Nos. **4683** and **4684** respectively.

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) In the zone of Regions 1 and 2 south of latitude 15° N, including Mexico, and in the zone of Region 3 south of latitude 25° N, before transmitting on the carrier frequency 4 125 kHz or 6 215.5 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.

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

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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] In Regions 2 and 3, the carrier frequencies 4 419.4 kHz and 6 521.9 kHz are also 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. The use of 6 521.9 kHz for this purpose should be limited to daytime use (see also No. **4375.1**).

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 radiotelephony in the bands between 4 000 kHz and 23 000 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 distress, safety and calling frequency for radiotelephony when using frequencies in the authorized bands between 156 MHz and 174 MHz (see No. **2994** 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 and coast stations for selective calling.

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 156.725 - 156.875 MHz[1] 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 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

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4393.1 [1] After 1 January 1983, this band is reduced to 156.7625 - 156.8375 MHz (see Resolution **308**).

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 (see Resolution **308**).

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 (see Resolution **308**).

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 (4) Administrations should, as far as possible, arrange to ensure that ship stations fitted with the channels corresponding to the figures in a circle in Appendix **18** can obtain a reasonably adequate use of available services.

4412 (5) In assigning frequencies to their coast stations, administrations should collaborate in cases where harmful interference might occur.

4413 (6) Channels are designated by numbers in the Table of Transmitting Frequencies given in Appendix **18** (see Resolution **308**).

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 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 (see Resolution **308**).

4416 § 95. The carrier power of ship station transmitters shall not exceed 25 W for equipment brought into service after 1 January 1970.

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 communications[1] 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.
9. Service communications relating to the working of the telecommunication service or to communications previously exchanged.

4441.1 [1] The term *communications* as used in this Article includes radiotelegrams, radiotelephone calls and radiotelex calls.

10. Government communications other than those shown in 8 above, ordinary private communications, RCT[1] radiotelegrams and press radiotelegrams.

4442 to **4664** NOT allocated.

4441.2 [1] RCT (Red Cross Telegrams): Telegrams concerning persons protected in time of war by the Geneva Conventions of 12 August 1949.

ARTICLE 62

Selective Calling Procedure in the Maritime Mobile Service

Section I. General

4665 § 1. (1) Selective calling may be carried out on appropriate radiotelephone working frequencies in the shore-to-ship, ship-to-shore and ship-to-ship directions in the band 1 605 - 4 000 kHz.

4666 (2) Selective calling may be carried out on 156.8 MHz and on appropriate radiotelephone working frequencies 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**.

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 *a)* Nos. **4767** and **4769** when using radiotelegraphy;

4678 *b)* Nos. **4982** to **5002** when using radiotelephony.

4679 *D. Frequencies to Be Used*

4680 § 5. Selective calls should be sent on one or more of the following calling carrier frequencies:

500 kHz
2 170.5 kHz[1]
4 125 kHz
4 419.4 kHz
6 521.9 kHz
8 780.9 kHz
13 162.8 kHz
17 294.9 kHz
22 658 kHz
156.8 MHz[2]

4680.1 [1] This frequency has replaced 2 182 kHz for selective calling except as provided in No. **2976**.

4680.2 [2] Selective calling on this frequency should normally be only in the direction coast station to ship or intership. Selective calls from ship to coast stations should whenever possible be sent on other frequencies of Appendix **18**, as appropriate.

Section III. Digital Selective Calling System

4681 § 6. A digital selective calling system may be used if it is in full conformity with the relevant CCIR Recommendations in which all operational, technical and compatibility aspects which might be involved have been taken into account.

4682 § 7. The frequencies assignable to ship and coast stations for digital selective calling are as follows:

4683 *a) Ship stations*

4 187.6 kHz
6 281.4 kHz
8 375.2 kHz
12 562.3 kHz
12 562.8 kHz
16 749.9 kHz
16 750.4 kHz
22 248 kHz
22 248.5 kHz

4684 *b) Coast stations*

4 357 kHz
6 506 kHz
8 718.5 kHz
13 100 kHz
13 100.5 kHz
17 232 kHz
17 232.5 kHz
22 595 kHz
22 595.5 kHz

4685 to **4709** NOT allocated.

ARTICLE 63

General 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 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**) on frequencies dedicated to narrow-band direct-printing.

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 indicate the approximate waiting time imposed on the station whose emission it suspends.

Section III. Calls by Radiotelegraphy

4718 *A. General*

4719 § 5. The provisions of this Section are not applicable to the maritime mobile-satellite service.

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 § 13. The provisions of this Section are not applicable to the maritime mobile-satellite service.

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 radiocommunication 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.

4843 § 3. (1) The traffic may be exchanged with or without the use of error-correcting equipment.

4844 (2) For communication between two stations the ARQ mode should be used when available.

4845 (3) 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.

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.

A.64 [1] Reference may also be made to the relevant CCIR Recommendations.

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**.

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**.

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 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**.

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 coast station receive frequency, using the direct-printing equipment and the identification signal of the coast station assigned in accordance with Appendix **38**.

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 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**.

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 should conform to normal telex network practice with the addition of a preamble as follows:

4874 *a)* in the conversational mode the preamble shall consist of the characters DIRTLXyz+ transmitted in sequence and preceded by at least one carriage return and a line feed, where "y" is the telex destination code in accordance with relevant CCITT Recommendations, "z" is the land subscriber's telex number and "+" indicates end of sequence;

4875 *b)* in the store-and-forward mode the preamble shall consist of the characters TLXyz+ transmitted in sequence and preceded by at least one carriage return and a line feed, where "y" is the telex destination code in accordance with relevant CCITT Recommendations, "z" is the land subscriber's telex number and "+" indicates end of sequence.

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 4902 NOT allocated.

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 performed 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 identification 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.

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. (1) 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 (2) The provisions of this Section are not applicable to the maritime mobile-satellite service.

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.

Section IV. Method of Calling, Reply to Calls and Signals Preparatory to Traffic

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 and the ship station is fitted with equipment for receiving 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 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.

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 and 23 000 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 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 6 215.5 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, 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 23 000 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) In the zone of Regions 1 and 2 south of latitude 15° N, including Mexico, and in the zone of Region 3 south of latitude 25° N, when a station is called on the carrier frequency 4 125 kHz it should reply on the same frequency unless another frequency is indicated by the calling station.

4998 (4) In the zone of Region 3 south of latitude 25° N, when a station is called on the carrier frequency 6 215.5 kHz it should reply on the same frequency unless another frequency is indicated by the calling station.

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 calls a ship station either by speech or by selective calling, 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 and 23 000 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 $\overline{\text{AS}}$ 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 radiotelephone 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 established, 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 acknowlegement 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 $\overline{\text{VA}}$ 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 intructions 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 intructions 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, particularly:

— on the carrier frequency 2 182 kHz;

— on the frequency 156.8 MHz;

— in the zone of Regions 1 and 2 south of latitude 15° N, including Mexico, and in the zone of Region 3 south of latitude 25° N, on the carrier frequency 4 125 kHz;

— in the zone of Region 3 south of latitude 25° N also on the carrier frequency 6 215.5 kHz.

5061 (3) It is not permitted to send test transmissions of the radiotelephone alarm signal on the carrier frequency 2 182 kHz and the frequency 156.8 MHz, except where emergency equipment which can operate only on these frequencies is involved, in which case measures shall be taken to prevent radiation. Measures shall also be taken to prevent radiation from radiotelephone alarm tests carried out on frequencies other than 2 182 kHz and 156.8 MHz.

5062 to **5084** NOT allocated.

ARTICLE 66

Public Correspondence in the Maritime Mobile Service and the Maritime Mobile-Satellite Service [1]

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 radiocommunications from ship to 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**.

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.

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[1] See Resolution **201**.

Section III. Accounting

5092 § 5. The exchange and verification of accounts shall be carried out in accordance with the Telegraph Regulations and the Telephone Regulations, taking into account CCITT Recommendations.

5093 § 6. The accounts shall be sent as promptly as possible but in any case before the end of the third month following that to which they relate.

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 to question the contents of an account for a period of six months after dispatch of the account.

5096 § 9. All radiomaritime accounts shall be paid by the accounting authority without delay and in any case within six months after dispatch of the account.

5097 § 10. If international radiomaritime accounts 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 from the licensee.

5098 § 11. In the case referred to in No. **5095**, if the account is seriously delayed in transit, 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 months from the date of receipt of the account.

5099 § 12. The debtor accounting authority may refuse the settlement and adjustment of accounts presented more than eighteen months after the date of handing in of the radiotelegrams, or the date of establishment of the radiotelephone calls or radiotelex calls to which the accounts relate.

Section IV. Payment of Balances

5100 § 13. Payment of balances shall be carried out in accordance with the Telegraph Regulations and the Telephone Regulations, taking into account any relevant CCITT Recommendations.

Section V. Archives

5101 § 14. The originals of radiotelegrams and documents relating to radiotelegrams, radiotelephone calls and radiotelex calls shall be held by the administrations (or recognized private operating agencies) with all necessary precautions from the point of view of secrecy, until the settlement of the relative account and, in any case, for at least six months counting from the month in which the accounts were sent. Administrations (or recognized private operating agencies) may preserve the information by any other means, e. g. magnetic or electronic records.

5102 § 15. However, should an administration (or recognized private operating agency) deem it desirable to destroy the originals of radiotelegrams or any other documents or records mentioned in No. **5101** before the above-mentioned period, and hence not be in a position to carry out an inquiry in respect of the services for which it is responsible, such administration (or recognized private operating agency) shall bear all the consequences both as regards refund of charges and any difference in the accounts in question that might otherwise have been observed.

5103 to **5127** NOT allocated.

CHAPTER XII

Land Mobile Service

ARTICLE 67

Conditions to Be Observed by 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 § 5. (1) Changes of frequency in the sending and receiving apparatus of any land mobile station shall be capable of being made as rapidly as possible.

5133 (2) Installations of any land mobile stations shall be capable, once communication is established, of changing from transmission to reception and vice versa in as short a time as possible.

5134 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 Telecommunication Convention, shall enter into force on 1 January 1982, except as specified in Nos. **5188** and **5189**.

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,

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* *Note by the General Secretariat:* See No. **1314** and Resolution **400**.

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.