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INTERNATIONAL TELECOMMUNICATION UNION

RADIO REGULATIONS

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INTERNATIONAL TELECOMMUNICATION UNION

Appendix 27 Aer2

to the Radio Regulations

Frequency Allotment Plan for the Aeronautical Mobile (R) Service and Related Information

(See Article 50 of the Radio Regulations)



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Frequency Allotment Plan for the Aeronautical Mobile (R) Service and Related Information

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Note by the General Secretariat

This edition of Appendix 27 Aer2 incorporates the changes adopted by the World Administrative Radio Conference on the Aeronautical Mobile (R) Service, Geneva, 1978, and the World Administrative Radio Conference, Geneva, 1979.

In conformity with the new numbering of the Radio Regulations the reference to Resolution No. Aer2-3, on pages 24 and 25 (provisions 27/50 and 27/54), should now read "Resolution No. 402". On page 25 (provision 27/56), the reference to No. 694 of the Radio Regulations should now read "No. 1804".

The text of Appendix 27 Aer2, as adopted by the WARC on the Aeronautical Mobile (R) Service, 1978, contains references to certain classes of emissions. A new method for classifying emissions has since been adopted by the World Administrative Radio Conference, 1979. A description of the new symbols appears in Article 4 and Appendix 6 of the Radio Regulations.

Provisions 27/185E to 27/185I define the boundaries of the five World-wide Allotment Areas established by the WARC on the Aeronautical Mobile (R) Service, Geneva, 1978. In order to show these boundaries without in any way modifying the maps attached to the Final Acts of this Conference, three new transparencies have been produced. These transparencies are intended to be used with maps 2, 5 and 7, which show the Regional and Domestic Air Route Areas.

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APPENDIX 27 Aer2

to the Radio Regulations

Frequency Allotment Plan for the Aeronautical Mobile (R) Service and Related Information

(See Article 50 of the Radio Regulations)

PART I

General Provisions

Section I

Definitions

1. *Frequency Allotment Plan*

27/1 A plan which shows the frequencies to be used in particular areas without specifying the stations to which the frequencies are to be assigned.

27/2 2. The terms to express the different methods of frequency distribution as used in this Appendix have the following meanings:

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

27/3 3. *A Major World Air Route* is a long-distance route, made up of one or more segments, essentially international in character, extending through more than one country and requiring long-distance communication facilities.

27/4 4. *A Major World Air Route Area (MWARA)* is an area embracing a certain number of Major World Air Routes, which generally follow the same traffic pattern and are so related geographically that the same frequency families may logically be applied.

- 27/5 5. *Regional and Domestic Air Routes* are all those using the Aeronautical Mobile (R) Service not covered by the definition of a Major World Air Route in No. 27/3.
- 27/6 6. *A Regional and Domestic Air Route Area (RDARA)* is an area embracing a certain number of the air routes defined in No. 27/5.
- 27/7 7. *A VOLMET Allotment Area* is an area encompassing all points where an HF broadcast facility might be required to operate on a family of frequencies common to the area.
- 27/8 8. *A VOLMET Reception Area* is an area within which aircraft should be able to receive broadcasts from one or more stations in the associated VOLMET Allotment Area.
- 27/8A 8A. *A World-Wide Allotment Area* is one in which frequencies are allotted to provide long-distance communication between an aeronautical station within that allotment area and aircraft operating anywhere in the world ¹.
- 27/9 9. *A Family of Frequencies in the Aeronautical Mobile (R) Service* contains two or more frequencies selected from different aeronautical mobile (R) bands and is intended to permit communication at any time within the authorized area of use (see Nos. 27/189 to 27/207A) between aircraft stations and appropriate aeronautical stations.

Section II

Technical and Operational Principles used for the Establishment of the Plan of Allotment of Frequencies in the Aeronautical Mobile (R) Service

A. Channel characteristics and utilization

1. *Frequency separation*
- 27/10 1.1 The frequency separation between carrier (reference) frequencies shall be 3 kHz. This is adequate to permit communications using the classes of emission referred to in Nos. 27/49-27/52 in the frequency bands between 2 850 kHz and 22 000 kHz allocated exclusively to the aeronautical mobile (R) service. The carrier (reference) frequency of the channels in the Plan shall be an integral multiple of 1 kHz.
- 27/11 1.2 For radiotelephone emissions the audio frequencies will be limited to between 300 and 2 700 Hz and the occupied bandwidth of other authorized emissions will not exceed the upper limit of A3J emissions. In specifying these limits, however, no restriction in their extension is implied in so far as emissions other than A3J are concerned, provided that the limits of unwanted emissions are met (see Nos. 27/66B and 27/66C).

27/8A.1

¹ The type of communication referred to in 27/8A may be regulated by administrations.

- 27/11A** *Note:* For aircraft and aeronautical station transmitter types first installed before 1 February 1983, the audio frequencies will be limited to 3 000 Hz.
- 27/11B** 1.3 On account of the possibility of interference, a given channel should not be used in the same allotment area for radiotelephony and data transmissions.
- 27/12** 1.4 The use of channels derived from the frequencies indicated in No. 27/16 for the various classes of emissions other than A3J and A2H will be subject to special arrangements by the administrations concerned and affected in order to avoid harmful interference which may result from the simultaneous use of the same channel for several classes of emission.
- 27/13** SUP
- 27/14** 1.5 To preclude the possibility of interference, adjacent channels in the list of frequencies in No. 27/16 have not as a rule been allotted to the same MWARA, RDARA or VOLMET areas. However, to satisfy particular needs, the administrations concerned may conclude special arrangements for the assignment of adjacent channels derived from the frequencies in the table (No. 27/16).
- 27/15** 1.6 The arrangements contemplated in Nos. 27/12 and 27/14 should be made under the Articles of the International Telecommunication Convention and the Radio Regulations entitled "Special Arrangements"*.

2. *Frequencies allotted*

- 27/16** The list of carrier (reference) frequencies allotted in the bands allocated exclusively to the aeronautical mobile (R) service, on the basis of the frequency separation provided for under No. 27/10, will be found in the following table ¹:

27/16.1 ¹ To calculate the assigned frequency from a carrier (reference) frequency given in the table, reference should be made to Nos. 27/72, 27/72B and 27/73.

* *Note by the General Secretariat:* The relevant article in the Radio Regulations is now Article 7 entitled "Special Arrangements".

kHz				
2850-3025	4650-4700	6525-6685	10005-10100	13260-13360
2851 2938	4651 4675	6526 6607	10006 10054	13261 13312
2854 2941	4654 4678	6529 6610	10009 10057	13264 13315
2857 2944	4657 4681	6532 6613	10012 10060	13267 13318
2860 2947	4660 4684	6535 6616	10015 10063	13270 13321
2863 2950	4663 4687	6538 6619	10018 10066	13273 13324
2866 2953	4666 4690	6541 6622	10021 10069	13276 13327
2869 2956	4669 4693	6544 6625	10024 10072	13279 13330
2872 2959	4672 4696	6547 6628	10027 10075	13282 13333
2875 2962		6550 6631	10030 10078	13285 13336
2878 2965		6553 6634	10033 10081	13288 13339
2881 2968	5450-5480	6556 6637	10036 10084	13291 13342
2884 2971		6559 6640	10039 10087	13294 13345
2887 2974		6562 6643	10042 10090	13297 13348
2890 2977	Region 2	6565 6646	10045 10093	13300 13351
2893 2980		6568 6649	10048 10096	13303 13354
2896 2983	5451 5466	6571 6652	10051	13306 13357
2899 2986	5454 5469	6574 6655		13309
2902 2989	5457 5472	6577 6658		
2905 2992	5460 5475	6580 6661		
2908 2995	5463	6583 6664	11275-11400	17900-17970
2911 2998		6586 6667		
2914 3001	5480-5680	6589 6670	11276 11339	17901 17937
2917 3004		6592 6673	11279 11342	17904 17940
2920 3007		6595 6676	11282 11345	17907 17943
2923 3010		6598 6679	11285 11348	17910 17946
2926 3013	5481 5580	6601 6682	11288 11351	17913 17949
2929 3016	5484 5583		11291 11354	17916 17952
2932 3019	5487 5586		11294 11357	17919 17955
2935	5490 5589		11297 11360	17922 17958
	5493 5592	8815-8965	11300 11363	17925 17961
3023 (R) and (OR)	5496 5595		11303 11366	17928 17964
	5499 5598		11306 11369	17931 17967
	5502 5601		11309 11372	17934
	5505 5604	8816 8891	11312 11375	
	5508 5607	8819 8894	11315 11378	
3400-3500	5511 5610	8822 8897	11318 11381	
	5514 5613	8825 8900	11321 11384	21924-22000
	5517 5616	8828 8903	11324 11387	
3401 3452	5520 5619	8831 8906	11327 11390	
3404 3455	5523 5622	8834 8909	11330 11393	
3407 3458	5526 5625	8837 8912	11333 11396	
3410 3461	5529 5628	8840 8915	11336	
3413 3464	5532 5631	8843 8918		21925 21964
3416 3467	5535 5634	8846 8921		21928 21967
3419 3470	5538 5637	8849 8924		21931 21970
3422 3473	5541 5640	8852 8927		21934 21973
3425 3476	5544 5643	8855 8930		21937 21976
3428 3479	5547 5646	8858 8933		21940 21979
3431 3482	5550 5649	8861 8936		21943 21982
3434 3485	5553 5652	8864 8939		21946 21985
3437 3488	5556 5655	8867 8942		21949 21988
3440 3491	5559 5658	8870 8945		21952 21991
3443 3494	5562 5661	8873 8948		21955 21994
3446 3497	5565 5664	8876 8951		21958 21997
3449	5568 5667	8879 8954		21961
	5571 5670	8882 8957		
	5574 5673	8885 8960		
	5577 5676	8888		
	5680 (R) and (OR)			

27/17 }
 to } SUP
 27/19 }

27/20 4. The International Civil Aviation Organization (ICAO) coordinates radiocommunications of the aeronautical mobile (R) service with international aeronautical operations and this Organization should be consulted in all appropriate cases in the operational use of the frequencies in the Plan.

5. *Adaptation of Allotment Procedure*

27/21 It is recognized that not all the sharing possibilities have been exhausted in the Allotment Plan contained in this Appendix. Therefore, in order to satisfy particular operational requirements which are not otherwise met by this Allotment Plan, Administrations may assign frequencies from the aeronautical mobile (R) bands in areas other than those to which they are allotted in this Plan. However, the use of the frequencies so assigned must not reduce the protection to the same frequencies in the areas where they are allotted by the Plan below that determined by the application of the procedure defined in Part I, Section II B of this Appendix.

27/22 6. When necessary to satisfy the needs of international air operations Administrations may adapt the allotment procedure for the assignment of aeronautical mobile (R) frequencies, which assignments shall then be the subject of prior agreement between Administrations affected.

27/23 7. The coordination described in No. 27/20 shall be effected where appropriate and desirable for the efficient utilization of the frequencies in question, and especially when the procedures of No. 27/22 are unsatisfactory.

B. Interference range contours

27/24 1. *General provisions*

27/24A 1.1 *Service range*

Due to factors such as the power of the transmitter, propagation loss, noise level, etc., there is a limit to the distance at which reliable communications can be effected between an aeronautical station and an aircraft station. This limiting distance, based on the weakest path, is the service range. The boundary of the air route area is often assumed to be the limiting distance.

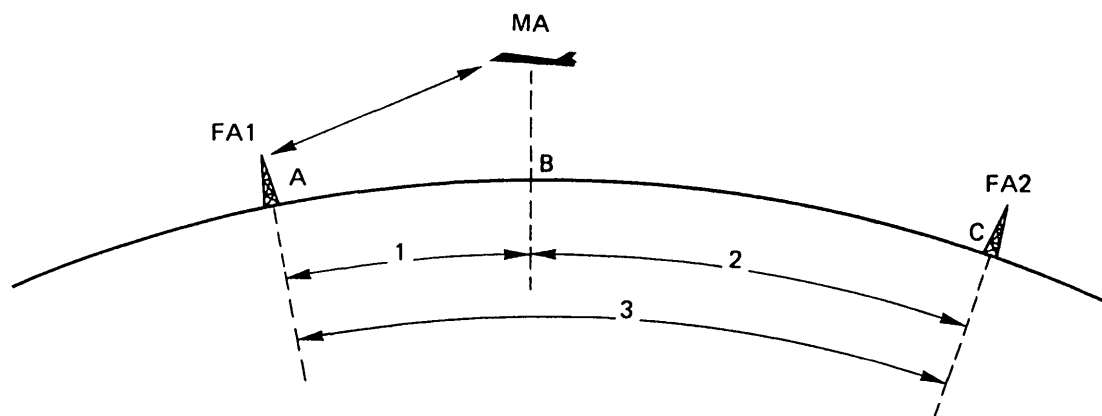
27/24B 1.2 *Interference range*

This is the minimum distance from the limit of the service range of a wanted station to a potentially interfering station needed to produce a protection ratio of 15 dB. This protection ratio is between the wanted signal at an aircraft station at the limit of the service range and the signal from a potentially interfering aeronautical station operating on the same frequency. The interference range has been calculated for different frequencies indicated on the data tables contained in Nos. 27/39-27/48 for day and night conditions, for median latitudes, for conditions of median sunspot activity and for a mean effective radiated power of 1 kW at the aeronautical station.

27/24C 1.3 *Repetition distance*

This is the distance at which a frequency may be successfully shared and is equal to the sum of the service range and the interference range.

27/24D 1.4 Figure 1 illustrates the use of the concept of interference range in frequency planning through the determination of repetition distance.



FA1 = aeronautical station in communication with aircraft station MA.

FA2 = aeronautical station in communication with aircraft stations other than MA.

MA = aircraft station in communication with aeronautical station FA1.

1 = service range AB.

2 = interference range CB.

3 = repetition distance AC.

FIGURE 1

Service range, interference range, repetition distance

27/24E 1.5 The transparencies associated with this Appendix show, for the frequencies stated, the interference range defined in No. 27/24B between an interfering aeronautical station and an aircraft station operating at the limit of its service range. Because of the variability of propagation conditions not only from hour to hour within the daytime and night time periods but also from day to day, with season, with solar activity level and geographic location, the 15 dB protection ratio may be expected to have marked variations and accordingly a greater protection may be available much of the time, especially when the aircraft is not operating at the limit of its service range.

27/24F 1.6 Supplementary information on service range, interference range and repetition distance, as well as on the use of the transparencies can be found in the technical documentation issued by the IFRB, such as texts of the IFRB Seminar on frequency management and use of the frequency spectrum; Doc. No. 11/76 or revisions thereof.

27/25 1.7 Two types of transparencies are provided for use respectively with the Mercator projection world maps and the Lambert azimuthal equal area projection maps for the polar areas. The Mercator projection transparencies encompass the area between latitude 60° North and 60° South. The transparencies associated with the Polar area projections encompass the areas north of latitude 30° North and south of latitude 30° South. The Mercator projection overlaps the Polar projection maps between latitudes 30° and 60° North and 30° and 60° South. This overlap is intended to provide continuity between transparencies of the two projections.

2. *Type of maps used*

27/26 The transparencies mentioned in Nos. 27/24E and 27/25, can be used only on a world or polar map of the projection and scales given on each transparency and will not be suitable for use on any other projection or scale. The world and polar maps associated with this Appendix, depicting MWARA, RDARA and VOLMET areas, are to the correct scale so that the transparencies carrying the interference range contours can be directly used on these maps. The auroral zones are marked on the polar maps.

3. *Change of Scale of Projection*

27/27 3.1 Should any other scale or projection be desired, then new interference range contours can be drawn to fit the new scales or projections, by using the co-ordinates given in the tables shown below.

27/28 3.2 When new transparencies are constructed, the intersection of the vertical line of symmetry, i.e., the meridian of longitude and the horizontal line of latitude should be at 00° latitude for the 00° contour, 20°N for the 20° contour, 40°N for 40° contour, etc.

27/29 3.3 The co-ordinates shown in the tables under Nos. 27/39-27/48 are given with reference to the 180° meridian taken as the axis of symmetry for the construction of the contours.

4. *Sharing conditions between areas*

4.1 *Frequency bands 3 MHz to 11.3 MHz*

27/30 4.1.1 The transparencies are constructed on the basis of the following sharing conditions:

Areas	Bands between: (MHz)	Sharing conditions
MWARA or VOLMET area to MWARA or VOLMET area	3 and 6.6 9 and 11.3	night propagation day propagation <i>Note: 6.6 MHz and 5.6 MHz sharing conditions are considered to be the same</i>
MWARA or VOLMET area to RDARA	3 and 5.6 6.6 and 11.3	night propagation day propagation
RDARA to RDARA	3 and 4.7 5.6 and 11.3	night propagation day propagation

27/31 4.1.2 The additional "Day" contours included for 3 MHz, 3.5 MHz and 4.7 MHz are for determining daylight sharing possibilities.

4.2 *Frequency bands between 13 MHz and 22 MHz*

27/31A 4.2.1 The revised Frequency Allotment Plan for the 13 MHz, 18 MHz and 22 MHz bands is based on daytime protection only. This results in the following sharing possibilities:

27/31B 4.2.2 for the 13 MHz band, the repetition factor is at least 3 whilst for the 18 MHz and 22 MHz bands it is 4. It is to be noted that the longitudinal separation might be decreased to allow for a repetition of 4 (at 13 MHz) and 6 (at 18 MHz and 22 MHz), taking into account operational and local circumstances;

27/31C 4.2.3 the sharing takes into account the likely locations of the aeronautical stations rather than the area boundaries.

5. *Method of use of the transparencies for the bands 3 MHz to 11.3 MHz*

27/32 5.1 Take the appropriate MWARA, RDARA or VOLMET area map associated with this Appendix and select the transparency for the frequency order and sharing conditions under consideration.

- 27/33** 5.2 The equal area projections (Lambert) are applicable in the polar areas north of 60°N and south of 60°S; and the Mercator projections are applicable between 60°N and 60°S.
- 27/34** 5.3 Place the centre of the transparency (i.e. the intersection of the axis of symmetry and the latitude line) over the boundary of the area (use the reception area boundary in the case of VOLMET) at the point on the boundary nearest to the potentially interfering transmitter or at the location of the interfering transmitter. Note the latitude of the selected point and use the interference range contour corresponding to this latitude.
- 27/35** 5.4 A transmitter located at any point outside the contour will result, as defined in No. 27/24B, in a protection ratio of better than 15 dB.
- 27/36** 5.5 A transmitter located at any point inside the contour will result in a protection ratio of less than 15 dB. However, if the transmitter is located inside the contour but the propagation path traverses an auroral zone, it is assumed that the signal attenuation within this zone will result in a protection ratio of better than 15 dB.
- 27/37** 5.6 For the Northern Hemisphere the Mercator projection transparencies should be used in their natural position as published, but for the Southern Hemisphere the transparencies should be inverted. This point should be carefully observed when following the boundaries of areas which involve the transition of the equator.
- 27/38** SUP

6. *Data for tracing interference contours*

27/39 3.0 & 3.5 MHz day **Data for plotting 700 km interference contours**

Latitude	00°		10°		20°		30°		40°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	180,0	6,3	180,0	16,3	180,0	26,3	180,0	36,3	180,0	46,3
	178,9	6,2	178,9	16,2	178,8	26,2	178,6	36,2	178,4	46,2
	177,8	5,9	177,8	15,9	177,6	25,9	177,3	35,9	176,9	45,9
	176,8	5,5	176,7	15,4	176,5	25,4	176,1	35,4	175,5	45,4
	175,9	4,8	175,8	14,8	175,5	24,8	175,1	34,7	174,3	44,7
	175,2	4,0	175,0	14,0	174,7	24,0	174,2	33,9	173,3	43,9
	174,5	3,1	174,4	13,1	174,1	23,0	173,5	33,0	172,5	42,9
	174,1	2,2	173,9	12,1	173,6	22,0	173,0	32,0	172,0	41,9
	173,8	1,1	173,7	11,0	173,4	21,0	172,8	30,9	171,8	40,8
	173,7	0,0	173,6	9,9	173,3	19,9	172,7	29,8	171,8	39,7
	173,8	-1,1	173,7	8,8	173,4	18,8	172,9	28,7	172,0	38,6
	174,1	-2,2	174,0	7,8	173,8	17,7	173,3	27,7	172,5	37,6
	174,5	-3,1	174,5	6,8	174,3	16,8	173,9	26,7	173,2	36,6
	175,2	-4,0	175,2	5,9	175,0	15,9	174,6	25,8	174,1	35,8
	175,9	-4,8	175,9	5,2	175,8	15,1	175,5	25,1	175,1	35,1
	176,8	-5,5	176,8	4,5	176,8	14,5	176,5	24,5	176,2	34,5
	177,8	-5,9	177,8	4,1	177,8	14,1	177,6	24,1	177,4	34,0
	178,9	-6,2	178,9	3,8	178,9	13,8	178,8	23,8	178,7	33,8
	180,0	-6,3	180,0	3,7	180,0	13,7	180,0	23,7	180,0	33,7

Latitude	50°		60°		70°		80°		90°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	180,0	56,3	180,0	66,3	180,0	76,3	180,0	86,3	All Longitudes	83,7
	178,0	56,2	177,3	66,2	175,4	76,2	163,9	86,1		83,7
	176,2	55,9	174,7	65,8	171,2	75,8	152,2	85,4		83,7
	174,5	55,3	172,5	65,3	167,7	75,1	145,2	84,5		83,7
	173,0	54,6	170,6	64,5	164,9	74,3	141,9	83,4		83,7
	171,8	53,8	169,1	63,6	162,9	73,4	140,8	82,4		83,7
	171,0	52,8	168,1	62,7	161,8	72,3	141,3	81,3		83,7
	170,4	51,8	167,5	61,6	161,3	71,2	142,8	80,2		83,7
	170,2	50,7	167,3	60,5	161,5	70,1	144,9	79,2		83,7
	170,3	49,6	167,5	59,4	162,1	69,1	147,6	78,2		83,7
	170,6	48,5	168,1	58,3	163,2	68,0	150,5	77,3		83,7
	171,2	47,5	169,0	57,4	164,6	67,1	153,8	76,5		83,7
	172,1	46,6	170,1	56,4	166,4	66,2	157,3	75,8		83,7
	173,1	45,7	171,4	55,6	168,3	65,5	160,8	75,2		83,7
	174,3	45,0	172,9	55,0	170,4	64,9	164,6	74,6		83,7
	175,6	44,5	174,6	54,4	172,7	64,4	168,4	74,2		83,7
	177,0	44,0	176,3	54,0	175,1	64,0	172,2	73,9		83,7
	178,5	43,8	178,2	53,8	177,5	63,8	176,1	73,8		83,7
	180,0	43,7	180,0	53,7	180,0	63,7	180,0	73,7		83,7

27/40 3.0 MHz night Data for plotting 3500 km interference contours

Latitude	00°		10°		20°		30°		40°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	180,0	31,5	180,0	41,5	180,0	51,5	180,0	61,5	180,0	71,5
	173,9	31,0	173,1	40,9	171,7	50,8	169,3	60,7	164,3	70,4
	168,2	29,4	166,7	39,2	164,2	48,9	160,1	58,4	152,1	67,5
	163,0	26,9	161,1	36,4	158,0	45,8	153,0	54,9	144,2	63,5
	158,5	23,6	156,4	32,8	153,2	41,9	148,0	50,6	139,7	58,7
	154,9	19,6	152,9	28,6	149,8	37,4	144,9	45,8	137,5	53,6
	152,0	15,1	150,3	23,9	147,6	32,5	143,3	40,7	137,0	48,4
	150,1	10,3	148,7	18,9	146,4	27,4	142,9	35,5	137,6	43,2
	148,9	5,2	148,0	13,7	146,3	22,1	143,4	30,3	139,1	38,1
	148,5	0,0	148,1	8,5	146,9	17,0	144,7	25,2	141,3	33,2
	148,9	-5,2	149,0	3,4	148,3	11,9	146,7	20,9	144,1	28,6
	150,1	-10,3	150,6	-1,6	150,3	7,1	149,3	15,8	147,4	24,3
	152,0	-15,1	152,9	-6,3	153,1	2,6	152,5	11,5	151,1	20,4
	154,9	-19,6	156,0	-10,5	156,4	-1,4	156,2	7,8	155,3	16,9
	158,5	-23,6	159,7	-14,2	160,3	-4,8	160,3	4,6	159,8	14,0
	163,0	-26,9	164,1	-17,3	164,7	-7,7	164,8	2,0	164,5	11,6
	168,2	-29,4	169,1	-19,6	169,6	-9,8	169,7	0,1	169,5	9,9
	173,9	-31,0	174,4	-21,0	174,7	-11,1	174,8	-1,1	174,7	8,9
	180,0	-31,5	180,0	-21,5	180,0	-11,5	180,0	-1,5	180,0	8,5

Latitude	50°		60°		70°		80°		90°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	180,0	81,5	0,	88,5	0,	78,5	0,	68,5	All Longitudes	58,5
	149,5	79,7	78,0	84,7	25,3	77,7	14,2	68,3		58,5
	133,9	75,6	90,4	79,7	46,5	75,7	28,0	67,7		58,5
	127,6	70,7	97,5	74,7	62,9	72,9	41,3	66,7		58,5
	125,7	65,6	103,3	69,8	75,9	69,7	53,8	65,4		58,5
	126,0	60,3	108,7	65,0	86,6	66,4	65,5	63,9		58,5
	127,6	55,2	113,9	60,3	95,8	62,9	76,4	62,3		58,5
	129,9	50,2	118,9	55,9	104,1	59,6	86,7	60,5		58,5
	132,9	45,4	124,1	51,6	111,9	56,3	96,5	58,8		58,5
	136,4	40,8	129,2	47,6	119,2	53,2	105,8	57,1		58,5
	140,2	36,5	134,5	43,9	126,2	50,4	114,8	55,5		58,5
	144,4	32,6	139,8	40,5	133,1	47,7	123,4	54,0		58,5
	148,8	29,0	145,3	37,4	139,9	45,4	131,9	52,6		58,5
	153,6	25,9	150,8	34,8	146,6	43,3	140,1	51,4		58,5
	158,5	23,3	156,5	32,6	153,3	41,6	148,2	50,4		58,5
	163,7	21,2	162,3	30,8	160,0	40,3	156,2	49,6		58,5
	169,1	19,7	168,1	29,5	166,6	39,3	164,2	49,0		58,5
	174,5	18,8	174,1	28,8	173,3	38,7	172,1	48,6		58,5
	180,0	18,5	180,0	28,5	180,0	38,5	180,0	48,5		58,5

27/41 3.5 MHz night Data for plotting 4000 km interference contours

Latitude	00°		10°		20°		30°		40°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	180,0	36,0	180,0	46,0	180,0	56,0	180,0	66,0	180,0	76,0
	172,8	35,4	171,7	45,3	169,7	55,1	166,1	64,9	157,6	74,5
	166,0	33,5	164,0	43,2	160,6	52,7	154,7	62,0	142,8	70,6
	160,0	30,6	157,5	39,9	153,4	49,0	146,6	57,7	134,9	65,5
	155,0	26,8	152,3	35,7	148,1	44,4	141,5	52,6	131,2	59,9
	150,9	22,2	148,4	30,8	144,5	39,2	138,7	47,0	129,9	54,0
	147,8	17,1	145,7	25,5	142,3	33,6	137,4	41,2	130,2	48,2
	145,7	11,6	144,1	19,8	141,4	27,7	137,4	35,4	131,6	42,4
	144,4	5,9	143,4	13,9	141,4	21,9	138,3	29,5	133,8	36,7
	144,0	0,0	143,6	8,1	142,3	16,1	140,0	23,9	136,5	31,3
	144,4	-5,9	144,6	2,3	143,9	10,4	142,4	18,4	139,8	26,2
	145,7	-11,6	146,4	-3,3	146,3	5,0	145,4	13,3	143,6	21,5
	147,8	-17,1	149,0	-8,6	149,4	0,0	149,0	8,6	147,8	17,2
	150,9	-22,2	152,4	-13,4	153,1	-4,5	153,2	4,4	152,4	13,3
	155,0	-26,8	156,6	-17,6	157,5	-8,4	157,8	0,8	157,4	10,1
	160,0	-30,6	161,6	-21,2	162,5	-11,6	162,9	-2,1	162,8	7,5
	166,0	-33,5	167,3	-23,8	168,0	-14,0	168,4	-4,2	168,3	5,6
	172,8	-35,4	173,5	-25,4	173,9	-15,5	174,1	-5,6	174,1	4,4
	180,0	-36,0	180,0	-26,0	180,0	-16,0	180,0	-6,0	180,0	4,0

Latitude	50°		60°		70°		80°		90°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	180,0	86,0	0,	84,0	0,	74,0	0,	64,0		54,0
	126,9	82,7	46,5	81,9	20,9	73,4	13,4	63,8		54,0
	115,7	77,1	69,8	77,6	39,7	71,6	26,5	63,2		54,0
	113,9	71,3	83,0	72,8	55,5	69,1	39,2	62,3		54,0
	114,9	65,4	92,2	67,8	68,8	66,1	51,3	61,0		54,0
	117,1	59,6	99,7	62,8	80,1	62,8	62,8	59,6		54,0
	120,1	54,0	106,4	57,9	90,1	59,4	73,7	58,0		54,0
	123,5	48,5	112,6	53,2	99,0	56,0	84,1	56,3	All Longitudes	54,0
	127,4	43,3	118,6	48,7	107,3	52,7	93,9	54,5		54,0
	131,5	38,3	124,5	44,5	115,2	49,5	103,4	52,8		54,0
	135,9	33,7	130,4	40,5	122,8	46,5	112,6	51,2		54,0
	140,7	29,4	136,3	36,9	130,1	43,7	121,5	49,6		54,0
	145,7	25,5	142,3	33,6	137,4	41,3	130,2	48,2		54,0
	150,9	22,1	148,4	30,8	144,5	39,1	138,7	47,0		54,0
	156,4	19,3	154,6	28,4	151,6	37,3	147,1	45,9		54,0
	162,1	17,0	160,8	26,5	158,7	35,9	155,4	45,1		54,0
	168,0	15,3	167,2	25,1	165,8	34,8	163,6	44,5		54,0
	174,0	14,3	173,6	24,3	172,9	34,2	171,8	44,1	54,0	
	180,0	14,0	180,0	24,0	180,0	34,0	180,0	44,0	54,0	

27/42 4.7 MHz day Data for plotting 1200 km interference contours

Latitude	00°		10°		20°		30°		40°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	180,0	10,8	180,0	20,8	180,0	30,8	180,0	40,8	180,0	50,8
	178,1	10,6	178,0	20,6	177,8	30,6	177,5	40,6	177,1	50,6
	176,3	10,1	176,1	20,1	175,8	30,1	175,2	40,1	174,3	50,0
	174,6	9,3	174,3	19,3	173,8	29,2	173,1	39,2	171,8	49,1
	173,0	8,3	172,7	18,2	172,2	28,1	171,2	38,0	169,7	47,8
	171,7	6,9	171,4	16,8	170,3	26,7	169,7	36,5	168,0	46,4
	170,6	5,4	170,3	15,2	169,7	25,1	168,6	34,9	166,8	44,7
	169,8	3,7	169,6	13,5	168,9	23,3	167,9	33,1	166,1	42,9
	169,4	1,9	169,1	11,7	168,6	21,5	167,5	31,3	165,8	41,0
	169,2	0,0	169,0	9,8	168,5	19,6	167,6	29,4	166,0	39,2
	169,4	-1,9	169,3	8,0	168,8	17,8	168,0	27,6	166,6	37,3
	169,8	-3,7	169,8	6,2	169,4	16,0	168,7	25,8	167,5	35,6
	170,6	-5,4	170,6	4,5	170,4	14,4	169,8	24,2	168,7	34,0
	171,7	-6,9	171,7	3,0	171,5	12,9	171,0	22,8	170,2	32,6
	173,0	-8,3	173,1	1,7	172,9	11,6	172,6	21,5	171,9	31,4
	174,6	-9,3	174,6	0,6	174,5	10,6	174,3	20,5	173,8	30,5
	176,3	-10,1	176,3	-0,2	176,3	9,8	176,1	19,8	175,8	29,8
	178,1	-10,6	178,1	-0,6	178,1	9,4	178,0	19,3	177,9	29,3
	180,0	-10,8	180,0	-0,8	180,0	9,2	180,0	19,2	180,0	29,2

Latitude	50°		60°		70°		80°		90°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	180,0	60,8	180,0	70,8	180,0	80,8	0,	89,2	All Longitudes	79,2
	176,2	60,6	174,4	70,6	168,7	80,5	71,1	88,0		79,2
	172,6	60,0	169,3	69,8	159,4	79,5	87,5	86,3		79,2
	169,5	59,0	165,0	68,7	152,9	78,1	96,6	84,6		79,2
	167,0	57,6	161,8	67,3	149,1	76,4	103,6	82,9		79,2
	165,1	56,1	159,6	65,6	147,2	74,6	109,9	81,2		79,2
	163,8	54,4	158,4	63,8	146,8	72,8	115,8	79,6		79,2
	163,2	52,5	158,0	62,0	147,4	70,9	121,4	78,1		79,2
	163,1	50,7	158,3	60,1	148,9	69,1	126,9	76,7		79,2
	163,5	48,8	159,1	58,3	150,8	67,4	132,3	75,3		79,2
	164,3	47,0	160,4	56,6	153,3	65,8	137,7	74,1		79,2
	165,5	45,3	162,1	54,9	156,0	64,3	143,0	73,0		79,2
	167,0	43,8	164,2	53,5	159,1	63,0	148,3	72,0		79,2
	168,3	42,5	166,4	52,2	162,3	61,9	153,6	71,2		79,2
	170,3	41,3	168,9	51,2	165,7	60,9	158,9	70,5		79,2
	172,9	40,4	171,6	50,3	169,1	60,2	164,2	69,9		79,2
	175,8	39,7	174,3	49,7	172,7	59,6	169,4	69,5		79,2
	177,6	39,3	177,1	49,3	176,3	59,3	174,7	69,3		79,2
	180,0	39,2	180,0	49,2	180,0	59,2	180,0	69,2		79,2

27/43 4.7 MHz night & 10.0 MHz day Data for plotting 5500 km interference contours

Latitude	00°		10°		20°		30°		40°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	180,0	49,5	180,0	59,5	180,0	69,5	180,0	79,5	178,7	89,5
	168,5	48,5	165,5	58,2	159,6	67,8	144,9	76,7	97,0	82,4
	158,2	45,6	153,2	54,7	144,6	63,3	128,3	70,7	98,4	74,8
	149,7	41,2	144,1	49,6	135,4	57,2	121,5	63,5	101,0	67,2
	143,0	35,6	137,8	43,3	130,1	50,3	119,0	56,0	104,1	59,7
	138,1	29,3	133,6	36,5	127,3	43,0	118,6	48,4	107,5	52,4
	134,6	22,3	131,1	29,2	126,1	35,4	119,5	40,8	111,0	45,1
	132,3	15,1	129,8	21,6	126,1	27,8	121,2	33,4	114,8	38,1
	130,9	7,6	129,5	14,1	127,0	20,3	123,5	26,0	118,9	31,2
	130,5	0,0	130,1	6,5	128,7	12,8	126,5	18,9	123,2	24,7
	130,9	-7,6	131,5	-1,0	131,2	5,6	130,0	12,1	127,9	18,4
	132,3	-15,1	133,8	-8,2	134,4	-1,3	134,1	5,7	132,9	12,6
	134,6	-22,3	137,0	-15,2	138,3	-7,8	138,8	-0,3	138,4	7,3
	138,1	-29,3	141,2	-21,6	143,2	-13,7	144,2	-5,7	144,3	2,5
	143,0	-35,6	146,6	-27,4	148,9	-19,0	150,2	-10,4	150,7	-1,6
	149,7	-41,2	153,2	-32,4	155,5	-23,4	156,9	-14,2	157,6	-5,0
	158,2	-45,6	161,2	-36,2	163,1	-26,7	164,2	-17,1	164,8	-7,5
	168,5	-48,5	170,3	-38,7	171,3	-28,8	172,0	-18,9	172,3	-9,0
	180,0	-49,5	180,0	-39,5	180,0	-29,5	180,0	-19,5	180,0	-9,5

Latitude	50°		60°		70°		80°		90°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	0,	80,5	0,	70,5	0,	60,5	0,	50,5	All Longitudes	40,5
	40,2	78,2	22,2	69,5	15,3	60,0	11,9	50,3		40,5
	63,5	73,1	41,5	66,9	30,1	58,7	23,8	49,8		40,5
	77,1	67,0	57,1	63,1	43,8	56,7	35,4	48,9		40,5
	86,6	60,7	69,8	58,6	56,4	54,0	46,7	47,8		40,5
	94,2	54,3	80,4	53,8	67,8	51,0	57,7	46,4		40,5
	100,8	47,9	89,6	48,8	78,4	47,8	68,3	44,9		40,5
	107,0	41,7	97,9	43,8	88,2	44,4	78,7	43,2		40,5
	112,9	35,6	105,7	38,9	97,5	41,0	88,7	41,5		40,5
	118,8	29,8	113,1	34,2	106,3	37,6	98,4	39,8		40,5
	124,7	24,4	120,4	29,8	114,8	34,4	108,0	38,1		40,5
	130,8	19,3	127,6	25,6	123,1	31,4	117,3	36,5		40,5
	137,1	14,7	134,8	21,9	131,3	28,7	126,5	35,0		40,5
	143,7	10,6	142,1	18,5	139,5	26,3	135,6	33,7		40,5
	150,5	7,1	149,5	15,7	147,6	24,3	144,5	32,6		40,5
	157,6	4,3	157,0	13,5	155,7	22,6	153,5	31,7		40,5
	164,9	2,2	164,6	11,8	163,8	21,5	162,3	31,0		40,5
	172,4	0,9	172,3	10,8	171,9	20,7	171,2	30,6		40,5
	180,0	0,5	180,0	10,5	180,0	20,5	180,0	30,5		40,5

27/44 5.6 MHz day Data for plotting 1500 km interference contours

Latitude	00°		10°		20°		30°		40°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	180,0	13,5	180,0	23,5	180,0	33,5	180,0	43,5	180,0	53,5
	177,6	13,3	177,5	23,3	177,2	33,3	176,8	43,3	176,1	53,2
	175,3	12,7	175,0	22,6	174,6	32,6	173,8	42,5	172,5	52,5
	173,2	11,7	172,8	21,6	172,1	31,5	171,0	41,4	169,3	51,3
	171,2	10,3	170,8	20,2	170,0	30,0	168,7	39,9	166,6	49,6
	169,6	8,6	169,1	18,5	168,3	28,3	166,9	38,0	164,6	47,7
	168,3	6,7	167,8	16,5	167,0	26,2	165,5	36,0	163,2	45,6
	167,3	4,6	166,9	14,3	166,1	24,1	164,7	33,7	162,4	43,3
	166,7	2,3	166,4	12,1	165,7	21,8	164,4	31,4	162,3	41,0
	166,5	0,0	166,3	9,7	165,7	19,4	164,5	29,1	162,6	38,7
	166,7	-2,3	166,6	7,4	166,1	17,1	165,1	26,8	163,4	36,4
	167,3	-4,6	167,3	5,2	166,9	14,9	166,0	24,6	164,6	34,3
	168,3	-6,7	168,3	3,1	168,0	12,9	167,3	22,6	166,1	32,4
	169,6	-8,6	169,7	1,2	169,5	11,0	169,0	20,9	168,0	30,7
	171,2	-10,3	171,4	-0,4	171,2	9,5	170,8	19,3	170,1	29,2
	173,2	-11,7	173,3	-1,7	173,2	8,2	172,9	18,1	172,4	28,0
	175,3	-12,7	175,4	-2,7	175,4	7,3	175,2	17,2	174,8	27,2
	177,6	-13,3	177,7	-3,3	177,7	6,7	177,6	16,7	177,4	26,7
	180,0	-13,5	180,0	-3,5	180,0	6,5	180,0	16,5	180,0	26,5

Latitude	50°		60°		70°		80°		90°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	180,0	63,5	180,0	73,5	180,0	83,5	0,	86,5	All Longitudes	76,5
	174,8	63,2	172,0	73,1	160,8	82,9	35,2	86,0		76,5
	170,1	62,4	164,9	72,1	147,7	81,4	59,4	84,7		76,5
	166,1	61,0	159,4	70,6	140,7	79,4	75,5	83,1		76,5
	162,9	59,3	155,6	68,7	137,6	77,1	87,2	81,4		76,5
	160,7	57,3	153,3	66,5	137,0	74,8	96,7	79,6		76,5
	159,3	55,1	152,3	64,2	137,8	72,5	104,9	77,9		76,5
	158,7	52,8	152,3	61,9	139,6	70,2	112,4	76,3		76,5
	158,8	50,4	153,0	59,6	142,0	68,1	119,3	74,7		76,5
	159,5	48,1	154,4	57,4	144,9	66,0	125,9	73,3		76,5
	160,7	46,0	156,2	55,3	148,2	64,1	132,2	71,9		76,5
	162,3	43,9	158,4	53,3	151,7	62,4	138,4	70,7		76,5
	164,2	42,1	161,0	51,6	155,4	60,9	144,5	69,6		76,5
	166,4	40,4	163,8	50,1	159,3	59,6	150,5	68,7		76,5
	168,9	39,0	166,8	48,8	163,3	58,5	156,5	67,9		76,5
	171,5	37,9	170,0	47,8	167,4	57,6	162,4	67,3		76,5
	174,3	37,1	173,3	47,1	171,6	57,0	168,3	66,9		76,5
	177,1	36,7	176,6	46,6	175,8	56,6	174,1	66,6		76,5
	180,0	36,5	180,0	46,5	180,0	56,5	180,0	66,5		76,5

27/45 5.6 & 6.6 MHz night Data for plotting 6500 km interference contours

Latitude	00°		10°		20°		30°		40°	
Coordinates for plotting contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	180,0	58,5	180,0	68,5	180,0	78,5	180,0	88,5	0	81,5
	164,2	57,1	158,1	66,6	144,0	75,4	102,4	81,3	46,7	78,3
	150,8	53,2	142,2	61,6	126,6	68,7	100,1	72,8	68,5	71,7
	140,8	47,6	132,2	54,9	119,2	60,8	101,1	64,3	80,1	64,4
	133,6	40,8	126,2	47,2	116,0	52,4	102,9	55,8	88,0	56,7
	128,7	33,2	122,7	39,1	114,9	43,9	105,3	47,4	94,2	49,1
	125,3	25,2	120,8	30,7	115,1	35,4	108,0	39,1	99,7	41,5
	123,1	17,0	120,1	22,2	116,0	26,9	110,9	30,9	104,9	34,0
	121,9	8,5	120,2	13,7	117,7	18,5	114,3	22,9	110,0	26,7
	121,5	0,0	121,1	5,2	119,9	10,3	118,0	15,1	115,1	19,6
	121,9	-8,5	122,8	-3,2	122,8	2,3	122,1	7,6	120,5	12,9
	123,1	-17,0	125,2	-11,3	126,4	-5,5	126,8	0,5	126,3	6,5
	125,3	-25,2	128,6	-19,2	130,8	-12,8	132,0	-6,2	132,4	0,5
	128,7	-33,2	133,0	-26,7	136,1	-19,7	138,0	-12,3	139,0	-4,8
	133,6	-40,8	138,9	-33,5	142,5	-25,8	144,9	-17,7	146,2	-9,5
	140,8	-47,6	146,4	-39,5	150,2	-31,0	152,6	-22,2	154,0	-13,3
	150,8	-53,2	156,0	-44,3	159,1	-35,0	161,1	-25,6	162,3	-16,1
	164,2	-57,1	167,4	-47,4	169,2	-37,6	170,4	-27,8	171,0	-17,9
180,0	-58,5	180,0	-48,5	180,0	-38,5	180,0	-28,5	180,0	-18,5	

Latitude	50°		60°		70°		80°		90°	
Coordinates for plotting contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	0	71,5	0	61,5	0	51,5	0	41,5		31,5
	25,7	70,1	17,6	60,7	13,6	51,1	11,4	41,3		31,5
	46,4	66,2	34,0	58,6	26,9	49,9	22,7	40,8		31,5
	61,7	61,0	43,4	55,3	39,6	48,0	33,8	40,0		31,5
	73,3	55,1	61,0	51,2	51,6	45,6	44,8	38,9		31,5
	82,7	48,8	71,9	46,6	62,8	42,7	55,5	37,6		31,5
	90,7	42,4	81,7	41,7	73,8	39,6	66,0	36,1		31,5
	98,0	36,0	90,6	36,7	83,2	36,2	76,2	34,4		31,5
	104,8	29,7	99,0	31,8	92,7	32,8	86,2	32,7		31,5
	111,6	23,6	107,0	26,9	101,8	29,4	96,1	31,0		31,5
	115,1	17,8	114,9	22,2	110,7	26,1	105,7	29,3		31,5
	124,9	12,3	122,7	17,9	119,5	23,0	115,3	27,6		31,5
	131,8	7,3	130,5	13,8	128,1	20,2	124,7	26,1		31,5
	139,2	2,7	138,4	10,3	136,7	17,7	134,0	24,9		31,5
	146,8	-1,1	146,5	7,2	145,3	15,5	143,3	23,6		31,5
	154,7	-4,3	154,7	4,8	154,0	13,8	152,5	22,7		31,5
	162,9	-6,6	163,0	3,0	162,6	12,5	161,7	22,1		31,5
	171,4	-8,0	171,5	1,9	171,3	11,8	170,8	21,6		31,5
180,0	-8,5	180,0	1,5	180,0	11,5	180,0	21,5		31,5	

27/46 6.6 MHz day Data for plotting 1900 km interference contours

Latitude	00°		10°		20°		30°		40°	
Coordinates for plotting contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	180,0	17,1	180,0	27,1	180,0	37,1	180,0	47,1	180,0	57,1
	176,9	16,8	176,7	26,8	176,3	36,8	175,7	46,8	174,7	56,7
	174,0	16,0	173,6	26,0	172,9	35,9	171,7	45,8	169,7	55,7
	171,3	14,8	170,7	24,6	169,7	34,5	168,1	44,3	165,5	54,0
	168,8	13,0	168,2	22,8	167,0	32,6	165,2	42,3	162,2	51,9
	166,7	10,9	166,1	20,6	164,9	30,3	162,9	39,9	159,8	49,4
	165,1	8,5	164,5	18,1	163,3	27,7	161,3	37,2	158,2	46,6
	163,9	5,8	163,3	15,4	162,3	24,9	160,4	34,4	157,5	43,7
	163,1	2,9	162,7	12,5	161,8	22,0	160,2	31,5	157,5	40,8
	162,9	0,0	162,7	9,6	161,9	19,1	160,4	28,5	158,1	37,9
	163,1	-2,9	163,1	6,6	162,4	16,2	161,3	25,7	159,3	35,1
	163,9	-5,8	163,9	3,8	163,5	13,4	162,5	23,0	160,9	32,5
	165,1	-8,5	165,2	1,2	165,0	10,9	164,2	20,5	162,9	30,1
	166,7	-10,9	167,0	-1,2	166,8	8,6	166,3	18,3	165,2	28,0
	168,8	-13,0	169,1	-3,2	169,0	6,6	168,6	16,4	167,8	26,2
	171,3	-14,8	171,5	-4,9	171,5	5,0	171,2	14,9	170,7	24,8
	174,0	-16,0	174,2	-6,1	174,2	3,9	174,1	13,8	173,7	23,7
	176,9	-16,8	177,1	-6,8	177,1	3,1	177,0	13,1	176,8	23,1
	180,0	-17,1	180,0	-7,1	180,0	2,9	180,0	12,9	180,0	22,9

Latitude	50°		60°		70°		80°		90°	
Coordinates for plotting contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	189,0	67,1	180,0	77,1	180,0	87,1	0,	82,9		72,9
	172,6	66,7	167,3	76,5	137,0	85,7	23,2	82,5		72,9
	166,0	65,5	157,1	75,0	123,8	83,1	43,5	81,6		72,9
	160,7	63,6	150,3	72,8	120,8	80,1	60,0	80,2		72,9
	156,8	61,3	146,2	70,1	121,4	77,2	73,5	78,6		72,9
	154,4	58,6	144,4	67,3	123,5	74,3	84,9	76,9		72,9
	153,1	55,8	144,0	64,3	126,5	71,5	94,8	75,2		72,9
	152,8	52,8	144,7	61,4	130,1	68,8	103,6	73,5		72,9
	153,3	49,9	146,3	58,6	133,9	66,3	111,8	71,8		72,9
	154,4	47,1	148,4	55,9	138,0	63,9	119,4	70,3		72,9
	156,1	44,4	151,0	53,3	142,3	61,7	126,8	68,8		72,9
	158,2	41,9	153,9	51,0	146,7	59,7	133,8	67,5		72,9
	160,7	39,6	157,2	49,0	151,3	58,0	140,7	66,3		72,9
	163,5	37,6	160,7	47,2	155,9	56,5	147,4	65,3		72,9
	166,5	36,0	164,3	45,7	160,7	55,2	154,0	64,4		72,9
	169,7	34,6	168,1	44,5	165,4	54,2	160,6	63,8		72,9
	173,1	33,7	172,0	43,6	170,3	53,5	167,1	63,3		72,9
	176,5	33,1	176,0	43,1	175,1	53,0	173,5	63,0		72,9
	180,0	32,9	180,0	42,9	180,0	52,9	180,0	62,9		72,9

All Longitudes

27/47 9.0 MHz day Data for plotting 3800 km interference contours

Latitude	00°		10°		20°		30°		40°	
Coordinates for plotting contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	180,0	34,2	180,0	44,2	180,0	54,2	180,0	64,2	180,0	74,2
	173,3	33,6	172,3	43,5	170,6	53,4	167,5	63,2	160,6	72,9
	166,9	31,9	165,1	41,6	162,1	51,2	157,0	60,6	146,8	69,4
	161,2	29,1	158,9	38,5	155,3	47,8	149,3	56,6	138,8	64,8
	156,4	25,5	154,0	34,6	150,2	43,4	144,2	51,9	134,6	59,5
	152,5	21,2	150,2	30,0	146,6	38,5	141,2	46,6	133,0	53,9
	149,5	16,3	147,6	24,9	144,4	33,2	139,8	41,1	132,9	48,3
	147,4	11,1	145,9	19,4	143,4	27,6	139,6	35,5	134,0	42,8
	146,2	5,6	145,2	13,9	143,3	22,0	140,3	29,9	135,9	37,3
	145,8	0,0	145,4	8,3	144,1	16,4	141,9	24,4	138,4	32,1
	146,2	-5,6	146,3	2,7	145,7	11,0	144,1	19,2	141,5	27,2
	147,4	-11,1	148,1	-2,6	147,9	5,9	147,0	14,3	145,1	22,6
	149,5	-16,3	150,6	-7,7	150,9	1,1	150,4	9,8	149,1	18,4
	152,5	-21,2	153,9	-12,3	154,5	-3,2	154,4	5,8	153,6	14,8
	156,4	-25,5	157,9	-16,3	158,7	-7,0	158,8	2,3	158,4	11,6
	161,2	-29,1	162,6	-19,6	163,4	-10,1	163,7	-0,5	163,5	9,1
	166,9	-31,9	168,0	-22,1	168,7	-12,3	168,9	-2,5	168,8	7,3
	173,3	-33,6	173,9	-23,7	174,2	-13,7	174,4	-3,8	174,4	6,2
	180,0	-34,2	180,0	-24,2	180,0	-14,2	180,0	-4,2	180,0	5,8

Latitude	50°		60°		70°		80°		90°	
Coordinates for plotting contours	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
	180,0	84,2	0,	85,8	0,	75,8	0,	65,8		55,8
	137,8	81,6	56,0	83,2	22,4	75,1	13,7	65,6		55,8
	123,5	76,7	77,1	78,6	42,0	73,3	27,0	65,0		55,8
	119,5	71,2	88,4	73,7	58,2	70,7	39,9	64,0		55,8
	119,2	65,6	96,4	68,7	71,4	67,6	52,2	62,8		55,8
	120,6	60,0	103,2	63,8	82,5	64,3	63,8	61,3		55,8
	123,0	54,5	109,3	59,0	92,2	60,8	74,7	59,7		55,8
	126,0	49,2	115,1	54,3	101,0	57,5	85,1	58,0		55,8
	129,5	44,1	120,7	49,9	109,1	54,2	94,9	56,2		55,8
	133,4	39,3	126,3	45,7	116,7	51,0	104,3	54,5		55,8
	137,6	34,8	132,0	41,9	124,1	48,1	113,4	52,9		55,8
	142,1	30,7	137,7	38,3	131,3	45,4	122,2	51,4		55,8
	146,9	26,9	143,5	35,2	138,3	42,9	130,8	50,0		55,8
	152,0	23,7	149,3	32,4	145,3	40,8	139,2	48,7		55,8
	157,2	20,9	155,3	30,1	152,3	39,0	147,5	47,7		55,8
	162,7	18,7	161,4	28,2	159,2	37,6	155,7	46,9		55,8
	168,4	17,1	167,6	26,9	166,1	36,6	163,8	46,3		55,8
	174,2	16,1	173,3	26,1	173,1	36,0	171,9	45,9		55,8
	180,0	15,8	180,0	25,8	180,0	35,8	180,0	45,8		55,8

27/48 11.3 MHz day Data for plotting 6000 km interference contours

Latitude	00°		10°		20°		30°		40°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	180,0	54,0	180,0	64,0	180,0	74,0	180,0	84,0	0	86,0
	166,6	52,8	162,3	62,5	153,3	71,8	128,2	79,7	66,2	81,2
	154,8	49,5	148,2	58,3	136,6	66,3	115,0	72,2	82,1	73,8
	145,5	44,5	138,5	52,4	127,7	59,3	111,4	64,2	90,0	66,1
	138,5	38,3	132,2	45,4	123,2	51,6	111,0	58,2	95,7	58,5
	133,5	31,3	128,2	37,9	121,1	43,6	111,9	48,1	100,6	50,9
	130,0	23,9	126,0	30,0	120,6	35,5	113,6	40,1	105,2	43,4
	127,7	16,1	124,9	22,0	121,1	27,5	116,0	32,2	109,7	36,1
	126,4	8,1	124,8	13,9	122,3	19,5	118,8	24,6	114,3	29,0
	126,0	0,0	125,6	5,9	124,3	11,6	122,2	17,1	119,1	22,2
	126,4	-8,1	127,1	-2,1	127,0	4,0	126,0	9,9	124,2	15,7
	127,7	-16,1	129,5	-9,8	130,4	-3,4	130,4	3,1	129,6	9,5
	130,0	-23,9	132,8	-17,2	134,6	-10,3	135,4	-3,2	135,4	3,9
	133,5	-31,3	137,2	-24,2	139,7	-16,7	141,1	-9,0	141,7	-1,2
	138,5	-38,3	142,9	-30,5	145,8	-22,4	147,6	-14,1	148,5	-5,6
	145,5	-44,5	150,0	-36,0	152,9	-27,2	154,8	-18,2	155,6	-9,1
	154,8	-49,5	158,7	-40,3	161,2	-30,9	162,7	-21,4	163,6	-11,8
	166,6	-52,8	163,9	-43,0	170,3	-33,2	171,2	-23,3	171,7	-13,4
	180,0	-54,0	180,0	-44,0	180,0	-34,0	180,0	-24,0	180,0	-14,0

Latitude	50°		60°		70°		80°		90°	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
Coordinates for plotting contours	0	76,0	0	66,0	0	56,0	0	46,0		36,0
	31,1	74,2	19,5	65,1	14,4	55,6	11,6	45,8		36,0
	53,5	69,9	37,2	62,8	28,3	54,3	23,2	45,3		36,0
	68,6	64,2	52,3	59,2	41,5	52,4	34,5	44,5		36,0
	79,4	58,1	65,0	55,0	53,7	49,8	45,7	43,4		36,0
	88,1	51,7	75,8	50,3	65,1	46,9	56,5	42,0		36,0
	95,5	45,3	85,4	45,3	75,7	43,7	67,1	40,5		36,0
	102,3	38,9	94,1	40,3	85,6	40,3	77,4	38,3		36,0
	108,7	32,7	102,2	35,4	95,0	36,9	87,4	37,1		36,0
	115,0	26,3	110,0	30,6	104,0	33,5	97,2	35,4		36,0
	121,4	21,1	117,5	26,0	112,7	30,3	106,8	33,7		36,0
	127,8	15,8	125,1	21,8	121,2	27,2	116,2	32,1		36,0
	134,5	11,0	132,6	17,9	129,7	24,5	125,5	30,6		36,0
	141,4	6,7	140,2	14,4	138,1	22,0	134,7	29,2		36,0
	148,6	3,0	148,0	11,5	146,4	19,9	143,9	28,1		36,0
	156,1	-0,0	155,8	9,1	154,8	18,2	152,9	27,2		36,0
	163,9	-2,2	163,8	7,4	163,2	17,0	162,0	26,5		36,0
	171,0	-3,5	171,9	6,4	171,6	16,3	171,0	26,1		36,0
	180,0	-4,0	180,0	6,0	180,0	16,0	180,0	26,0		36,0

C. Classes of emission and power

1. *Classes of emission*

27/49 In the aeronautical mobile (R) service the use of emissions such as those listed below is permissible subject to compliance with the special provisions applicable to each case and provided that such use does not cause harmful interference to other users of the channel concerned.

27/50 1.1 *Telephony – Amplitude modulation:*

- double sideband A3 *
- single sideband, full carrier A3H *
- single sideband, suppressed carrier A3J

* A3 and A3H to be used only on 3 023 kHz and 5 680 kHz as well as in cases covered by Resolution N° Aer2 – 3, resolves 5.

1.2 *Telegraphy (including automatic data transmission)*

27/51 1.2.1 *Amplitude modulation:*

- telegraphy without the use of a modulating audio frequency (by on-off keying) A1 **
- telegraphy by the on-off keying of an amplitude modulating audio frequency or audio frequencies or by the on-off keying of the modulated emission and including selective calling, single sideband, full carrier A2H
- multichannel voice frequency telegraphy, single sideband, suppressed carrier A7J
- other transmissions such as automatic data transmission, single sideband, suppressed carrier A9J

27/52 1.2.2 *Frequency modulation:*

- telegraphy by frequency shift keying without the use of a modulating audio frequency, one of two frequencies being emitted at any instant F1 **

** A1 and F1 are permitted provided they do not cause harmful interference to the classes of emission A2H, A3J, A7J and A9J. In addition, A1 and F1 emissions shall be in accordance with the provisions in Nos. 27/65 to 27/66C and care should be taken to place these emissions at or near the centre of the channel. However, a modulating audio frequency is permitted with single sideband transmitters, where the carrier is suppressed in accordance with No. 27/63.

27/53 SUP

2. Power

- 27/54** 2.1 Unless otherwise specified in Part II of this Appendix, the peak envelope powers supplied to the antenna transmission line shall not exceed the maximum values indicated in the table below; the corresponding peak effective radiated powers being assumed to be equal to two-thirds of these values:

Class of emission	Stations	Maximum peak envelope power
A2H, A3J, A7J, A9J A3*, A3H* (100 % modulation)	Aeronautical stations Aircraft stations	6 kW 400 W
Other emissions such as A1, F1	Aeronautical stations Aircraft stations	1.5 kW 100 W

* A3 and A3H to be used only on 3 023 kHz, and 5 680 kHz, as well as in cases covered by Resolution No. Aer2-3, resolves 5.

- 27/55** 2.2 It is assumed that the maximum peak envelope powers specified above for aeronautical stations will produce the mean effective radiated power of 1 kW used as a basis for the interference range contours.
- 27/56** 2.3 In order to provide satisfactory communication with aircraft, aeronautical stations serving MWARA, VOLMET and world-wide allotment areas may exceed the power limits specified in No. 27/54, except in the case of 3 023 kHz and 5 680 kHz which are subject to the special provisions of Nos. 27/208 to 27/214. In each such case, the administration having jurisdiction over the aeronautical station shall note No. 694 of the Radio Regulations and ensure:
- 27/57** a) that when there is any possibility of harmful interference co-ordination is effected with the administrations concerned;
- 27/58** b) that harmful interference is not caused to stations using frequencies in accordance with the applicable provisions of the Allotment Plan;
- 27/59** c) that in other MWARAs, RDARAs or VOLMET areas allotted the same frequencies, the specified protection ratios within the boundaries of those areas shall be maintained;
- 27/60** d) that the directional characteristics of the antenna are such as to minimize radiation in unnecessary directions, particularly towards other MWARAs, RDARAs or VOLMET areas which have been allotted the same frequencies;
- 27/61** e) that, in accordance with the Radio Regulations, all details of the assignment(s), including the transmitting antenna characteristics shall be notified to the I.F.R.B.

27/62 2.4 It is recognized that the power employed by aircraft transmitters may, in practice, exceed the limits specified in No. 27/54. However, the use of such increased power (which normally should not exceed 600 W P_p) shall not cause harmful interference to stations using frequencies in accordance with the technical principles on which the Allotment Plan is based.

D. Limits to the power levels of unwanted emissions

1. *Technical provisions relating to the use of single-sideband emissions*

27/63 1.1 *Definitions of carrier modes:*

Carrier mode	Level N (dB) of the carrier with respect to peak envelope power
Full carrier (for example A2H)	$0 \geq N \geq -6$
Suppressed carrier (for example A3J)	Aircraft stations $N < -26$ Aeronautical stations $N < -40$

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2. *Tolerance for levels of emission outside the necessary bandwidth*

27/65 2.1 In a single-sideband transmission, the mean power of any emission supplied to the antenna transmission line of an aeronautical or aircraft station on any discrete frequency, shall be less than the mean power (P_m) of the transmitter in accordance with the table in No. 27/66.

27/66 2.2 For aircraft station transmitter types and for aeronautical station transmitters first installed before 1 February 1983 :

Frequency separation Δ from the assigned frequency kHz	Minimum attenuation below mean power (P_m) dB
$2 < \Delta < 6$	25
$6 < \Delta < 10$	35
$10 < \Delta$	Aircraft stations: 40 Aeronautical stations: $43 + 10 \log_{10} (P_m)$ (watts)

27/66A *Note:* All transmitters first placed in operation after 1 February 1983 shall comply with the specifications contained in No. 27/66C.

27/66B 2.3 In a single-sideband transmission, the peak envelope power (P_p) of any emission supplied to the antenna transmission line of an aeronautical or aircraft station on any discrete frequency, shall be less than the peak envelope power (P_p) of the transmitter in accordance with the table in No. 27/66C.

27/66C 2.4 For aircraft station transmitters first installed after 1 February 1983 and for aeronautical station transmitters in use after 1 February 1983:

Frequency separation Δ from the assigned frequency kHz	Minimum attenuation below peak envelope power (P_p) dB
$1.5 \leq \Delta < 4.5$	30
$4.5 \leq \Delta < 7.5$	38
$7.5 \leq \Delta$	Aircraft stations: 43 Aeronautical stations: *

* For transmitter power up to and including 50 watts: $43 + 10 \log_{10} P_p$ (watts). For transmitter powers more than 50 watts, the attenuation shall be at least 60 dB.

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E. Other technical provisions

1. *Assigned frequencies*

27/72 1.1 For single-sideband emissions, except the class of emission A2H, the assigned frequency shall be at a value 1400 Hz above the carrier (reference) frequency.

27/72A 1.2 For aeronautical stations equipped with selective calling systems, the class of emission A2H shall be indicated in the Supplementary Information column of the form of notice (see Appendix 1 to the Radio Regulations).

27/72B 1.3 For classes of emission A1 and F1 the assigned frequency shall be chosen in accordance with the provisions of the footnote to Nos. 27/51 and 27/52.

27/73 1.4 The assigned frequency of a station employing double sideband emissions (A3) shall be at the carrier (reference) frequency.

PART II

**Plan for the Allotment of Frequencies for the Aeronautical Mobile (R)
Service in the Exclusive Bands between 2 850 and 22 000 kHz**

Section I

Description of the Boundaries of the Areas and Sub-Areas

- 27/74 1. The boundary descriptions which follow delineate the areas to which frequencies are allotted under the Frequency Allotment Plan.
- 27/75 2. These areas are shown graphically on the maps associated with this Appendix. If there is any difference between the areas as shown on the maps and as described, the written description is to be considered correct.
- 27/76 3. References to the name of a country or of a geographical area in the descriptions or on the maps and the borders shown on the maps do not imply the expression of any opinion whatsoever on the part of the ITU concerning the political status of such a country or geographical area or any official recognition of these borders.
- 27/77 4. In the description of the Major World Air Route Areas (MWARAs) all lines between points not otherwise specified are defined as great circles.
- 27/78 In the description of the Regional and Domestic Air Route Areas (RDARAs) and Sub-Areas all lines between points not otherwise specified are defined as straight lines on a Mercator Projection map.
- 27/79 In the description of the VOLMET areas all lines between points are defined as great circles.

ARTICLE 1

**Description of the Boundaries of the Major World
Air Route Areas (MWARAs)**

- 27/80 *Major World Air Route Area—CARIBBEAN
(MWARA-CAR)*

From the point 20°N 120°W through the points 35°N 120°W, 35°N 85°W, 43°N 74°W 40°N 60°W, 00° 48°W, 00° 80°W, to the point 20°N 120°W.

- 27/81 SUP

27/82 *Major World Air Route Area – CENTRAL EAST PACIFIC*
(MWARA-CEP)

From the point 50°N 122°W through the points 38°N 120°W, 15°N 110°W, 20°S 145°W, 20°S 152°W, 30°N 165°W, to the point 50°N 122°W.

27/83 *Major World Air Route Area – CENTRAL WEST PACIFIC*
(MWARA-CWP)

From the point 40°N 117°E through the points 25°N 155°W, 17°N 155°W, 00° 165°W, 00° 170°E, 12°S 165°E, 12°S 136°E, 09°N 115°E, 23°N 114°E, to the point 40°N 117°E.

27/84 *Major World Air Route Area – EUROPE*
(MWARA-EUR)

From the point 33°N 12°W through the points 54°N 12°W, 70°N 00°, 74°N 40°E, 74°N 52°E, 60°N 52°E, 40°N 36°E, 29°N 35°30'E, 32°N 13°E, to the point 33°N 12°W.

27/85 SUP

27/85A *Major World Air Route Area – INDIAN OCEAN*
(MWARA-INO)

From the South Pole through the points 30°S 26°E, 20°N 35°E, 30°N 60°E, 30°N 90°E, 30°S 120°E, 40°S 160°E to the South Pole.

27/86 *Major World Air Route Area – MIDDLE EAST*
(MWARA-MID)

From the point 51°N 30°E through the points 57°N 37°E, 50°N 80°E, 44°N 94°E, 08°N 76°E, 11°45'N 42°E, 16°N 42°E, 30°N 30°E, to the point 51°N 30°E.

27/87 *Major World Air Route Area – NORTH ATLANTIC*
(MWARA-NAT)

From the North Pole through the points 60°N 135°W, 49°N 120°W, 49°N 74°W, 39°N 78°W, 18°N 66°W, 05°N 55°W, 16°N 26°W, 32°N 08°W, 44°N 02°E, 60°N 20°E, to the North Pole.

27/102 *Major World Air Route Area – SOUTH EAST ASIA*
(MWARA-SEA)

From the point 26°N 130°E, through the points 00° 130°E, 00° 135°E, 12°S 145°E, 12°S 160°E, 25°S 155°E, 40°S 150°E, 35°S 115°E, 18°N 62°E, 26°N 65°E, to the point 26°N 130°E.

27/103 *Major World Air Route Area – SOUTH PACIFIC*
(MWARA-SP)

From the South Pole through the points 38°S 145°E, 00° 167°E, 00° 175°W, 22°N 158°W, 22°N 156°W, 00° 120°W to the South Pole.

27/103A *Major World Air Route Area – EAST ASIA*
(MWARA-EA)

From the point 55°N 124°E through the points 37°N 145°E, 26°N 130°E, 00° 130°E, 00° 80°E, 18°N 62°E, 37°N 67°E, 55°N 80°E to the point 55°N 124°E.

ARTICLE 2

**Description of the Boundaries of the Regional
and Domestic Air Route Areas
(RDARAs)**

27/104 *Regional and Domestic Air Route Area-1*
(RDARA-1)

From the North Pole along the 15°W meridian to the point 72°N 15°W, then through the points 40°N 50°W, 30°N 39°W, 30°N 10°W, 31°N 10°W, to the point 31°N 10°E. Then along the Libya-Tunisia border to the Mediterranean, thence along the coast of Libya and the Arab Republic of Egypt to Alexandria. Thence to Cairo, eastward along the Cairo parallel to intersect the 40°E meridian, and north along the 40°E meridian to the south coast of the Black Sea. Thence west along the Black Sea coast of Turkey to intersect the 30°E meridian, then along the 30°E meridian to the border of Roumania and the U.S.S.R., thence along the border between the U.S.S.R. and the following countries: Roumania, Hungary, the Czechoslovak Socialist Republic and Poland. Thence along the U.S.S.R. Baltic Sea coast, to the border between Finland and the U.S.S.R., and between Norway and the U.S.S.R., to the point 70°N 32°E, and along the 32°E meridian to the North Pole.

27/105 *Sub-Area 1A*

From the point 65°N 26°W, and through the points 40°N 50°W, 40°N 20°W, 60°N 20°W, 60°N 26°W, to the point 65°N 26°W.

27/106 *Sub-Area 1B*

From the North Pole along the 15°W meridian to the point 72°N 15°W, then through the points 65°N 26°W, 60°N 26°W, 60°N 20°W to the points 50°N 20°W and 50°N 10°W, thence east along the territorial waters between the Channel Islands and the French coastline, reaching the latter at the meridian 03°W. Thence following the French coastline northeastward and the frontier of France with Belgium, Luxembourg and the Federal Republic of Germany. Thence along the border between Switzerland and the Federal Republic of Germany and along the border between the latter and Austria. Thence along the border between the Czechoslovak Socialist Republic and the Federal Republic of Germany, then along the border between the Federal Republic of Germany and the German Democratic Republic towards the Baltic Sea. Then west along the coastline of the Federal Republic of Germany to the border between the latter and Denmark. Along this border to the North Sea. Thence along the 55°N parallel to the point 55°N 04°E, then through the points 56°N 03°E, 59°N 02°E, 62°N 01°E. Thence along the 01°E meridian to the North Pole.

27/107 *Sub-Area 1C*

From the North Pole along the meridian 01°E to the point 62°N 01°E. Thence through the points 59°N 02°E, 56°N 03°E, 55°N 04°E and then east along the 55°N parallel and the border between Denmark and the Federal Republic of Germany to the Baltic Sea and along the Baltic Sea coast of the Federal Republic of Germany to the border between the Federal Republic of Germany and the German Democratic Republic. Along this border and continuing along the western borders of the Czechoslovak Socialist Republic and Austria to the borders between Austria and Switzerland, Austria and Liechtenstein and Austria and Switzerland. Thence eastward along the southern borders of Austria and Hungary, thence along the border between Hungary and Roumania. Thence, along the border between the U.S.S.R. and the following countries: Hungary, the Czechoslovak Socialist Republic and Poland. Thence to the Baltic Sea, along the U.S.S.R. Baltic Sea coast, along the borders between Finland and the U.S.S.R. and between Norway and the U.S.S.R. to the point 70°N 32°E, then along the 32°E meridian to the North Pole.

27/108 *Sub-Area 1D*

From the junction of the borders of the U.S.S.R., Hungary and Roumania, westward along the southern borders of Hungary and Austria to the border between Switzerland and Italy, and the border between France and Italy to the Mediterranean Sea. Thence to 43°N 10°E to 41°N 10°E to 41°N 07°E, thence along the 07°E meridian to the North African coast. Then along the North African coast including Tunis, Tripoli, Benghazi, to the coastal border between Libya and the Arab Republic of Egypt. Thence along the coast to Alexandria, then to Cairo, and along the Cairo parallel to the 40°E meridian. North along the 40°E meridian to the intersection with the border between the Syrian Arab Republic and the Republic of Iraq and along this border up to the Turkish border. Then along the border between Turkey and the Republic of Iraq, Iran and the U.S.S.R. up to the Black Sea Coast. Thence along the Black Sea Coast of Turkey to intersect the 30°E meridian. Along the 30°E meridian to the border of Roumania and the U.S.S.R., thence along this border to the junction of the borders of the U.S.S.R., Hungary and Roumania.

27/109 *Sub-Area 1E*

From the point 50°N 20°W, through the points 40°N 20°W, 40°N 50°W, 30°N 39°W, 30°N 10°W, 31°N 10°W, to the point 31°N 10°E. Then along the border between Libya and Tunisia to the Mediterranean, thence along the Tunisian coast to intersect the 10°E meridian. Thence along this meridian to the point 43°N 10°E; thence to the borders between Italy and France and between Italy and Switzerland, Austria and Switzerland, Austria and Liechtenstein, Austria and Switzerland, Switzerland and the Federal Republic of Germany, and between France and the Federal Republic of Germany, France and Luxembourg, and France and Belgium to the Channel coast. Thence west through the territorial waters between the Channel Islands and the French coast to the points 50°N 10°W and 50°N 20°W.

27/110*Regional and Domestic Air Route Area-2*
(RDARA-2)

From the North Pole along the 32°E meridian to the 70°N parallel. Then along the border between Norway and the U.S.S.R. and Finland and the U.S.S.R. to the Baltic coast. Along the territorial waters of the U.S.S.R. Baltic coast to the border between the U.S.S.R. and Poland. Thence along the border between the U.S.S.R. and the following countries: Poland, the Czechoslovak Socialist Republic, Hungary and Roumania, to the Black Sea coast at the intersection of the 30°E meridian. Then along the 30°E meridian to the Black Sea coast of Turkey. Along the Black Sea coast of Turkey to the junction of the borders of Turkey and the U.S.S.R. Thence along this common border and the Iran-U.S.S.R. border to Caspian Sea. Then along the Iran Caspian Sea coast and the southern border of the U.S.S.R. to the intersection of the Mongolia-People's Republic of China-U.S.S.R. borders at approximately 49°N 88°E. Then along the 88°E meridian to 55°N. Then along the 55°N parallel to 60°E, and along the 60°E meridian to the North Pole.

27/111 *Sub-Area 2A*

From the North Pole along the 32°E meridian to 70°N. Then along the border between Norway and the U.S.S.R., and Finland and the U.S.S.R. to the Baltic coast, and along the territorial waters of the U.S.S.R. Baltic coast to the point 55°N 20°E, and thence to Moscow. Then to 55°N 60°E, and along the 60°E meridian to the North Pole.

27/112 *Sub-Area 2B*

From the point 55°N 88°E and through the point 55°N 60°E to the point 47°N 53°E. Thence along the east coast of the Caspian Sea to the Iranian coast. Thence eastward along the southern border of the U.S.S.R. to the intersection of the Mongolia-China-U.S.S.R. borders at approximately 49°N 88°E; thence along the 88°E meridian to 55°N.

27/113 *Sub-Area 2C*

From the point 55°N 60°E, to Moscow, to 55°N 20°E. Thence south along the border between the U.S.S.R. and Poland. Thence along the border between the U.S.S.R. and the following countries: Poland, the Czechoslovak Socialist Republic, Hungary and Roumania, to the Black Sea coast at the meridian 30°E. Along the meridian 30°E to the Black Sea coast of Turkey. Along this coastline to the junction of the border between Turkey and the U.S.S.R. Thence along this common border and the Iran-U.S.S.R. border to the Caspian Sea, then along the south coast of the Caspian Sea and thence north along the East Caspian Sea coast and through the point 47°N 53°E to 55°N 60°E.

27/114

*Regional and Domestic Air Route Area-3
(RDARA-3)*

From the North Pole to the point 55°N 60°E, thence along the 55°N parallel to 88°E. Then along the 88°E meridian to the intersection of the Mongolia-China-U.S.S.R. borders at approximately 49°N 88°E. Then along the borders between Mongolia and China, and U.S.S.R. and China, to the coast. Between the territorial waters of U.S.S.R. and Japan to the point 43°N 147°E and through the point 50°N 164°E to 65°N 170°W. Then along the 170°W meridian to the North Pole.

27/115 *Sub-Area 3A*

From the North Pole along the 60°E meridian to 55°N. Then along the 55°N parallel to 88°E. Then through the point 60°N 88°E to 60°N 110°E, and along the 110°E meridian to the North Pole.

27/116 *Sub-Area 3B*

From the North Pole along the 110°E meridian to 60°N 110°E, and through the points 60°N 147°E, 43°N 147°E, 50°N 164°E, to 65°N 170°W. Then along the 170°W meridian to the North Pole.

27/117 *Sub-Area 3C*

From the point 60°N 88°E to the intersection of Mongolia-China-U.S.S.R. borders at approximately 49°N 88°E. Along the borders between Mongolia and China, and U.S.S.R. and China, to the coast. Between the territorial waters of U.S.S.R. and Japan to the point 43°N 147°E. Then through the point 60°N 147°E to the point 60°N 88°E.

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Regional and Domestic Air Route Area-4
(RDARA-4)

From the point 30°N 39°W, and through the points 10°N 20°W, 05°S 20°W, to the point 05°S 12°E. Thence along the border between People's Republic of Congo and the People's Republic of Angola, then along the northern border of the Republic of Zaire, and the borders of the People's Republic of Congo, of the Central African Empire and the Sudan. Thence north along the western border of the Sudan. Along the western border of the Arab Republic of Egypt, northwards to the Mediterranean and along the Mediterranean and Atlantic coasts of North Africa to the point 30°N 10°W. West along the 30°N parallel to close the area at 30°N 39°W.

27/119 *Sub-Area 4A*

From the point 30°N 39°W to 21°N 31°W. Thence to Gao and to Zinder. From Zinder, along the northern border of Nigeria, to a point west of N'Djamena. Then along the parallel to 12°N 22°E. Thence north along the western border of the Sudan, and along the western border of the Arab Republic of Egypt to the Mediterranean. Along the North African Mediterranean coast and Atlantic coast to a point 30°N 10°W. Thence along the 30°N parallel to close the sub-area at 30°N 39°W.

27/120 *Sub-Area 4B*

From the point 21°N 31°W, through the points 10°N 20°W, 05°S 20°W to 05°S 12°E. Thence along the southern border of the People's Republic of the Congo and the Central African Empire to the junction between the Republic of Zaire, the Sudan and the Central African Empire. Along the western border of the Sudan to the point 12°N 22°E. Thence along the N'Djamena parallel to the Nigerian border. Then westward along this border to the point 13°12'N 10°45'E, through Zinder and Gao, to the point 21°N 31°W.

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Regional and Domestic Air Route Area-5
(RDARA-5)

From the point 41°N 40°E to the point 37°N 40°E. Then along the border between Turkey and the Syrian Arab Republic to the Mediterranean coast. Thence to the common border of Libya and the Arab Republic of Egypt on the North African coast excluding Cyprus. Southward along the western border of the Arab Republic of Egypt, and the Sudan to the border of Kenya. Thence east along the northern border of Kenya, then south along the border between Kenya and Somalia and to the East African coast at 02°S 41°E. Then through the point 02°S 73°E to 37°N 73°E. Then east along the border between the Republic of Afghanistan and Pakistan, and west along the southern border of the U.S.S.R. to the Caspian Sea. Then along the northern border of Iran and Turkey to close the area at 41°N 40°E.

27/122 *Sub-Area 5A*

From the point 37°N 40°E, along the border between Turkey and the Syrian Arab Republic to the Mediterranean coast. Thence to the Libyan-Egyptian border on the North African coast, excluding Cyprus. Southward, along the western border of the Arab Republic of Egypt and east along the common border of the Arab Republic of Egypt and the Sudan to 24°N 37°E. Then through the points 11°45'N 42°E, 11°45'N 55°E, 20°N 52°E, to the point 26°N 52°E. Thence along the border between Iran and the Republic of Iraq, and the border between the Republic of Iraq and Turkey, to the point 37°N 40°E.

27/123 *Sub-Area 5B*

From the point 41°N 40°E to 37°N 40°E. Thence east along the borders between Turkey and the Syrian Arab Republic, and Turkey and the Republic of Iraq, and along the border between the Republic of Iraq and Iran to the point 30°N 49°E. Thence along the middle of the Persian Gulf through the points 26°N 52°E and 24°N 60°E, to Bombay. Then to 37°N 73°E. Then east along the border between the Republic of Afghanistan and Pakistan, then west along the southern border of the U.S.S.R., to the Caspian Sea. Then along the northern border of Iran and Turkey to close the sub-area at 41°N 40°E.

27/124 *Sub-Area 5C*

From the point 26°N 52°E, and through the points 13°N 52°E, 13°N 54°E, 02°S 54°E, 02°S 73°E, to Bombay. Then to 24°N 60°E. Then along the middle of the Persian Gulf to 26°N 52°E.

27/125 *Sub-Area 5D*

From the junction of the Arab Republic of Egypt, Libya and the Sudan southward along the western border of Sudan to the border of Kenya. Thence along the northern border of Kenya. Then south along the border between Kenya and Somalia to the east African coast, at the point 02°S 42°E. Then through the points 02°S 54°E, 13°N 54°E, 13°N 52°E to the point 12°N 44°E. Thence northwest along the middle of the Red Sea to 24°N 37°E. Thence along the southern border of the Arab Republic of Egypt to close the sub-area.

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Regional and Domestic Air Route Area-6
(RDARA-6)

From approximately 49°N 88°E, along the border between China and the U.S.S.R. and between Afghanistan and Pakistan, and Iran and Pakistan to the point 23°N 61°E. Thence to Bombay. Then along the 73°E meridian to the point 02°S 73°E, and through the points 02°S 92°E, 10°S 92°E, 10°S 141°E, 00° 141°E, 00° 160°E, 03°30'N 160°E, 03°30'N 170°W, 10°N 170°W, 50°N 164°E, to the point 43°N 147°E. Thence west between the territorial waters of Japan and the U.S.S.R. and along the north-eastern and northern border of China to approximately 49°N 88°E.

27/127 *Sub-Area 6A*

From the point 37°N 75°E, along the border between Pakistan and the Republic of Afghanistan, and Iran and Pakistan to the point 23°N 61°E. Thence to Bombay. From Bombay to 24°N 80°E. Thence to Calcutta. Thence along the coast of Bangladesh and Burma to reach the border between Burma and Thailand. North along this border and that between Burma and Lao People's Democratic Republic. Thence along the border between the People's Republic of China and Burma. Thence westward along the southern border of the People's Republic of China to the point 37°N 75°E.

27/128 *Sub-Area 6B*

From the point 39°49'41''N 124°10'06''E, through the points 39°31'51''N 124°06'31''E, 39°N 124°E to the point 32°30'N 124°E. Between the point 32°30'N 124°E and the point 25°N 123°E, the limit of this Sub-Area is undefined. From the point 25°N 123°E, through the points 21°N 121°30'E, 20°N 120°E, 20°N 176°W, 50°N 164°E, 43°N 147°E, thence west between the territorial waters of Japan and the U.S.S.R. and along the border between the Democratic People's Republic of Korea and the U.S.S.R., and then the border between the People's Republic of China and the Democratic People's Republic of Korea, to the point 39°49'41''N 124°10'06''E.

27/129 *Sub-Area 6C*

From the point 20°N 130°E through the point 04°N 130°E to 04°N 118°E. Thence along the southern borders of Sabah and Sarawak to the coast and then southward along the west coast of Borneo to the 110°E meridian. Thence along 110°E meridian to the point 10°S 110°E. Thence through the points 10°S 141°E, 00° 141°E, 00° 160°E, 03°30'N 160°E, 03°30'N 170°W, 10°N 170°W, 20°N 176°W to 20°N 130°E.

27/130 *Sub-Area 6D*

From the junction of the borders of the People's Republic of China, India and Burma, south along the India–Burma and Bangladesh–Burma borders to the Bay of Bengal. Along the coast of Burma to its southernmost point, then to Weh Island (off the north coast of Sumatra). Then to the point 02°S 92°E, and through the point 10°S 92°E to 10°S 110°E. Then eastward to 10°S 141°E extending northward to 00° 141°E and then to 04°N 130°E through the point 20°N 130°E to 20°N 113°E. Thence, south around the Island of Hainan, and along the border between the People's Republic of China, Viet Nam, the Lao People's Democratic Republic and Burma, to close the Sub-Area at the junction of the borders of the People's Republic of China, India and Burma.

27/131 *Sub-Area 6E*

From the point 20°N 73°E, and through the points 02°S 73°E, 02°S 92°E, through Weh Island (off the north coast of Sumatra) to 10°N 97°E. Thence along the coasts of Burma, Bangladesh and India to Calcutta. Then through the points 24°N 80°E to 20°N 73°E.

27/132 *Sub-Area 6F*

From the point 25°N 123°E, 21°N 121°30'E, 20°N 120°E, 20°N 113°E, thence south around the Island of Hainan and along the People's Republic of China-Viet Nam, People's Republic of China-Lao People's Democratic Republic and People's Republic of China-Burma borders to the junction of the borders of the People's Republic of China, India and Burma, south along the India-Burma and Bangladesh-Burma borders to the Bay of Bengal. Along the coast of Burma to its southernmost point then to Weh Island (off the north coast of Sumatra). Then to the point 02°S 92°E and through the point 10°S 92°E to 10°S 110°E. Then northward along 110°E meridian, thence along the boundary of Sub-Area 6C to the points 20°N 130°E, 43°N 147°E, thence westward between the territorial waters of Japan and the U.S.S.R. and along the border between the Democratic People's Republic of Korea and the U.S.S.R., then the border between the People's Republic of China and the Democratic People's Republic of Korea, to the points 39°49'41''N 124°10'06''E, 39°31'51''N 124°06'31''E, 39°N 124°E, then to the point 32°30'N 124°E.

Between the points 32°30'N 124°E and 25°N 123°E, the limit of this Sub-Area is undefined.

27/132A *Sub-Area 6G*

From the point 32°30'N 124°E northward to 39°N 124°E, 39°31'51''N 124°06'31''E then to 39°49'41''N 124°10'06''E on the border between the People's Republic of China and the Democratic People's Republic of Korea. Then along the border of the People's Republic of China to the junction of the border with India and Burma. Thence southward along the India-Burma and Bangladesh-Burma borders to the Bay of Bengal. Along the coast of Burma to its southernmost point. Then to Weh Island (off the north coast of Sumatra). Then to the point 02°S 92°E and through the point 10°S 92°E to 10°S 110°E. Then eastward to 10°S 141°E extending northward to 00°141°E and then to 04°N 130°E through the point 20°N 130°E to 20°N 120°40'E. Thence northward to the points 21°N 121°30'E and 25°N 123°E.

Between the points 25°N 123°E and the point 32°30'N 124°E, the limit of this Sub-Area is undefined.

In the area where Sub-Areas 6D, 6F and 6G are common, the frequencies allotted to Sub-Area 6G shall be used only by the aeronautical stations of the People's Republic of China; the frequencies allotted to Sub-Areas 6D and 6F will be used only by the aeronautical stations of the other administrations in the common area. Also in this common area, the operational use by the People's Republic of China of the frequencies allotted to Sub-Area 6G shall be within the area defined by a line starting at 21°32'52''N 108°E, passing through the points 20°N 108°E, 20°N 107°E, 18°N 107°E, 18°N 108°E, 15°N 110°E, 10°N 110°E, 06°N 108°E, 03°30'N 112°E, 04°N 113°E, 08°N 116°E, 10°N 118°E, 14°N 119°E, 18°N 119°E to 20°N 120°40'E and thence along the limit of Sub-Area 6D to 21°32'52''N 108°E.

27/133

Regional and Domestic Air Route Area-7
(RDARA-7)

From the South Pole along the 20°W meridian to 05°S. Then along the 05°S parallel to 12°E. Thence along the border between People's Republic of Congo and People's Republic of Angola, then along the northern border of the Republic of Zaire, along the border between Uganda and Sudan, and the borders between Kenya and

Sudan, Ethiopia and Somalia, to the point 02°S 42°E. Then to 02°S 60°E and along the 60°E meridian to 11°S, then through the points 11°S 65°E, 40°S 65°E, 40°S 60°E to the South Pole.

27/134 *Sub-Area 7A*

From the South Pole along the 20°W meridian to 05°S. Then through the points 05°S 10°E, 40°S 10°E, to 40°S 60°E. Then along the 60°E meridian to the South Pole.

27/135 *Sub-Area 7B*

From the point 05°S 10°E to 05°S 12°E. Thence along the border between People's Republic of Congo and People's Republic of Angola, then along the northern border of the Republic of Zaire, to the junction of the borders of Uganda, Republic of Zaire and Sudan. Thence along the eastern borders of the Republic of Zaire, the Republic of Rwanda, the Republic of Burundi, and the Republic of Zaire. Thence along the southern borders of the Republic of Zaire and the People's Republic of Angola to the coast of the South Atlantic. Thence to the point 17°S 10°E, and then to the point 05°S 10°E.

27/136 *Sub-Area 7C*

From the junction of the borders of Uganda, Republic of Zaire and Sudan along the western borders of Uganda and Tanzania, and then along the southern border of Tanzania to the coast. Thence through the points 11°S 41°E, 11°S 60°E, 02°S 60°E, to 02°S 41°E and thence to the east coast of Africa. Then north along the eastern border of Kenya, then west along the northern borders of Kenya and Uganda to close the sub-area at the junction of the borders of the Republic of Zaire, Sudan and Uganda.

27/137 *Sub-Area 7D*

From the border between Tanzania and Mozambique on Lake Nyasa, south along the west border of Mozambique to the east coast of Africa, then through the points 27°S 33°E, 40°S 33°E, 40°S 65°E, 11°S 65°E, to 11°S 41°E. Thence along the northern border of Mozambique to Lake Nyasa.

27/138 *Sub-Area 7E*

From the point 17°S 10°E, and through the points 40°S 10°E, 40°S 33°E, to 27°S 33°E. Thence along the west border of Mozambique and the part of the western border of Tanzania as far as the northern point of Lake Nyasa. Thence along the borders between Malawi and Tanzania and between Zambia and Tanzania and along the borders between the Republic of Zaire and Zambia, the People's Republic of Angola and Zambia, and the People's Republic of Angola and Namibia to the coast at the point 17°S 10°E.

27/138A Sub-Area 7F

From the point 05°S 10°E to 05°S 12°E, along the border between the People's Republic of the Congo and the People's Republic of Angola to the junction point of the borders of the People's Republic of the Congo, the People's Republic of Angola, and the Republic of Zaire. Thence along the border between the People's Republic of Angola and the Republic of Zaire until the coast of the Atlantic, along the coastline until the Zaire River and thence along the northern, eastern and southern border of the People's Republic of Angola to the coast of the South Atlantic. Thence to the point 17°S 10°E and then to the point 05°S 10°E.

27/139***Regional and Domestic Air Route Area-8***
(RDARA-8)

From the South Pole along the 60°E meridian to 40°S then through the points 40°S 65°E, 11°S 65°E, 11°S 60°E, 02°S 60°E, 02°S 92°E, 10°S 92°E, to 10°S 110°E. Then along the 110°E meridian to the South Pole.

27/140 SUP**27/141*****Regional and Domestic Air Route Area-9***
(RDARA-9)

From the South Pole along the 160°E meridian to 27°S. Then through the points 19°S 153°E, 10°S 145°E, 10°S 141°E, 00° 141°E, 00° 160°E, 03°30'N 160°E, 03°30'N 120°W. Then along the 120°W meridian to the South Pole.

27/142 SUP**27/143 Sub-Area-9B**

From the point 00° 141°E through points 10°S 141°E, 10°S 145°E, 27°S 160°E, 27°S 157°W, 03°30'N 157°W, 03°30'N 160°E, 00° 160°E to the point 00° 141°E.

27/144 Sub-Area 9C

From the South Pole along the 170°W meridian to 03°30'N. Then through the point 03°30'N 120°W and along the 120°W meridian to the South Pole.

27/145 Sub-Area 9D

From the South Pole along the 160°E meridian to 27°S. Then through the point 27°S 170°W and along the 170°W meridian to the South Pole.

27/145A *Regional and Domestic Air Route Area-10*
(RDARA-10)

From the point 50°N 164°E to 66°N 169°W. Then along the 169°W meridian to the North Pole. Then through the points 82°N 30°E, 82°N 00°, 73°N 00°, 73°N 15°W. Then along the 15°W meridian to 72°N. Then through the points 40°N 50°W, 40°N 65°W to 44°30'N 73°W, 41°N 81°W, 41°N 88°W, 48°N 91°W, 48°N 127°W, 50°N 130°W, then westward to the point 50°N 164°E.

27/146 *Sub-Area 10A*

From the point 50°N 164°E to 66°N 169°W, along the 169°W meridian to the North Pole, along the 130°W meridian to 50°N, then westward to the point 50°N 164°E.

27/147 *Sub-Area 10B*

From the point 57°N 140°W, along the 140°W meridian to the North Pole. Then along the 91°W meridian to 48°N. Thence through the points 48°N 127°W, 57°N 139°W, to 57°N 140°W.

27/148 *Sub-Area 10C*

From the point 57°N 140°W, and through the points 60°N 140°W, 60°N 91°W, 48°N 91°W, 48°N 127°W, 57°N 139°W, to 57°N 140°W.

27/149 *Sub-Area 10D*

From the point 48°N 98°W, along the 98°W meridian to the North Pole. Then along the 45°W meridian to 69°N. Then through the points 61°N 70°W, 45°N 72°W, 41°N 81°W, 41°N 88°W, 48°N 91°W, to 48°N 98°W.

27/150 *Sub-Area 10E*

From the point 45°N 74°W, and through the point 61°N 72°W to 69°N 47°W. Then along the 47°W meridian to the North Pole. Then along the 15°W meridian to 72°N. Then through the points 40°N 50°W, 40°N 65°W, to close the sub-area at 45°N 74°W.

27/150A *Sub-Area 10F*

From the North Pole through the points 82°N 30°E, 82°N 00°, 73°N 00°, 73°N 20°W, 70°N 20°W, 63°30'N 39°W, 58°30'N 43°W, 58°30'N 50°W, 63°30'N 55°44'W, 65°30'N 58°39'W, 74°N 68°18'W, 76°N 76°W, 78°N 75°W, 82°N 60°W to the North Pole.

27/150B *Regional and Domestic Air Route Area-11*
(RDARA-11)

From the point 29°N 180° through the points 50°N 164°E, 50°N 127°W. Then along the border between the United States of America and Canada to 46°N 67°W, then to 40°N 65°W, 40°N 50°W, 25°N 35°W, 25°N 98°W, 33°N 119°W, 33°N 153°W, 29°N 153°W to the point 29°N 180°.

27/151 *Sub-Area 11A*

From the point 29°N 180°, through the points 50°N 164°E, 50°N 130°W, 33°N 130°W, 33°N 153°W, 29°N 153°W, to the point 29°N 180°.

27/152 *Sub-Area 11B*

From the point 50°N 130°W and through the points 33°N 130°W, 33°N 119°W, 25°N 98°W, 25°N 65°W, 40°N 65°W, 46°N 67°W. Then along the border between the United States of America and Canada through 50°N 127°W, to the point 50°N 130°W.

27/152A *Sub-Area 11C*

From the point 25°N 65°W and through the points 40°N 65°W, 40°N 50°W, 25°N 35°W, to the point 25°N 65°W.

27/152B*Regional and Domestic Air Route Area-12*
(RDARA-12)

From the point 03°30'N 170°W to the point 10°N 170°W, then along the boundary between ITU Regions 2 and 3 to 29°N 180°, and thence to 29°N 153°W, 33°N 153°W, through the points 33°N 120°W, 35°N 120°W, 32°N 104°W, 25°N 91°W, 26°N 91°W, 26°N 79°W, 27°N 79°W, 27°N 76°30'W, 25°N 70°W, 25°N 35°W and along the boundary between ITU Regions 1 and 2 to 00° 20°W. Thence through the points 00° 44°W, 04°24'N 50°39'W. Then along the boundaries between Brazil and the French Department of Guiana, Surinam, Guyana, Venezuela, Colombia to the junction of Brazil, Peru and Colombia then along the boundaries between Peru and Colombia and Peru and Ecuador to the point 04°S 93°W. Then to the point 05°S 93°W and through the points 05°S 120°W, 03°30'N 120°W to the point 03°30'N 170°W.

27/153 *Sub-Area 12A*

From the point 03°30'N 170°W to the point 10°N 170°W, then along the boundary between ITU Regions 2 and 3 to 29°N 180°, and thence through the points 29°N 153°W, 03°30'N 153°W to the point 03°30'N 170°W.

27/154 *Sub-Area 12B*

From the point 03°30'N 153°W to 33°N 153°W, through the points 33°N 120°W, 17°N 115°W, 14°N 93°W, 02°N 86°W, 02°N 93°W, 05°S 93°W, 05°S 120°W, 03°30'N 120°W, to the point 03°30'N 153°W.

27/155 *Sub-Area 12C*

From the point 33°N 120°W, through the points 35°N 120°W, 32°N 104°W, 25°N 91°W, 23°N 83°W, 22°N 83°W, 13°N 90°W, 16°N 116°W, to the point 33°N 120°W.

27/156 *Sub-Area 12D*

From the point 20°N 91°W, through the points 26°N 91°W, 26°N 79°W, 27°N 79°W, 27°N 76°30'W, 26°N 73°W, 17°N 58°W, to 10°N 58°W. Thence through Panama City, Colon, Swan Island, and Belize City to the point 20°N 91°W.

27/157 *Sub-Area 12E*

From the point 15°N 95°W and through 23°N 92°W, 23°N 85°W, 19°N 85°W, 09°N 77°W, 02°N 79°W. Thence to 01°N 75°W along the eastern and southern border of Ecuador to the point 04°S 81°W, and from there to 02°N 81°W and 02°N 86°W, 14°N 93°W to close the sub-area at 15°N 95°W.

27/158 *Sub-Area 12F*

From the point 02°N 79°W to the point 08°N 83°W, then along the border between Panama and Costa Rica, through the points 10°N 83°W, 13°N 83°W, 13°N 70°W, 08°N 70°W, 06°N 67°W and 01°N 66°W. Then along the border between Brazil and Colombia to 04°S 70°W. Thence along the border between Colombia and Peru, continuing along the border between Colombia and Ecuador, to the point 02°N 79°W.

27/159 *Sub-Area 12G*

From the point 07°N 73°W, through the points 14°N 73°W, 14°N 58°W, 01°31'N 58°W and along the borders of Brazil with Guyana, Venezuela, Colombia through the points 01°57'N 68°W, 05°N 69°W, to the point 07°N 73°W.

27/160 *Sub-Area 12H*

From the point 05°N 70°W, through the points 08°45'N 60°W, 08°N 58°W, 08°N 49°W, 04°10'N 51°36'W, and along the borders of Brazil with the French Department of Guiana, Surinam, Guyana, Venezuela and Colombia to the junction of the borders of Brazil, Colombia and Peru, to the point 05°N 70°W.

27/161 *Sub-Area 12I*

From the point 25°N 70°W, through the point 25°N 35°W and along the boundary between ITU Regions 1 and 2, to 00° 20°W. Thence through the points 00° 44°W, 08°N 54°W, 08°N 58°W, 17°N 58°W, to the point 25°N 70°W.

27/161A *Sub-Area 12J*

From the point 04°S 93°W, through the points 02°N 93°W, 02°N 79°W. Then along the border between Ecuador and Colombia to the junction with the borders of Colombia, Peru and Ecuador. Thence along the border between Peru and Ecuador to the point 04°S 93°W.

27/161B*Regional and Domestic Air Route Area-13
(RDARA-13)*

From the South Pole along the 120°W meridian to 05°S. Then through the points 05°S 93°W, 04°S 82°W, and along the southern border of Ecuador, Colombia, Venezuela, Guyana, Surinam, the French Department of Guiana, to the point 04°24'N 50°39'W. Then through the points 04°24'N 47°W, 00° 32°W to the point 00° 20°W, and along the 20°W meridian to the South Pole.

27/162 Sub-Area 13A

From the point 05°S 120°W through the points 05°S 93°W, 04°S 82°W, 19°S 81°W, 57°S 81°W, to 57°S 90°W. Thence to the South Pole to the point 05°S 120°W.

27/163 Sub-Area 13B

From the point 29°S 111°W, through the points 24°S 111°W, 24°S 104°W, 29°S 104°W, to the point 29°S 111°W.

27/164 Sub-Area 13C

From the point 15°S 47°W, through the points 20°S 44°W, 23°19'S 42°W, 25°S 45°W, 22°30'S 50°39'W, 19°52'S 58°W, and along the borders of Brazil with Paraguay, Bolivia, Peru, Colombia, Venezuela, Guyana, Surinam and the French Department of Guiana to 04°24'N 50°39'W, 04°24'N 47°W, to the point 15°S 47°W.

27/165 Sub-Area 13D

From 11°S 69°30'W along the border between Bolivia and Brazil and through the point 20°10'S 58°W, along the border between Bolivia and Paraguay to 22°30'S 62°30'W. Then along the border between Bolivia and Argentina and through the point 23°S 67°W along the border between Bolivia and Chile and through the point 16°30'S 69°30'W following the border between Bolivia and Peru to the point 11°S 69°30'W.

27/165A Sub-Area 13M

From the point 19°S 81°W, 04°S 82°W, 03°S 80°W, following the border between Peru and Ecuador and the border between Peru and Colombia to the point 11°S 69°30'W, along the border of Peru with Bolivia to 17°30'S 69°30'W, then along the border of Peru with Chile to the point 19°S 81°W.

27/165B Sub-Area 13N

From the point 22°30'S 62°30'W along the border of Paraguay with Bolivia to 20°10'S 58°W, along the border of Paraguay with Brazil to 25°50'S 54°30'W and thence along the border of Paraguay with Argentina to the point 22°30'S 62°30'W.

27/166 Sub-Area 13E

From the point 32°S 81°W through the point 19°S 81°W, up to the intersection of the coast with the border between Chile and Peru, Bolivia and Argentina, to the point of intersection with 32°S and then to the point 32°S 81°W.

27/167 Sub-Area 13F

From the point 57°S 81°W, through the point 32°S 81°W to the intersection of 32°S with the border between Chile and Argentina, through the points 52°S 67°W, 57°S 67°W, 57°S 40°W to the South Pole to the point 57°S 81°W.

27/168 Sub-Area 13G

From the point 36°S 55°W to the intersection of 32°S with the border between Argentina and Chile, then north along the borders of Argentina with Bolivia, Paraguay, Brazil and Uruguay to the point 36°S 55°W.

27/169 Sub-Area 13H

From the point 57°S 90°W and through the point 57°S 70°W to 52°S 70°W. Then along the border between Chile and Argentina to its intersection by 32°S and through the points 36°S 55°W, 57°S 55°W, 57°S 25°W to the South Pole and then to the point 57°S 90°W.

27/170 Sub-Area 13I

From the point 40°S 50°W through the point 36°S 55°W and along the borders of Uruguay with Argentina and Brazil, then through the point 35°S 45°W to the point 40°S 50°W.

27/171 Sub-Area 13J

From the point 15°S 47°W through the points 20°S 44°W, 23°19'S 42°W, 29°S 40°W, 35°S 45°W, and thence along the borders of Brazil with Uruguay, Argentina, Paraguay and Bolivia to the point 19°52'S 58°W, then through the point 18°S 57°37'W to the point 15°S 47°W.

27/172 Sub-Area 13K

From the point 22°30'S 50°39'W and through the points 25°S 45°W, 29°S 40°W, 20°S 32°W, 00° 32°W, 04°24'N 47°W, 04°24'N 50°39'W to the point 22°30'S 50°39'W.

27/173 Sub-Area 13L

From the point 00° 32°W through the points 00° 20°W, the South Pole, 57°S 55°W, 36°S 55°W, 40°S 50°W, 20°S 32°W, to the point 00° 32°W.

27/173A

**Regional and Domestic Air Route Area-14
(RDARA-14)**

From the South Pole along the 110°E meridian to 10°S. Then through the points 10°S 145°E, 19°S 153°E, 27°S 160°E. Then along the 160°E meridian to the South Pole.

27/173B Sub-Area 14A

From the South Pole along the 110°E meridian to 19°S. Then through the points 19°S 118°E, 24°S 120°E, 24°S 131°E. Then along the 131°E meridian to the South Pole.

27/173C Sub-Area 14B

From the point 19°S 110°E to the point 10°S 110°E, thence through 10°S 131°E, 24°S 131°E, 24°S 120°E, 19°S 118°E to the point 19°S 110°E.

27/173D Sub-Area 14C

From the point 24°S 131°E to the point 10°S 131°E, thence through 10°S 139°E, 24°S 139°E to the point 24°S 131°E.

27/173E Sub-Area 14D

From the South Pole along the 131°E meridian to 24°S, then through the points 24°S 139°E, 27°S 139°E, 27°S 142°E, 34°S 142°E, 34°S 139°E. Then along the 139°E meridian to the South Pole.

27/173F Sub-Area 14E

From the point 24°S 139°E along the 139°E meridian to 10°S, then through the points 10°S 145°E, 19°S 153°E to the point 24°S 139°E.

27/173G Sub-Area 14F

From the point 27°S 139°E along the 139°E meridian to 24°S, then through the points 19°S 153°E, 27°S 160°E to the point 27°S 139°E.

27/173H Sub-Area 14G

From the South Pole along the 139°E meridian to 34°S, then through the points 34°S 142°E, 27°S 142°E, 27°S 160°E. Then along the 160°E meridian to the South Pole.

ARTICLE 3

**Description of the Boundaries of the VOLMET
Allotment Areas and VOLMET Reception Areas**

*VOLMET Area – AFRICA-INDIAN OCEAN
(AFI-MET)*

- 27/174** *The AFI-MET allotment area* is defined by a line drawn from the point 29°N 20°W, through the points 37°N 03°W, 37°N 36°E, 30°N 35°E, 10°N 52°E, 22°S 60°E, 35°S 35°E, 35°S 15°E, 08°S 15°W, 12°N 20°W, to the point 29°N 20°W.
- 27/175** *The AFI-MET reception area* is defined by a line drawn from the point 37°N 03°W, through the points 37°N 36°E, 30°N 35°E, 10°N 52°E, 10°N 100°E, the South Pole, the points 29°N 40°W, 29°N 20°W, to the point 37°N 03°W.

*VOLMET Area – NORTH ATLANTIC
(NAT-MET)*

- 27/176** *The NAT-MET allotment area* is defined by a line drawn from the point 41°N 78°W, through the points 51°N 55°W, 24°N 50°W, 24°N 74°W, to the point 41°N 78°W.
- 27/177** *The NAT-MET reception area* is defined by a line drawn from the point 24°N 97°W, through the points 24°N 85°W, 75°N 85°W, 75°N 20°W, 00° 20°W, 00° 95°W, to the point 24°N 97°W.

*VOLMET Area – EUROPE
(EUR-MET)*

- 27/178** *The EUR-MET allotment area* is defined by a line drawn from the point 33°N 12°W, through the points 54°N 12°W, 70°N 00°, 74°N 40°E, 40°N 36°E, 29°N 35°30'E, 32°N 13°E, to the point 33°N 12°W.
- 27/179** *The EUR-MET reception area* is defined by a line drawn from the point 15°N 20°W, through the points 40°N 50°W, 75°N 50°W, 75°N 45°E, 15°N 45°E, to the point 15°N 20°W.

*VOLMET Area – MIDDLE EAST
(MID-MET)*

- 27/180** *The MID-MET allotment area* is defined by a line drawn from the point 50°N 80°E, through the points 29°N 80°E, 27°N 85°E, 16°N 78°E, 22°N 56°E, 16°N 42°E, 30°N 30°E, 51°N 30°E, 57°N 37°E, to the point 50°N 80°E.
- 27/181** *The MID-MET reception area* is defined by a line drawn from the point 50°N 80°E, through the points 50°N 90°E, 35°N 90°E, 27°N 85°E, 16°N 78°E, 22°N 56°E, 16°N 42°E, 30°N 30°E, 51°N 30°E, 57°N 37°E, to the point 50°N 80°E.

VOLMET Area – NORTH CENTRAL ASIA
(NCA-MET)

- 27/181A** The *NCA-MET allotment area* is defined by a line drawn from the point 76°N 32°E, through the points 80°N 90°E, 75°N 168°W, 66°N 168°W, 48°N 160°E, 42°N 135°E, 50°N 130°E, 50°N 90°E, 35°N 70°E, 45°N 30°E, 60°N 20°E, to the point 76°N 32°E.
- 27/181B** The *NCA-MET reception area* is defined by a line drawn from the North Pole, through the points 40°N 168°W, 30°N 140°E, 35°N 70°E, 30°N 20°E, to the North Pole.

VOLMET Area – PACIFIC
(PAC-MET)

- 27/182** The *PAC-MET allotment area* is defined by a line drawn from the point 52°N 132°E, through the points 63°N 149°W, 38°N 120°W, 50°S 120°W, 50°S 145°E, 28°S 145°E, 03°S 129°E, 22°N 112°E to the point 52°N 132°E.
- 27/183** The *PAC-MET reception area* is defined by a line drawn from the point 60°N 100°E through the points 75°N 160°W, 75°N 110°W, 65°S 110°W, 65°S 145°E, 28°S 145°E, 03°S 129°E, 05°N 80°E, 40°N 80°E, to the point 60°N 100°E.

VOLMET Area – SOUTH EAST ASIA
(SEA-MET)

- 27/184** The *SEA-MET allotment area* is defined by a line drawn from the point 55°N 75°E, through the points 55°N 135°E, 45°N 135°E, 35°N 130°E, 10°N 130°E, 10°S 155°E, 35°S 155°E, 35°S 116°E, 08°N 75°E, 26°N 65°E, to the point 55°N 75°E.
- 27/185** The *SEA-MET reception area* is defined by a line drawn from the point 55°N 50°E, through the points 55°N 180°, 50°S 180°, 50°S 70°E, 08°N 70°E, 08°N 50°E, to the point 55°N 50°E.

VOLMET Area – CARIBBEAN
(CAR-MET)

- 27/185A** The *CAR-MET allotment area* is defined by a line drawn from the point 30°N 110°W, through the points 30°N 75°W, 00° 50°W, following the equator to 00° 80°W to the point 30°N 110°W.
- 27/185B** The *CAR-MET reception area* is defined by a line drawn from the point 40°N 120°W, through the points 40°N 20°W, 25°S 20°W, 25°S 120°W, to the point 40°N 120°W.

VOLMET Area – SOUTH AMERICA
(SAM-MET)

- 27/185C** The *SAM-MET allotment area* is defined by a line drawn from the point 15°N 83°W, through the points 15°N 60°W, 05°S 35°W, 55°S 60°W, 55°S 83°W, to the point 15°N 83°W.
- 27/185D** The *SAM-MET reception area* is defined by a line drawn from the point 30°N 120°W through the point 30°N 00°, the South Pole, to the point 30°N 120°W.

ARTICLE 4

World-wide Allotment Areas**27/185E** *World-wide Area I*

The boundaries of this allotment area comprise those of RDARAs 1, 2 and 3.

27/185F *World-wide Area II*

The boundaries of this allotment area comprise those of RDARAs 10, 11, 12A, 12B, 12C, and 12D.

27/185G *World-wide Area III*

The boundaries of this allotment area comprise those of RDARAs 6, 8, 9 and 14.

27/185H *World-wide Area IV*

The boundaries of this allotment area comprise those of RDARAs 12E to 12J inclusive and 13.

27/185I *World-wide Area V*

The boundaries of this allotment area comprise those of RDARAs 4, 5 and 7.

Section II**Allotment of Frequencies in the Aeronautical Mobile (R) Service**

ARTICLE 1

27/186**Frequency Allotment Plan by Areas***Notes :*

- 27/187** a) * = For the exact nature of a restriction on the use of the frequency concerned, refer to: Column 3 of the Frequency Allotment Plan in numerical order of frequencies (Nos. 27/195-27/207A).
- 27/188** b) The following list does not include the world-wide common (R) and (OR) frequencies of 3 023 kHz and 5 680 kHz. The allotment of these frequencies is shown in Article 2.

27/189

Zones Areas Zonas	Bandes de fréquences/ <i>Frequency bands</i> /Bandas de frecuencias (MHz)										
	3	3.5	4.7	5.4 (Reg. 2)	5.6	6.6	9	10	11.3	13.3	18
	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz	kHz
AFI	2 851 2 878	3 419 3 425 3 467	4 657		5 493 5 652 5 658	6 559 6 574 6 673	8 894 8 903		11 300 11 330	13 273 13 288 13 294	17 961
CAR	2 887	3 455			5 520 5 550	6 577 6 586	8 846 8 918		11 387 11 396	13 297	17 907
CEP	2 869	3 413	4 657		5 547 5 574	6 673	8 843	10 057	11 282	13 300	17 904
CWP	2 998	3 455	4 666		5 652 5 661	6 532 6 562	8 903	10 081	11 384	13 300	17 904
EA	3 016	3 485 3 491			5 655 5 670	6 571	8 897	10 042	11 396	13 297 13 303 13 309	17 907
EUR		3 479			5 661	6 598		10 084		13 288	17 961
INO		3 476			5 634		8 879			13 306	17 961
MID	2 944 2 992	3 467 3 473	4 669		5 658 5 667	6 625 6 631	8 918 8 951	10 018	11 375	13 288 13 312	17 961
NAT	2 872 2 899 2 962 2 971 3 016	3 476	4 675		5 598 5 616 5 649	6 622 6 628	8 825 8 831 8 864 8 879 8 891 8 906		11 279 11 309 11 336	13 291 13 306	17 946
NCA	3 004 3 019		4 678		5 646 5 664	6 592		10 096		13 303 13 315	17 958
NP	2 932				5 628	6 655 6 661		10 048	11 330	13 300	17 904
SAM	2 944	3 479	4 665		5 526	6 649	8 855	10 024 10 096	11 360	13 297	17 907
SAT	2 854 2 935	3 452			5 565	6 535	8 861		11 291	13 315 13 357	17 955
SEA		3 470 3 485			5 649 5 655	6 556	8 942	10 066	11 396	13 309 13 318	17 907
SP		3 467			5 559 5 643		8 867	10 084	11 327	13 300	17 904
1						6 556		10 021	11 363		
1B	2 860* 2 881* 2 890	3 458* 3 473* 3 488*			5 484 5 568	6 550 6 595		10 066			
1C	2 977 2 983	3 464 3 470	4 666		5 577 5 595	6 544	8 840		11 366		
1D	2 974 2 980 2 989	3 410 3 416 3 446	4 651		5 622 5 628 5 637	6 604 6 610	8 828	10 060	11 384		
1E	2 965	3 491			5 583	6 667		10 036			
2	2 938 2 950		4 696		5 556	6 583 6 601	8 846 8 855 8 888	10 015 10 045	11 297 11 360 11 390	13 321 13 357	17 964

* Voir/See/Véase 27/187

(voir suite/cont.)

(suite/cont.)

	3	3.5	4.7	5.4 (Reg. 2)	5.6	6.6	9	10	11.3	13.3	18
2A	2 851* 2 863 2 869 2 875 2 881 2 887* 2 896 2 917 2 926 2 932 2 941	3 416* 3 422 3 434 3 440 3 455	4 657* 4 672 4 690		5 481 5 490 5 496 5 502 5 523 5 547 5 559 5 604	6 526 6 532 6 547 6 553 6 559 6 565 6 574 6 673	8 822* 8 876 8 909 8 939	10 048 10 054	11 276 11 285 11 294		
2B	2 857 2 869 2 875 2 881 2 887* 2 896 2 902 2 908 2 914 2 920 2 929	3 401 3 407 3 416* 3 422 3 428 3 449	4 660 4 672 4 681 4 690 4 693		5 490 5 496 5 502 5 508 5 520 5 526 5 550 5 574 5 595 5 607 5 613 5 619	6 526 6 532 6 562 6 568 6 577 6 655 6 661 6 667	8 819 8 834 8 864	10 009 10 024	11 279 11 333 11 339		
2C	2 857 2 863 2 866 2 884 2 893 2 902 2 908 2 914 2 920 2 926 2 932	3 401 3 407 3 428 3 434 3 440 3 449 3 455	4 657* 4 660 4 681 4 693		5 481 5 487 5 508 5 514 5 520 5 526 5 550 5 562 5 574 5 586 5 604	6 535 6 541 6 547 6 553 6 562 6 568 6 577 6 586	8 819 8 834 8 882 8 939	10 009 10 024 10 054	11 276 11 333 11 372		
3	2 893 2 935		4 693		5 556	6 583 6 589	8 846 8 954	10 087	11 318 11 336 11 360	13 267 13 321	17 952
3A	2 854 2 860 2 869 2 875 2 881 2 887* 2 896 2 905 2 911* 2 923* 2 959	3 404 3 416* 3 422 3 431* 3 443 3 452	4 672 4 684 4 690		5 484 5 490 5 496 5 502 5 511 5 517 5 568 5 580 5 601 5 625	6 526 6 532 6 538 6 544 6 550 6 556 6 607 6 613 6 619 6 649	8 837 8 861 8 900 8 942	10 045 10 057	11 309 11 324 11 330		
3B	2 851 2 854 2 872 2 878 2 884* 2 902 2 908 2 914 2 968*	3 401 3 407 3 413 3 419 3 425 3 431* 3 437* 3 443	4 657 4 681		5 493 5 499 5 505 5 514 5 520 5 526 5 550 5 562 5 580 5 601	6 529 6 538 6 544 6 559 6 568 6 577 6 595 6 625 6 631	8 822 8 852 8 861 8 879 8 957	10 024 10 039	11 285 11 291 11 327 11 372		
3C	2 851 2 860 2 866* 2 878 2 905 2 950 2 974 2 980 2 986	3 404 3 410 3 419 3 425 3 452	4 684		5 484 5 514 5 562 5 568 5 586 5 637 5 643	6 550 6 556 6 595 6 658 6 664 6 670	8 837 8 852 8 894 8 915	10 039	11 291 11 303 11 324 11 378		

(voir suite/cont.)

(suite/cont.)

	3	3.5	4.7	5.4 (Reg. 2)	5.6	6.6	9	10	11.3	13.3	18
4						6 565	8 873			13 300	17 904
4A	2926* 2953	3437 3491	4 672*		5 547 5 559	6 526 6 532 6 616	8 816 8 837 8 858	10 039 10 081	11 282 11 318		
4B	2 866 2 893	3 443			5 481 5 574 5 604	6 553 6 577 6 598		10 063	11 324		
5							8 870 8 885	10 012	11 312 11 327	13 354	17 949 17 967
5A	2 986	3 452			5 577 5 583	6 544 6 664	8 822 8 915		11 288		
5B	2 911 2 968	3 431 3 488			5 511 5 568 5 625	6 550 6 595	8 912	10 093			
5C	2 905	3 452			5 583	6 544	8 822				
5D	2 899 2 971	3 482			5 526 5 550	6 535 6 547	8 843	10 048			
6							8 840		11 381	13 291	17 943
6A	2 872 2 923 2 947 3 001	3 479	4 657* 4 675		5 484 5 580 5 601	6 607 6 613 6 658	8 891 8 906 8 948	10 006 10 051 10 081*	11 321 11 357		
6B	2 857 2 920	3 479 3 488			5 502 5 595 5 625	6 607 6 613 6 619	8 864 8 885	10 021 10 093	11 339 11 366		17 955
6C	2 881 2 956	3 473	4 651		5 550 5 580	6 544 6 631	8 834 8 918	10 015			
6D	2 866 2 884	3 416			5 490 5 520 5 568 5 574 5 631	6 550 6 568 6 577 6 595	8 882 8 957		11 309 11 372		
6E	2 854 2 872 2 917 3 001	3 443	4 657* 4 675		5 514 5 526 5 550	6 583 6 655 6 661	8 861* 8 906 8 909	10 036 10 051 10 084	11 357 11 363		
6F	2 926 2 941	3 434 3 440			5 496 5 508	6 526 6 667	8 864 8 939	10 060	11 279 11 366		
6G	2 869* 2 875* 2 890 2 896* 2 899 2 902* 2 911* 2 917* 2 938* 2 953 2 962 2 968* 2 971 2 977 2 983 2 989 2 995	3 413* 3 422* 3 431* 3 437 3 446 3 449* 3 464 3 482	4 651* 4 663* 4 669* 4 672* 4 690* 4 696*		5 481 5 487 5 493* 5 499* 5 505* 5 511* 5 517* 5 523 5 547 5 553 5 559 5 565 5 571 5 577 5 583 5 592 5 598 5 604	6 529 6 535 6 541 6 547 6 553 6 559 6 565 6 574 6 580 6 586 6 598 6 604 6 610 6 616 6 622 6 628 6 634 6 649	8 816 8 825 8 831 8 843 8 858 8 867 8 870* 8 873 8 888* 8 912* 8 960	10 018* 10 054* 10 063*	11 276* 11 282* 11 288 11 294* 11 300* 11 306 11 315 11 369	13 270 13 276	17 913

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(suite/cont.)

	3	3.5	4.7	5.4 (Reg. 2)	5.6	6.6	9	10	11.3	13.3	18
					5610 5616 5622 5628* 5634* 5640*	6652 6673 6682					
7					5508	6586	8888		11285	13354	
7B	2863 2965	3455			5577 5583	6652	8906	10009			
7C	2950	3407			5592	6568 6604	8834	10081	11294		
7D	2998				5481			10096			
7E	2887	3485			5520	6580 6628	8864		11306		
7F	2956	3461			5547 5568	6622	8846 8960				
9			4696		5583	6553	8846 8852	10018	11339		
9B	2860 2905 2929*	3401* 3419 3425 3476*	4660		5484 5508 5523 5565	6538 6547 6598 6622	8819 8837 8861 8906	10009 10024 10039	11393		
9C	2851	3404 3461	4675		5481	6580	8873	10042	11279 11312		
9D	3016	3404			5592	6535	8873		11312		
10			4696	5454	5604	6553	8819 8834	10006 10012	11333 11390	13285	17910
10A	2866 2875 2911 2944 2956 2992	3449 3470		5472 5475	5484 5490 5496 5565 5631	6535 6580 6604	8855 8876	10066	11357 11363 11375		
10B	2854 2860	3404 3467 3488	4651 4666 4681 4690 4693	5460 5466	5553 5568 5583	6547 6574 6598	8837 8903 8939				
10C	2926 2965	3491	4660 4669	5457	5481 5487 5502 5562 5595	6541 6556 6568	8867				
10D	2893 2935	3419 3425 3458	4666 4669 4678	5472 5475	5484 5490 5496 5586 5625	6535 6544 6562	8858 8900				
10E	2869 2944 2992	3446 3473	4651 4666 4684	5460	5481 5559 5577	6547 6598	8843 8954		11276		
10F	2950		4663	5451	5526	6673	8945	10042			

(voir suite/cont.)

(suite/cont.)

	3	3.5	4.7	5.4 (Reg. 2)	5.6	6.6	9	10	11.3	13.3	18
11B	2 851 2 878 3 004 3 019	3 410 3 428 3 434 3 443	4 672	5 451 5 463 5 469	5 508 5 514 5 523 5 571	6 538 6 550 6 559 6 565	8 822 8 885 8 912	10 045 10 093	11 288 11 306	13 312	17 964
12		3 440			5 568			10 054			17 901
12A	2 950				5 604						
12C	2 920 2 980	3 401 3 464	4 693	5 460	5 484 5 490 5 496 5 502 5 589 5 613	6 535 6 571 6 592 6 622 6 628	8 816 8 948 8 957	10 021 10 039	11 324		
12D		3 407			5 562	6 673	8 876	10 015			
12E	2 860 2 956 2 998	3 461 3 488	4 681	5 454 5 475	5 481 5 487 5 583 5 595 5 604	6 547 6 553 6 598	8 852 8 873	10 063 10 090	11 381 11 393		
12F	2 893 2 956 2 965 2 998	3 461 3 488		5 451 5 475	5 508 5 556 5 583 5 604	6 532 6 553	8 873 8 894	10 090	11 297		
12G	2 875 2 956 2 998	3 461 3 488			5 484 5 523 5 559 5 646	6 526 6 616					
12H	2 956 2 998	3 461 3 488		5 451	5 583						
12J	2 860 2 902 2 926 2 965	3 419			5 481 5 496 5 619	6 535 6 547	8 954		11 381 11 384		
13										13 318	17 913
13A								10 048			17 967
13B								10 048			17 967
13C	2 863 2 869 2 992	3 413 3 458 3 473			5 490 5 514 5 553 5 571 5 577	6 541 6 556 6 562 6 568 6 580	8 819 8 834 8 843 8 939	10 042	11 327 11 375	13 309	
13D	2 914 2 983	3 425 3 467	4 660	5 460	5 562	6 622 6 628 6 673	8 867 8 912 8 957	10 084	11 318		
13E	2 851	3 491	4 651 4 663		5 481 5 583 5 604	6 553 6 577	8 858		11 303		17 967
13F	2 851 2 956 2 998	3 446 3 476	4 651 4 663	5 454	5 481 5 583 5 604	6 547 6 553	8 831 8 858 8 864	10 081	11 321 11 330		17 967
13G	2 872 2 971 3 016	3 434 3 470	4 675*	5 469 5 475	5 574	6 586 6 613	8 822 8 885 8 900	10 006 10 021 10 036	11 369		

(voir suite/cont.)

(suite/cont.)

	3	3.5	4.7	5.4 (Reg. 2)	5.6	6.6	9	10	11.3	13.3	18
13H	2 899 2 965	3 455 3 485	4 657 4 693	5 463 5 472	5 484 5 547	6 598	8 825 8 906	10 036 10 045	11 282 11 300	13 267	
13I	2 860 2 878 2 887	3 419	4 678 4 693	5 451 5 466	5 496 5 523	6 574	8 873	10 051			
13J	2 857 2 863 2 878 2 890 2 920	3 410 3 428 3 458	4 684 4 696	5 451 5 454	5 559 5 568 5 577	6 550 6 559 6 580	8 816 8 843	10 012 10 018 10 042	11 276		
13K	2 863 2 932 3 004 3 019	3 401 3 458 3 464	4 663 4 672	5 463	5 481 5 547 5 577 5 604	6 547 6 553 6 580	8 843 8 849 8 945	10 009 10 018 10 042 10 060	11 339 11 366	13 309	
13M	2 908 2 977	3 437 3 449	4 660 4 690	5 463	5 502	6 574 6 628	8 837 8 867 8 903	10 066	11 378		
13N	2 986	3 443		5 457	5 508	6 604	8 828	10 093			
14	2 851 2 878	3 446 3 461 3 479			5 526 5 604	6 580 6 628	8 822 8 855 8 870	10 045 10 087	11 360	13 264	17 946
14A	2 950	3 413	4 678*			6 547 6 553	8 816 8 894				
14B		3 488	4 684*			6 535 6 604 6 673	8 900 8 954				
14C	2 887	3 452	4 684*			6 541 6 586	8 885 8 912				
14D	2 950	3 407	4 693*		5 481	6 559 6 574	8 843 8 858				
14E		3 413				6 565 6 616	8 891 8 945				
14F		3 488				6 526 6 610	8 825 8 831				
14G	2 869 2 944		4 678*		5 481 5 550 5 580		8 876 8 957				
VAFI	2 860	3 404			5 499	6 538	8 852	10 057		13 261	
VCAR	2 950				5 580				11 315		
VEUR	2 998	3 413			5 640	6 580	8 957		11 378	13 264	
VMID	2 956				5 589		8 945		11 393		
VNAT	2 905	3 485			5 592	6 604	8 870	10 051		13 270 13 276	
VNCA		3 461	4 663		5 676			10 090		13 279	
VPAC	2 863					6 679	8 828			13 282	
VSAM	2 881				5 601			10 087		13 279	
VSEA	2 965	3 458			5 673	6 676	8 849		11 387	13 285	

(voir suite/cont.)

(suite/cont.)

	3	3.5	4.7	5.4 (Reg. 2)	5.6	6.6	9	10	11.3	13.3	18	22
W I	3 010		4 654 4 687		5 529 5 532 5 535 5 541	6 637 6 643	8 921 8 924 8 930 8 936	10 027 10 030 10 069 10 072 10 078	11 345 11 351	13 324 13 327 13 333 13 336 13 342 13 345 13 351	17 916 17 922 17 931	21 940 21 946 21 952 21 958 21 967 21 973 21 979 21 988 21 997
W II	3 007 3 013	3 494 3 497	4 654 4 687		5 529 5 538 5 544	6 637 6 640 6 646	8 927 8 933 8 936	10 027 10 033 10 075	11 342 11 348 11 354	13 330 13 339 13 348	17 919 17 925 17 934 17 940	21 964 21 985
W III	3 007		4 687			6 637	8 921 8 930	10 072 10 078	11 342 11 351	13 324 13 333 13 342 13 351	17 916 17 922 17 928 17 934 17 940	21 949 21 970
W IV	3 010				5 535 5 541	6 643	8 924	10 030 10 069	11 345	13 327 13 336 13 345	17 919 17 928 17 937	21 955 21 976 21 991
W V	3 013				5 532 5 538 5 544	6 640 6 646	8 927 8 933	10 033 10 075	11 348 11 354	13 330 13 339 13 348	17 925 17 931 17 937	21 943 21 961 21 982 21 994

ARTICLE 2

**Frequency Allotment Plan
(in numerical order of frequencies)***General Notes:*

27/192 1. *Class of stations:* FA

Classes of emission: see Nos. 27/49-27/52.

Power: Unless otherwise indicated in the Plan, the power values for aeronautical and aircraft stations are those shown in Nos. 27/54-27/62.

Hours: H24, unless otherwise indicated.

27/193 2. A frequency allotted on a "day-time basis" may be used during the period one hour after sunrise to one hour before sunset.

27/194 3. A "common channel" is a channel allotted in common to two or more areas within interference distance of each other and its use is subject to agreement between the administrations concerned.

27/194A 4. The world-wide frequency allotments appearing in the tables at No. 27/189 and Nos. 27/195 to 27/207A, except for carrier (reference) frequencies 3 023 kHz and 5 680 kHz, are reserved for assignment by administrations to stations operating under authority granted by the administration concerned, for the purpose of serving one or more aircraft operating agencies. Such assignments are to provide communications between an appropriate aeronautical station and an aircraft station anywhere in the world for exercising control over regularity of flight and for safety of aircraft. World-wide frequencies are not to be assigned by administrations for MWARA, RDARA and VOLMET purposes. Where the operational area of an aircraft lies wholly within a RDARA or Sub-RDARA boundary, frequencies allotted to those RDARAs and Sub-RDARAs shall be used.

Fréquence kHz Frequency kHz Frecuencia kHz 1	Zone d'emploi autorisé** Authorized area of use** Zona de uso autorizado** 2	Observations** Remarks** Observaciones** 3
2851	M AFI R 2A 3B 3C 9C 11B 13E 13F 14	CC 3B 3C CC 13E 13F C001/2A
2854	M SAT R 3A 3B 6E 10B	CC 3A 3B
2857	R 2B 2C 6B 13J	CC 2B 2C
2860	R 1B 3A 3C 9B 10B 12E 12J 13I V VAFI	CC 3A 3C CC 12E 12J C001/1B
2863	R 2A 2C 7B 13C 13J 13K V VPAC	CC 2A 2C CC 13C 13J 13K
2866	R 2C 3C 4B 6D 10A	C001/3C
2869	M CEP R 2A 2B 3A 6G 10E 13C 14G	CC 2A 2B 3A C009/6G
2872	M NAT R 3B 6A 6E 13G	CC 6A 6E
2875	R 2A 2B 3A 6G 10A 12G	CC 2A 2B 3A C009/6G
2878	M AFI R 3B 3C 11B 13I 13J 14	CC 3B 3C CC 13I 13J
2881	R 1B 2A 2B 3A 6C V VSAM	CC 2A 2B 3A C001/1B
2884	R 2C 3B 6D	C001/3B
2887	M CAR R 2A 2B 3A 7E 13I 14C	CC 2A 2B 3A C001/2A 2B 3A
2890	R 1B 6G 13J	
2893	R 2C 3 4B 10D 12F	CC 2C 3
2896	R 2A 2B 3A 6G	CC 2A 2B 3A C009/6G
2899	M NAT R 5D 6G 13H	
2902	R 2B 2C 3B 6G 12J	CC 2B 2C 3B C009/6G
2905	R 3A 3C 5C 9B V VNAT	CC 3A 3C
2908	R 2B 2C 3B 13M	CC 2B 2C 3B
2911	R 3A 5B 6G 10A	C001/3A C010/6G
2914	R 2B 2C 3B 13D	CC 2B 2C 3B
2917	R 2A 6E 6G	C010/6G
2920	R 2B 2C 6B 12C 13J	CC 2B 2C

bande/band/banda 2 850-3 025 kHz **3 MHz***(suite/cont.)*

1	2	3
2923	R 3A 6A	C001/3A
2926	R 2A 2C 4A 6F 10C 12J	CC 2A 2C C001/4A
2929	R 2B 9B	C001/9B
2932	M NP R 2A 2C 13K	CC 2A 2C
2935	M SAT R 3 10D	
2938	R 2 6G	C009/6G
2941	R 2A 6F	
2944	M MID SAM R 10A 10E 14G	
2947	R 6A	
2950	R 2 3C 7C 10F 12A 14A 14D V VCAR	CC 2 3C CC 14A 14D
2953	R 4A 6G	
2956	R 6C 7F 10A 12E 12F 12G 12H 13F V VMID	CC 12E 12F 12G 12H
2959	R 3A	
2962	M NAT R 6G	
2965	R 1E 7B 10C 12F 12J 13H V VSEA	CC 12F 12J
2968	R 3B 5B 6G	C001/3B C009/6G
2971	M NAT R 5D 6G 13G	
2974	R 1D 3C	
2977	R 1C 6G 13M	
2980	R 1D 3C 12C	
2983	R 1C 6G 13D	
2986	R 3C 5A 13N	
2989	R 1D 6G	
2992	M MID R 10A 10E 13C	
2995	R 6G	
2998	M CWP R 7D 12E 12F 12G 12H 13F V VEUR	CC 12E 12F 12G 12H
3001	R 6A 6E	CC 6A 6E

(voir suite/cont.)

bande/band/banda 2 850-3 025 kHz 3 MHz
(suite/cont.)

1	2	3
3 004	M NCA R 11B 13K	
3 007	W MONDIALE WORLDWIDE MUNDIAL	C100/II III
3 010	W MONDIALE WORLDWIDE MUNDIAL	C100/I IV
3 013	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
3 016	M EA NAT R 9D 13G	
3 019	M NCA R 11B 13K	

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1	2	3
3 023	W MONDIALE WORLDWIDE MUNDIAL (R) et/and/y (OR)	Voir Partie II, Section II, article 3 See Part II, Section II, article 3 Véase Parte II, Sección II, artículo 3

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bande/band/banda 3 400-3 500 kHz 3.5 MHz

1	2	3
3 401	R 2B 2C 3B 9B 12C 13K	CC 2B 2C 3B C001/9B
3 404	R 3A 3C 9C 9D 10B V VAFI	CC 3A 3C CC 9C 9D
3 407	R 2B 2C 3B 7C 12D 14D	CC 2B 2C 3B
3 410	R 1D 3C 11B 13J	
3 413	M CEP R 3B 6G 13C 14A 14E V VEUR	CC 14A 14E C009/6G
3 416	R 1D 2A 2B 3A 6D	CC 2A 2B 3A C001/2A 2B 3A
3 419	M AFI R 3B 3C 9B 10D 12J 13I	CC 3B 3C
3 422	R 2A 2B 3A 6G	CC 2A 2B 3A C001/6G C004/6G
3 425	M AFI R 3B 3C 9B 10D 13D	CC 3B 3C

(voir suite/cont.)

bande/*band*/banda 3 400-3 500 kHz 3.5 MHz
(*suite/cont.*)

1	2	3
3428	R 2B 2C 11B 13J	CC 2B 2C
3431	R 3A 3B 5B 6G	CC 3A 3B C001/3A 3B C009/6G
3434	R 2A 2C 6F 11B 13G	CC 2A 2C
3437	R 3B 4A 6G 13M	C001/3B
3440	R 2A 2C 6F 12	CC 2A 2C
3443	R 3A 3B 4B 6E 11B 13N	CC 3A 3B
3446	R 1D 6G 10E 13F 14	
3449	R 2B 2C 6G 10A 13M	CC 2B 2C C001/6G C004/6G
3452	M SAT R 3A 3C 5A 5C 14C	CC 3A 3C CC 5A 5C
3455	M CAR CWP R 2A 2C 7B 13H	CC 2A 2C
3458	R 1B 10D 13C 13J 13K V VSEA	CC 13C 13J 13K C001/1B
3461	R 7F 9C 12E 12F 12G 12H 14 V VNCA	CC 12E 12F 12G 12H
3464	R 1C 6G 12C 13K	
3467	M AFI MID SP R 10B 13D	CC AFI MID
3470	M SEA R 1C 10A 13G	
3473	M MID R 1B 6C 10E 13C	C001/1B
3476	M INO NAT R 9B 13F	C001/9B
3479	M EUR SAM R 6A 6B 14	
3482	R 5D 6G	
3485	M EA SEA R 7E 13H V VNAT	CC EA SEA
3488	R 1B 5B 6B 10B 12E 12F 12G 12H 14B 14F	CC 12E 12F 12G 12H CC 14B 14F C001/1B
3491	M EA R 1E 4A 10C 13E	CC 1E 4A
3494	W MONDIALE WORLDWIDE MUNDIAL	C100/II
3497	W MONDIALE WORLDWIDE MUNDIAL	C100/II

(*voir suite/cont.*)

1	2	3
4 651	R 1D 6C 6G 10B 10E 13E 13F	CC 13E 13F C001/6G
4 654	W MONDIALE WORLDWIDE MUNDIAL	C100/I II
4 657	M AFI CEP R 2A 2C 3B 6A 6E 13H	CC 2A 2C C001/2A 2C CC 6A 6E C001/6A 6E
4 660	R 2B 2C 9B 10C 13D 13M	CC 2B 2C CC 13D 13M
4 663	R 6G 10F 13E 13F 13K V VNCA	CC 13E 13F 13K C001/6G
4 666	M CWP R 1C 10B 10D 10E	CC 10B 10D 10E
4 669	M MID SAM R 6G 10C 10D	CC 10C 10D C001/6G
4 672	R 2A 2B 3A 4A 6G 11B 13K	CC 2A 2B 3A C001/4A C001/6G
4 675	M NAT R 6A 6E 9C 13G	CC 6A 6E C001/13G
4 678	M NCA R 10D 13I 14A 14G	CC 14A 14G C001/14A 14G
4 681	R 2B 2C 3B 10B 12E	CC 2B 2C 3B
4 684	R 3A 3C 10E 13J 14B 14C	CC 3A 3C CC 14B 14C C001/14B 14C
4 687	W MONDIALE WORLDWIDE MUNDIAL	C100/I II III
4 690	R 2A 2B 3A 6G 10B 13M	CC 2A 2B 3A C001/6G
4 693	R 2B 2C 3 10B 12C 13I 14D	CC 2B 2C 3 C001/14D
4 696	R 2 6G 9 10 13J	C001/6G

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bande/band/banda 5 450-5 480 kHz (Reg. 2)

5.4 MHz

1	2	3
5451	R 10F 11B 12F 12H 13I 13J	CC 12F 12H CC 13I 13J
5454	R 10 12E 13F 13J	
5457	R 10C 13N	
5460	R 10B 10E 12C 13D	
5463	R 11B 13H 13K 13M	
5466	R 10B 13I	
5469	R 11B 13G	
5472	R 10A 10D 13H	
5475	R 10A 10D 12E 12F 13G	CC 12E 12F

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bande/band/banda 5 480-5 680 kHz

5.6 MHz

1	2	3
5481	R 2A 2C 4B 6G 7D 9C 10C 10E 12E 12J 13E 13F 13K 14D 14G	CC 2A 2C CC 10C 10E CC 12E 12J CC 13E 13F CC 14D 14G
5484	R 1B 3A 3C 6A 9B 10A 10D 12C 12G 13H	CC 3A 3C
5487	R 2C 6G 10C 12E	
5490	R 2A 2B 3A 6D 10A 10D 12C 13C	CC 2A 2B 3A
5493	M AFI R 3B 6G	C002/6G
5496	R 2A 2B 3A 6F 10A 10D 12C 12J 13I	CC 2A 2B 3A
5499	R 3B 6G V VAFI	C002/6G
5502	R 2A 2B 3A 6B 10C 12C 13M	CC 2A 2B 3A
5505	R 3B 6G	C003/6G
5508	R 2B 2C 6F 7 9B 11B 12F 13N	CC 2B 2C
5511	R 3A 5B 6G	C002/6G
5514	R 2C 3B 3C 6E 11B 13C	CC 3B 3C
5517	R 3A 6G	C002/6G
5520	M CAR R 2B 2C 3B 6D 7E	CC 2B 2C 3B
5523	R 2A 6G 9B 11B 12G 13I	

(voir suite/cont.)

bande/*band*/banda 5 480-5 680 kHz

5.6 MHz

(suite/cont.)

1	2	3
5 526	M SAM R 2B 2C 3B 5D 6E 10F 14	CC 2B 2C 3B
5 529	W MONDIALE WORLDWIDE MUNDIAL	C100/I II
5 532	W MONDIALE WORLDWIDE MUNDIAL	C100/I V
5 535	W MONDIALE WORLDWIDE MUNDIAL	C100/I IV
5 538	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
5 541	W MONDIALE WORLDWIDE MUNDIAL	C100/I IV
5 544	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
5 547	M CEP R 2A 4A 6G 7F 13H 13K	
5 550	M CAR R 2B 2C 3B 5D 6C 6E 14G	CC 2B 2C 3B
5 553	R 6G 10B 13C	
5 556	R 2 3 12F	CC 2 3
5 559	M SP R 2A 4A 6G 10E 12G 13J	
5 562	R 2C 3B 3C 10C 12D 13D	CC 3B 3C
5 565	M SAT R 6G 9B 10A	
5 568	R 1B 3A 3C 5B 6D 7F 10B 12 13J	CC 3A 3C
5 571	R 6G 11B 13C	
5 574	M CEP R 2B 2C 4B 6D 13G	CC 2B 2C
5 577	R 1C 5A 6G 7B 10E 13C 13J 13K	CC 13C 13J 13K
5 580	R 3A 3B 6A 6C 14G V VCAR	CC 3A 3B
5 583	R 1E 5A 5C 6G 7B 9 10B 12E 12F 12H 13E 13F	CC 5A 5C CC 12E 12F 12H CC 13E 13F
5 586	R 2C 3C 10D	
5 589	R 12C V VMID	
5 592	R 6G 7C 9D V VNAT	
5 595	R 1C 2B 6B 10C 12E	
5 598	M NAT R 6G	
5 601	R 3A 3B 6A V VSAM	CC 3A 3B
5 604	R 2A 2C 4B 6G 10 12A 12E 12F 13E 13F 13K 14	CC 2A 2C CC 12E 12F CC 13E 13F

(voir suite/cont.)

bande/*band*/banda 5 480-5 680 kHz 5.6 MHz
(suite/*cont.*)

1	2	3
5 607	R 2B	
5 610	R 6G	
5 613	R 2B 12C	
5 616	M NAT R 6G	
5 619	R 2B 12J	
5 622	R 1D 6G	
5 625	R 3A 5B 6B 10D	
5 628	M NP R 1D 6G	C003/6G
5 631	R 6D 10A	
5 634	M INO R 6G	C002/6G
5 637	R 1D 3C	
5 640	R 6G V VEUR	C002/6G
5 643	M SP R 3C	
5 646	M NCA R 12G	
5 649	M NAT SEA	
5 652	M AFI CWP	
5 655	M EA SEA	CC EA SEA
5 658	M AFI MID	CC AFI MID
5 661	M CWP EUR	
5 664	M NCA	
5 667	M MID	
5 670	M EA	
5 673	V VSEA	
5 676	V VNCA	

27/201

5 680	W MONDIALE WORLDWIDE MUNDIAL (R) <i>et/and/y</i> (OR)	Voir Partie II, Section II, article 3 See Part II, Section II, article 3 Véase Parte II, Sección II, artículo 3
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1	2	3
6 526	R 2A 2B 3A 4A 6F 12G 14F	CC 2A 2B 3A
6 529	R 3B 6G	
6 532	M CWP R 2A 2B 3A 4A 12F	CC 2A 2B 3A
6 535	M SAT R 2C 5D 6G 9D 10A 10D 12C 12J 14B	
6 538	R 3A 3B 9B 11B V VAFI	CC 3A 3B
6 541	R 2C 6G 10C 13C 14C	
6 544	R 1C 3A 3B 5A 5C 6C 10D	CC 3A 3B CC 5A 5C
6 547	R 2A 2C 5D 6G 9B 10B 10E 12E 12J 13F 13K 14A	CC 2A 2C CC 12E 12J
6 550	R 1B 3A 3C 5B 6D 11B 13J	CC 3A 3C
6 553	R 2A 2C 4B 6G 9 10 12E 12F 13E 13F 13K 14A	CC 2A 2C CC 12E 12F CC 13E 13F
6 556	M SEA R 1 3A 3C 10C 13C	CC 3A 3C
6 559	M AFI R 2A 3B 6G 11B 13J 14D	
6 562	M CWP R 2B 2C 10D 13C	CC 2B 2C
6 565	R 2A 4 6G 11B 14E	
6 568	R 2B 2C 3B 6D 7C 10C 13C	CC 2B 2C 3B
6 571	M EA R 12C	
6 574	M AFI R 2A 6G 10B 13I 13M 14D	
6 577	M CAR R 2B 2C 3B 4B 6D 13E	CC 2B 2C 3B
6 580	R 6G 7E 9C 10A 13C 13J 13K 14 V VEUR	CC 13C 13J 13K
6 583	R 2 3 6E	CC 2 3
6 586	M CAR R 2C 6G 7 13G 14C	
6 589	R 3	
6 592	M NCA R 12C	
6 595	R 1B 3B 3C 5B 6D	CC 3B 3C
6 598	M EUR R 4B 6G 9B 10B 10E 12E 13H	

(voir suite/cont.)

bande/band/banda 6 525-6 685 kHz **6.6 MHz**

(suite/cont.)

1	2	3
6601	R 2	
6604	R 1D 6G 7C 10A 13N 14B V VNAT	
6607	R 3A 6A 6B	
6610	R 1D 6G 14F	
6613	R 3A 6A 6B 13G	
6616	R 4A 6G 12G 14E	
6619	R 3A 6B	
6622	M NAT R 6G 7F 9B 12C 13D	
6625	M MID R 3B	
6628	M NAT R 6G 7E 12C 13D 13M 14	CC 13D 13M
6631	M MID R 3B 6C	
6634	R 6G	
6637	W MONDIALE WORLDWIDE MUNDIAL	C100/I II III
6640	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
6643	W MONDIALE WORLDWIDE MUNDIAL	C100/I IV
6646	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
6649	M SAM R 3A 6G	
6652	R 6G 7B	
6655	M NP R 2B 6E	
6658	R 3C 6A	
6661	M NP R 2B 6E	
6664	R 3C 5A	
6667	R 1E 2B 6F	
6670	R 3C	
6673	M AFI CEP R 2A 6G 10F 12D 13D 14B	
6676	V VSEA	
6679	V VPAC	
6682	R 6G	

1	2	3
8 816	R 4A 6G 12C 13J 14A	
8 819	R 2B 2C 9B 10 13C	CC 2B 2C
8 822	R 2A 3B 5A 5C 11B 13G 14	CC 5A 5C C005/2A
8 825	M NAT R 6G 13H 14F	
8 828	R 1D 13N V VPAC	
8 831	M NAT R 6G 13F 14F	
8 834	R 2B 2C 6C 7C 10 13C	CC 2B 2C
8 837	R 3A 3C 4A 9B 10B 13M	CC 3A 3C
8 840	R 1C 6	
8 843	M CEP R 5D 6G 10E 13C 13J 13K 14D	CC 13C 13J 13K
8 846	M CAR R 2 3 7F 9	CC 2 3
8 849	R 13K V VSEA	
8 852	R 3B 3C 9 12E V VAFI	CC 3B 3C
8 855	M SAM R 2 10A 14	
8 858	R 4A 6G 10D 13E 13F 14D	CC 13E 13F
8 861	M SAT R 3A 3B 6E 9B	CC 3A 3B C011/6E
8 864	M NAT R 2B 6B 6F 7E 13F	CC 6B 6F
8 867	M SP R 6G 10C 13D 13M	CC 13D 13M
8 870	R 5 6G 14 V VNAT	C004/6G
8 873	R 4 6G 9C 9D 12E 12F 13I	CC 9C 9D CC 12E 12F
8 876	R 2A 10A 12D 14G	
8 879	M INO NAT R 3B	
8 882	R 2C 6D	
8 885	R 5 6B 11B 13G 14C	
8 888	R 2 6G 7	C009/6G
8 891	M NAT R 6A 14E	

(voir suite/cont.)

bande/band/banda 8 815-8 965 kHz **9 MHz**
(suite/cont.)

1	2	3
8 894	M AFI R 3C 12F 14A	
8 897	M EA	
8 900	R 3A 10D 13G 14B	
8 903	M AFI CWP R 10B 13M	
8 906	M NAT R 6A 6E 7B 9B 13H	CC 6A 6E
8 909	R 2A 6E	
8 912	R 5B 6G 11B 13D 14C	C004/6G
8 915	R 3C 5A	
8 918	M CAR MID R 6C	
8 921	W MONDIALE WORLDWIDE MUNDIAL	C100/I III
8 924	W MONDIALE WORLDWIDE MUNDIAL	C100/I IV
8 927	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
8 930	W MONDIALE WORLDWIDE MUNDIAL	C100/I III
8 933	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
8 936	W MONDIALE WORLDWIDE MUNDIAL	C100/I II
8 939	R 2A 2C 6F 10B 13C	CC 2A 2C
8 942	M SEA R 3A	
8 945	R 10F 13K 14E V VMID	
8 948	R 6A 12C	
8 951	M MID	
8 954	R 3 10E 12J 14B	
8 957	R 3B 6D 12C 13D 14G V VEUR	
8 960	R 6G 7F	

1	2	3
10006	R 6A 10 13G	
10009	R 2B 2C 7B 9B 13K	CC 2B 2C
10012	R 5 10 13J	
10015	R 2 6C 12D	
10018	M MID R 6G 9 13J 13K	CC 13J 13K C003/6G
10021	R 1 6B 12C 13G	
10024	M SAM R 2B 2C 3B 9B	CC 2B 2C 3B
10027	W MONDIALE WORLDWIDE MUNDIAL	C100/I II
10030	W MONDIALE WORLDWIDE MUNDIAL	C100/I IV
10033	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
10036	R 1E 6E 13G 13H	CC 13G 13H
10039	R 3B 3C 4A 9B 12C	CC 3B 3C
10042	M EA R 9C 10F 13C 13J 13K	CC 13C 13J 13K
10045	R 2 3A 11B 13H 14	CC 2 3A
10048	M NP R 2A 5D 13A 13B	CC 13A 13B
10051	R 6A 6E 13I V VNAT	CC 6A 6E
10054	R 2A 2C 6G 12	CC 2A 2C C004/6G
10057	M CEP R 3A V VAFI	
10060	R 1D 6F 13K	
10063	R 4B 6G 12E	C004/6G
10066	M SEA R 1B 10A 13M	
10069	W MONDIALE WORLDWIDE MUNDIAL	C100/I IV
10072	W MONDIALE WORLDWIDE MUNDIAL	C100/I III
10075	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
10078	W MONDIALE WORLDWIDE MUNDIAL	C100/I III
10081	M CWP R 4A 6A 7C 13F	C006/6A
10084	M EUR SP R 6E 13D	
10087	R 3 14 V VSAM	

(voir suite/cont.)

bande/band/banda 10 005-10 100 kHz **10 MHz**
(suite/cont.)

1	2	3
10090	R 12E 12F V VNCA	CC 12E 12F
10093	R 5B 6B 11B 13N	
10096	M NCA SAM R 7D	

27/205

bande/band/banda 11 275-11 400 kHz **11.3 MHz**

1	2	3
11 276	R 2A 2C 6G 10E 13J	CC 2A 2C C002/6G
11 279	M NAT R 2B 6F 9C	
11 282	M CEP R 4A 6G 13H	C003/6G
11 285	R 2A 3B 7	CC 2A 3B
11 288	R 5A 6G 11B	
11 291	M SAT R 3B 3C	CC 3B 3C
11 294	R 2A 6G 7C	C002/6G
11 297	R 2 12F	
11 300	M AFI R 6G 13H	C002/6G
11 303	R 3C 13E	
11 306	R 6G 7E 11B	
11 309	M NAT R 3A 6D	
11 312	R 5 9C 9D	CC 9C 9D
11 315	R 6G V VCAR	
11 318	R 3 4A 13D	
11 321	R 6A 13F	
11 324	R 3A 3C 4B 12C	CC 3A 3C
11 327	M SP R 3B 5 13C	
11 330	M AFI NP R 3A 13F	
11 333	R 2B 2C 10	CC 2B 2C

(voir suite/cont.)

bande/*band*/banda 11 275-11 400 kHz

11.3 MHz

(suite/cont.)

1	2	3
11 336	M NAT R 3	
11 339	R 2B 6B 9 13K	
11 342	W MONDIALE WORLDWIDE MUNDIAL	C100/II III
11 345	W MONDIALE WORLDWIDE MUNDIAL	C100/I IV
11 348	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
11 351	W MONDIALE WORLDWIDE MUNDIAL	C100/I III
11 354	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
11 357	R 6A 6E 10A	CC 6A 6E
11 360	M SAM R 2 3 14	CC 2 3
11 363	R 1 6E 10A	
11 366	R 1C 6B 6F 13K	CC 6B 6F
11 369	R 6G 13G	
11 372	R 2C 3B 6D	
11 375	M MID R 10A 13C	
11 378	R 3C 13M V VEUR	
11 381	R 6 12E 12J	CC 12E 12J
11 384	M CWP R 1D 12J	
11 387	M CAR V VSEA	
11 390	R 2 10	
11 393	R 9B 12E V VMID	
11 396	M CAR EA SEA	CC EA SEA

27/206

bande/band/banda 13 260-13 360 kHz

13.3 MHz

1	2	3
13 261	V VAFI	
13 264	R 14 V VEUR	
13 267	R 3 13H	
13 270	R 6G V VNAT	
13 273	M AFI	
13 276	R 6G V VNAT	
13 279	V VNCA VSAM	
13 282	V VPAC	
13 285	R 10 V VSEA	
13 288	M AFI EUR MID	CC AFI EUR MID
13 291	M NAT R 6	
13 294	M AFI	
13 297	M CAR EA SAM	CC CAR SAM
13 300	M CEP CWP NP SP R 4	CC CEP CWP NP SP
13 303	M EA NCA	CC EA NCA
13 306	M INO NAT	
13 309	M EA SEA R 13C 13K	CC EA SEA CC 13C 13K
13 312	M MID R 11B	
13 315	M NCA SAT	
13 318	M SEA R 13	
13 321	R 2 3	CC 2 3
13 324	W MONDIALE WORLDWIDE MUNDIAL	C100/I III
13 327	W MONDIALE WORLDWIDE MUNDIAL	C100/I IV
13 330	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
13 333	W MONDIALE WORLDWIDE MUNDIAL	C100/I III
13 336	W MONDIALE WORLDWIDE MUNDIAL	C100/I IV
13 339	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
13 342	W MONDIALE WORLDWIDE MUNDIAL	C100/I III
13 345	W MONDIALE WORLDWIDE MUNDIAL	C100/I IV
13 348	W MONDIALE WORLDWIDE MUNDIAL	C100/II V

(voir suite/cont.)

bande/band/banda 13 260-13 360 kHz **13.3 MHz**
(suite/cont.)

1	2	3
13 351	W MONDIALE WORLDWIDE MUNDIAL	C100/I III
13 354	R 5 7	CC 5 7
13 357	M SAT R 2	

27/207

bande/band/banda 17 900-17 970 kHz **18 MHz**

1	2	3
17901	R 12	
17904	M CEP CWP NP SP R 4	CC CEP CWP NP SP
17907	M CAR EA SAM SEA	CC CAR SAM CC EA SEA
17910	R 10	
17913	R 6G 13	
17916	W MONDIALE WORLDWIDE MUNDIAL	C100/I III
17919	W MONDIALE WORLDWIDE MUNDIAL	C100/II IV
17922	W MONDIALE WORLDWIDE MUNDIAL	C100/I III
17925	W MONDIALE WORLDWIDE MUNDIAL	C100/II V
17928	W MONDIALE WORLDWIDE MUNDIAL	C100/III IV
17931	W MONDIALE WORLDWIDE MUNDIAL	C100/I V
17934	W MONDIALE WORLDWIDE MUNDIAL	C100/II III
17937	W MONDIALE WORLDWIDE MUNDIAL	C100/IV V
17940	W MONDIALE WORLDWIDE MUNDIAL	C100/II III
17943	R 6	
17946	M NAT R 14	
17949	R 5	
17952	R 3	
17955	M SAT R 6B	
17958	M NCA	
17961	M AFI EUR INO MID	CC AFI EUR INO MID
17964	R 2 11B	
17967	R 5 13A 13B 13E 13F	CC 13A 13B 13E 13F

27/207A

bande/band/banda 21 924-22 000

22 MHz

1	2			3	
21 940	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/I
21 943	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/V
21 946	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/I
21 949	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/III
21 952	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/I
21 955	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/IV
21 958	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/I
21 961	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/V
21 964	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/II
21 967	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/I
21 970	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/III
21 973	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/I
21 976	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/IV
21 979	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/I
21 982	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/V
21 985	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/II
21 988	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/I
21 991	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/IV
21 994	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/V
21 997	W	MONDIALE	WORLDWIDE	MUNDIAL	C100/I

Explication des symboles et abréviations

Colonne 2	M = ZLAMP R = ZLARN V = VOLMET W = mondiale
Colonne 3	CC = voie commune à
C001/...	Dans la zone indiquée après la barre oblique, utilisation diurne
C002/6G	Dans la zone 6G, utilisation seulement à l'est de 95° E
C003/6G	Dans la zone 6G, utilisation seulement à l'ouest de 95° E
C004/6G	Utilisation limitée à l'est de 110° E
C005/2A	Utilisation limitée au nord de 60° N
C006/6A	Utilisation limitée à l'est de 75° E
C007	Pas utilisé
C008	Pas utilisé
C009/6G	Dans la zone 6G, utilisation seulement à l'est de 110° E et au sud de 25° N
C010/6G	Dans la zone 6G, utilisation seulement à l'est de 118° E et au nord de 40° N
C011/6E	Dans la zone 6E, utilisation limitée au sud de 20° N
C100/...	La zone d'allotissement pour utilisation mondiale est indiquée à la suite du symbole. En ce qui concerne la procédure pour l'assignation des fréquences, voir le numéro 27/194A

Explanation of symbols and abbreviations

Column 2	M = MWARA R = RDARA V = VOLMET W = worldwide
Column 3	CC = common channel to
C001/...	Restricted to daytime only, in the area indicated after the slant stroke
C002/6G	In area 6G, operation is restricted to east of 95° E
C003/6G	In area 6G, operation is restricted to west of 95° E
C004/6G	Use limited to east of 110° E
C005/2A	Use limited to north of 60° N
C006/6A	Use limited to east of 75° E
C007	Not used
C008	Not used
C009/6G	In area 6G, use limited to east of 110° E and south of 25° N
C010/6G	In area 6G, use limited to east of 118° E and north of 40° N
C011/6E	In area 6E, use is limited to south of 20° N
C100/...	Worldwide Allotment Area is indicated after the symbol. For assignment procedure see No. 27/194A

Explicación de los símbolos y abreviaturas

Columna 2	M = ZRMP R = ZRRN V = VOLMET W = mundial
Columna 3	CC = canal común a
C001/...	En la zona indicada después del trazo oblicuo, utilización diurna
C002/6G	En la zona 6G, el funcionamiento está limitado al este de 95° E
C003/6G	En la zona 6G, el funcionamiento está limitado al oeste de 95° E
C004/6G	Uso limitado al este de 110° E
C005/2A	Uso limitado al norte de 60° N
C006/6A	Uso limitado al este de 75° E
C007	No ha sido utilizado
C008	No ha sido utilizado
C009/6G	En la zona 6G, el funcionamiento está limitado al este de 110° E y al sur de 25° N
C010/6G	En la zona 6G, el funcionamiento está limitado al este de 118° E y al norte de 40° N
C011/6E	En la zona 6E, uso limitado al sur de 20° N
C100/...	Se indica la zona de adjudicación para utilización mundial después del símbolo. En lo que se refiere al procedimiento para la asignación de las frecuencias, véase el número 27/194A

ARTICLE 3

Frequencies for Common Use

- 27/208** 1. The carrier (reference) frequencies 3 023 kHz and 5 680 kHz are intended for common use on a world-wide basis.
- 27/209** 2. The use of these frequencies in any part of the world is authorized:
- 2.1 aboard aircraft for:
- a) communications with approach and aerodrome control;
 - b) communication with an aeronautical station when other frequencies of the station are either unavailable or unknown;
- 2.2 at aeronautical stations for aerodrome and approach control under the following conditions:
- a) with mean power limited to a value of not more than 20 watts in the antenna circuit;
 - b) special attention must be given in each case to the type of antenna used in order to avoid harmful interference;
 - c) the power of aeronautical stations which use these frequencies in accordance with the above conditions may be increased to the extent necessary to meet certain operational requirements subject to coordination between the administrations directly concerned and those whose services may be adversely affected.
- 27/210** 3. Notwithstanding these provisions, the frequency 5 680 kHz may also be used at aeronautical stations for communication with aircraft stations when other frequencies of the aeronautical stations are either unavailable or unknown. However, this use shall be restricted to such areas and conditions that harmful interference cannot be caused to other authorized operations of stations in the aeronautical mobile service.
- 27/211** 4. Additional particulars regarding the use of these channels for the above purposes may be recommended by the meetings of ICAO.
- 27/212** 5. Frequencies 3 023 kHz and 5 680 kHz may also be used by stations of other mobile services participating in coordinated air-surface search and rescue operations, including communications between these stations and participating land stations. Aeronautical stations are authorized to use these frequencies to establish communications with such stations.
- 27/213** 6. These channels may be used for A1 or A3 emissions, in accordance with special arrangements. Such channels shall not be subdivided.
- 27/214** 7. All stations participating directly in coordinated search and rescue operations and using frequencies 3 023 kHz and 5 680 kHz shall transmit solely on the upper sideband except in the cases provided for in No. 27/50.
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