# Appendix 27 (Rev. WRC-12)* (Extract) 

## Frequency Allotment Plan for the aeronautical mobile (R) service in the exclusive bands between 2850 kHz and 22000 kHz

*Note: This extract includes the Plan as contained in the 2016 edition of the Radio Regulations.

## APPENDIX 27 (REV.WRC-12)*

## Frequency allotment Plan for the aeronautical mobile ( $\mathbf{R}$ ) service and related information

(See Article 43)

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## PART I－General provisions

## Section I－Definitions

27／1 1 Frequency allotment Plan：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 | Arabic | Chinese | Russian |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Services | Attribution （attribuer） | Allocation （to allocate） | Atribución （atribuir） | (يوزغي) توزي | 划分 <br> （划分） | Распределение （распределить） |
| Areas or countries | Allotissement （allotir） | Allotment （to allot） | Adjudicación （adjudicar） | (يعين) | 分配 <br> （分配） | Выделение （выделить） |
| Stations | Assignation （assigner） | Assignment （to assign） | Asignación （asignar） | (يخصصن) | 指配 <br> （指配） | Присвоение <br> （присвоить） |

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 Route 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 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．

27/9 9 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 ${ }^{1}$.

27/10 $10 \quad$ 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. 27/213 to 27/231) 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

27/11 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. 27/56 to $27 / 59$ in the frequency bands between 2850 kHz and 22000 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 .

27/12 1.2 For radiotelephone emissions the audio frequencies will be limited to between 300 Hz and 2700 Hz and the occupied bandwidth of other authorized emissions will not exceed the upper limit of J3E emissions. In specifying these limits, however, no restriction in their extension is implied in so far as emissions other than J3E are concerned, provided that the limits of unwanted emissions are met (see Nos. 27/73 and 27/74).

27/13 NOTE - For aircraft and aeronautical station transmitter types first installed before 1 February 1983, the audio frequencies will be limited to 3000 Hz .

27/14 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.

27/15 1.4 The use of channels derived from the frequencies indicated in No. 27/18 for the various classes of emissions other than J3E and H2B 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.

[^1]27/16 1.5 To preclude the possibility of interference, adjacent channels in the list of frequencies in No. 27/18 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.

27/17 1.6 The arrangements contemplated in Nos. 27/15 and 27/16 should be made under the Articles of the Constitution and Convention of the International Telecommunication Union and the Radio Regulations entitled "Special agreements"*. (wrc-03)

## 2 Frequencies allotted

27/18
The list of carrier (reference) frequencies allotted in the bands allocated exclusively to the aeronautical mobile $(\mathrm{R})$ service, on the basis of the frequency separation provided for under No. 27/11, will be found in the following Table ${ }^{2}$.

[^2]


| $6525-6685 \mathrm{kHz}$ |  |
| :---: | :---: |
| 6526 | 6607 |
| 6529 | 6610 |
| 6532 | 6613 |
| 6535 | 6616 |
| 6538 | 6619 |
| 6541 | 6622 |
| 6544 | 6625 |
| 6547 | 6628 |
| 6550 | 6631 |
| 6553 | 6634 |
| 6556 | 6637 |
| 6559 | 6640 |
| 6562 | 6643 |
| 6565 | 6646 |
| 6568 | 6649 |
| 6571 | 6652 |
| 6574 | 6655 |
| 6577 | 6658 |
| 6580 | 6661 |
| 6583 | 6664 |
| 6586 | 6667 |
| 6589 | 6670 |
| 6592 | 6673 |
| 6595 | 6676 |
| 6598 | 6679 |
| 6601 | 6682 |
| 6604 |  |
| $8815-8965 \mathrm{kHz}$ |  |
| 8816 8891 |  |
| 8819 | 8894 |
| 8822 | 8897 |
| 8825 | 8900 |
| 8828 | 8903 |
| 8831 | 8906 |
| 8834 | 8909 |
| 8837 | 8912 |
| 8840 | 8915 |
| 8843 | 8918 |
| 8846 | 8921 |
| 8849 | 8924 |
| 8852 | 8927 |
| 8855 | 8930 |
| 8858 | 8933 |
| 8861 | 8936 |
| 8864 | 8939 |
| 8867 | 8942 |
| 8870 | 8945 |
| 8873 | 8948 |
| 8876 | 8951 |
| 8879 | 8954 |
| 8882 | 8957 |
| 8885 | 8960 |
| 8888 |  |


| $10005-10100 \mathrm{kHz}$ |  |
| :---: | :---: |
| $\begin{array}{ll} 10 & 006 \\ 10 & 009 \\ 10 & 012 \\ 10 & 015 \\ 10 & 018 \\ 10 & 021 \\ 10 & 024 \\ 10 & 027 \\ 10 & 030 \\ 10 & 033 \\ 10 & 036 \\ 10 & 039 \\ 10 & 042 \\ 10 & 045 \\ 10 & 048 \\ 10 & 051 \end{array}$ | 10 054  <br> 10 057  <br> 10 060  <br> 10 063  <br> 10 066  <br> 10 069  <br> 10 072 31 <br> 10 075 chan <br> 10 078 nels <br> 10 081  <br> 10 084  <br> 10 087  <br> 10 090  <br> 10 093  <br> 10 096  |
| $11275-11400 \mathrm{kHz}$ |  |
| $\begin{array}{ll} 11 & 276 \\ 11 & 279 \\ 11 & 282 \\ 11 & 285 \\ 11 & 288 \\ 11 & 291 \\ 11 & 294 \\ 11 & 297 \\ 11 & 300 \\ 11 & 303 \\ 11 & 306 \\ 11 & 309 \\ 11 & 312 \\ 11 & 315 \\ 11 & 318 \\ 11 & 321 \\ 11 & 324 \\ 11 & 327 \\ 11 & 330 \\ 11 & 333 \\ 11 & 336 \end{array}$ | 11339  <br> 11342  <br> 11345  <br> 11348  <br> 11351  <br> 11354  <br> 11354  <br> 11357  <br> 11360  <br> 11363  <br> 11366 41 <br> 11369 chan- <br> 11372 nels <br> 11375  <br> 11378  <br> 11381  <br> 11384  <br> 11387  <br> 11390  <br> 11393  <br> 11396  |



27/19 3 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.

## 3 Adaptation of allotment procedure

27/20
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.
27/21 5 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.

27/22 6 The coordination described in No. 27/19 shall be effected where appropriate and desirable for the efficient utilization of the frequencies in question, and especially when the procedures of No. 27/21 are unsatisfactory.

## B - Interference range contours

## 27/23 1 General provisions

## 27/24 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.

## 27/25 <br> 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. 27/46 to 27/55 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.

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

FIGURE 1

## Service range, interference range, 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
AP27-01
27/28 1.5 The transparencies associated with this Appendix show, for the frequencies stated, the interference range defined in No. 27/25 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.
27/29
(SUP - WRC-03)
27/30 1.7 Two types of transparencies are provided for use respectively with the Mercator projection world maps and the Lambert azimuthal equal area of projection maps for the polar areas. The Mercator projection transparencies encompass the area between latitude $60^{\circ}$ North and $60^{\circ}$ South. The transparencies associated with the Polar area projections encompass the areas north of latitude $30^{\circ}$ North and south of latitude $30^{\circ}$ South. The Mercator projection overlaps the Polar projection maps between latitudes $30^{\circ}$ and $60^{\circ}$ North and $30^{\circ}$ and $60^{\circ}$ South. This overlap is intended to provide continuity between transparencies, of the two projections.

## 2 Type of maps used

The transparencies mentioned in Nos. 27/28 and 27/30, 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

27/32 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 coordinates given in the Tables shown below.

27/33 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 $00^{\circ}$ latitude for the $00^{\circ}$ contour, $20^{\circ} \mathrm{N}$ for the $20^{\circ}$ contour, $40^{\circ} \mathrm{N}$ for $40^{\circ}$ contour, etc.
27/34 3.3 The coordinates shown in the Tables under Nos. 27/46 to 27/55 are given with reference to the $180^{\circ}$ meridian taken as the axis of symmetry for the construction of the contours.

## 4 Sharing conditions between areas

### 4.1 Frequency bands between 3 and 11.3 MHz

27/35 4.1.1 The transparencies are constructed on the basis of the following sharing conditions:

| Areas | Bands between <br> (MHz) | Sharing conditions |
| :--- | :---: | :--- |
| MWARA or VOLMET area <br> to MWARA or <br> VOLMET area | 3 and 6.6 <br> 9 and 11.3 | Night propagation <br> Day propagation <br> NOTE -6.6 MHz and 5.6 MHz sharing <br> conditions are considered to be the same. |
| MWARA or VOLMET area <br> to RDARA | 3 and 5.6 <br> 6.6 and 11.3 | Night propagation <br> Day propagation |
| RDARA to RDARA | 3 and 4.7 <br> 5.6 and 11.3 | Night propagation <br> Day propagation |

27/36 4.1.2 The additional "Day" contours included for $3 \mathrm{MHz}, 3.5 \mathrm{MHz}$ and 4.7 MHz are for determining daylight sharing possibilities.

### 4.2 Frequency bands between 13 and 22 MHz

27/37 4.2.1 The revised frequency allotment Plan for the $13 \mathrm{MHz}, 18 \mathrm{MHz}$ and 22 MHz bands is based on daytime protection only. This results in the following sharing possibilities:
$27 / 38 \quad 4.2 .2$ for the 13 MHz band, the repetition factor is at least 3 whilst for the 18 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 and 22 MHz ), taking into account operational and local circumstances;

27/39 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 $\mathbf{3}$ to $11.3 \mathbf{M H z}$

27/40 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.

27/41 5.2 The equal area projections (Lambert) are applicable in the polar areas north of $60^{\circ} \mathrm{N}$ and south of $60^{\circ} \mathrm{S}$; and the Mercator projections are applicable between $60^{\circ} \mathrm{N}$ and $60^{\circ} \mathrm{S}$.

27/42 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.

27/43 5.4 A transmitter located at any point outside the contour will result, as defined in No. 27/25, in a protection ratio of better than 15 dB .
27/44 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 .
27/45 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.

## 6 Data for tracing interference contours

27/46 $\quad 3.0$ and 3.5 MHz day
Data for plotting 700 km interference contours

| Latitude | $00^{\circ}$ |  | $10^{\circ}$ |  | $20^{\circ}$ |  | $30^{\circ}$ |  | $40^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 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 | 25.1 | 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 | $50^{\circ}$ |  | $60^{\circ}$ |  | $70^{\circ}$ |  | $80^{\circ}$ |  | $90^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 180.0 | 56.3 | 180.0 | 66.3 | 180.0 | 76.3 | 180.0 | 86.3 |  | 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 |
| Coordinates | 171.8 | 53.8 | 169.1 | 63.6 | 162.9 | 73.4 | 140.8 | 82.4 | All | 83.7 |
| for | 171.0 | 52.8 | 168.1 | 62.7 | 161.8 | 72.3 | 141.3 | 81.3 | longitudes | 83.7 |
| plotting | 170.4 | 51.8 | 167.5 | 61.6 | 161.3 | 71.2 | 142.8 | 80.2 |  | 83.7 |
| contours | 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 | 739 |  | 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 |

Data for plotting 3500 km interference contours

| Latitude | $00^{\circ}$ |  | $10^{\circ}$ |  | $20^{\circ}$ |  | $30^{\circ}$ |  | $40^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 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 | $50^{\circ}$ |  | $60^{\circ}$ |  | $70^{\circ}$ |  | $80^{\circ}$ |  | $90^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 180.0 | 81.5 | 0 | 88.5 | 0 | 78.5 | 0 | 68.5 |  | 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 | All | 58.5 |
|  | 127.6 | 55.2 | 113.9 | 60.3 | 95.8 | 62.9 | 76.4 | 62.3 | longitudes | 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 |

Data for plotting 4000 km interference contours

| Latitude | $00^{\circ}$ |  | $10^{\circ}$ |  | $20^{\circ}$ |  | $30^{\circ}$ |  | $40^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 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 | 70.6 |
|  | 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 | $50^{\circ}$ |  | $60^{\circ}$ |  | $70^{\circ}$ |  | $80^{\circ}$ |  | $90^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 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 | All | 54.0 |
|  | 120.1 | 54.0 | 106.4 | 57.9 | 90.1 | 59.4 | 73.7 | 58.0 | longitudes | 54.0 |
|  | 123.5 | 48.5 | 112.6 | 53.2 | 99.0 | 56.0 | 84.1 | 56.3 |  | 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 |

Data for plotting 1200 km interference contours

| Latitude | $00^{\circ}$ |  | $10^{\circ}$ |  | $20^{\circ}$ |  | $30^{\circ}$ |  | $40^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 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 | $50^{\circ}$ |  | $60^{\circ}$ |  | $70^{\circ}$ |  | $80^{\circ}$ |  | $90^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 180.0 | 60.8 | 180.0 | 70.8 | 180.0 | 80.8 | 0 | 89.2 |  | 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 | All | 79.2 |
|  | 163.8 | 54.4 | 158.4 | 63.8 | 146.8 | 72.8 | 115.8 | 79.6 | longitudes | 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 |

Data for plotting 5500 km interference contours

| Latitude | $00^{\circ}$ |  | $10^{\circ}$ |  | $20^{\circ}$ |  | $30^{\circ}$ |  | $40^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 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 | $50^{\circ}$ |  | $60^{\circ}$ |  | $70^{\circ}$ |  | $80^{\circ}$ |  | $90^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 0 | 80.5 | 0 | 70.5 | 0 | 60.5 | 0 | 50.5 |  | 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 | All | 40.5 |
|  | 100.8 | 47.9 | 89.6 | 48.8 | 78.4 | 47.8 | 68.3 | 44.9 | longitudes | 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 |

Data for plotting 1500 km interference contours

| Latitude | $00^{\circ}$ |  | $10^{\circ}$ |  | $20^{\circ}$ |  | $30^{\circ}$ |  | $40^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 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 | $50^{\circ}$ |  | $60^{\circ}$ |  | $70^{\circ}$ |  | $80^{\circ}$ |  | $90^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 180.0 | 63.5 | 180.0 | 73.5 | 180.0 | 83.5 | 0 | 86.5 |  | 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 | All | 76.5 |
|  | 159.3 | 55.1 | 152.3 | 64.2 | 137.8 | 72.5 | 104.9 | 77.9 | longitudes | 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 |

Data for plotting 6500 km interference contours

| Latitude | $00^{\circ}$ |  | $10^{\circ}$ |  | $20^{\circ}$ |  | $30^{\circ}$ |  | $40^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 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 | $50^{\circ}$ |  | $60^{\circ}$ |  | $70^{\circ}$ |  | $80^{\circ}$ |  | $90^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 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 | All | 31.5 |
|  | 90.7 | 42.4 | 81.7 | 41.7 | 73.8 | 39.6 | 66.0 | 36.1 | longitudes | 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 |

Data for plotting 1900 km interference contours

| Latitude | $00^{\circ}$ |  | $10^{\circ}$ |  | $20^{\circ}$ |  | $30^{\circ}$ |  | $40^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 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 | $50^{\circ}$ |  | $60^{\circ}$ |  | $70^{\circ}$ |  | $80^{\circ}$ |  | $90^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 180.0 | 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 | All | 72.9 |
|  | 153.1 | 55.8 | 144.0 | 64.3 | 126.5 | 71.5 | 94.8 | 75.2 | longitudes | 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 |

Data for plotting 3800 km interference contours

| Latitude | $00^{\circ}$ |  | $10^{\circ}$ |  | $20^{\circ}$ |  | $30^{\circ}$ |  | $40^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 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 | $50^{\circ}$ |  | $60^{\circ}$ |  | $70^{\circ}$ |  | $80^{\circ}$ |  | $90^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 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 | All | 55.8 |
|  | 123.0 | 54.5 | 109.3 | 59.0 | 92.2 | 60.8 | 74.7 | 59.7 | longitudes | 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 |

27/55 11.3 MHz day
Data for plotting 6000 km interference contours

| Latitude | $00^{\circ}$ |  | $10^{\circ}$ |  | $20^{\circ}$ |  | $30^{\circ}$ |  | $40^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 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 | $50^{\circ}$ |  | $60^{\circ}$ |  | $70^{\circ}$ |  | $80^{\circ}$ |  | $90^{\circ}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Coordinates for plotting contours | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. | Long. | Lat. |
|  | 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 | All | 36.0 |
|  | 95.5 | 45.3 | 85.4 | 45.3 | 75.7 | 43.7 | 67.1 | 40.5 | longitudes | 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

27/56
In the aeronautical mobile (R) service the use of emissions 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.

27/57 1.1 Telephony - amplitude modulation:

- double sideband A3E*
- single sideband, full carrier H3E*
- single sideband, suppressed carrier J3E


### 1.2 Telegraphy (including automatic data transmission)

27/58 1.2.1 Amplitude modulation:

- telegraphy without the use of a modulating audio frequency (by on-off keying) A1A, A1B**
- 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 H2B
- multichannel voice frequency telegraphy, single sideband, suppressed carrier J7B
- other transmissions such as automatic data transmission, single sideband, suppressed carrier JXX


## 27/59 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 F1B**

[^3]
## 2 Power

27/60 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 |
| :--- | :--- | :---: |
| H2B, J3E, J7B, JXX | Aeronautical stations | 6 kW |
| A3E*, H3E* | Aircraft stations | 400 W |
| (100\% modulation) |  | 1.5 kW |
| Other emissions such as | Aeronautical stations | 100 W |
| A1A, A1B, F1B | Aircraft stations |  |

* A3E and H3E to be used only on 3023 kHz and 5680 kHz .

27/61 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.

27/62 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. 27/60, except in the case of 3023 kHz and 5680 kHz which are subject to the special provisions of Nos. 27/232 to 27/238. In each such case, the administration having jurisdiction over the aeronautical station shall note No. $\mathbf{1 5 . 2}$ and ensure:
$\mathbf{2 7} / 63$ a) that when there is any possibility of harmful interference coordination is effected with the administrations concerned;
$\mathbf{2 7} / 64$ b) that harmful interference is not caused to stations using frequencies in accordance with the applicable provisions of the allotment Plan;
$\mathbf{2 7 / 6 5}$ 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;
27/66 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;
27/67 e) that, in accordance with the Radio Regulations, all details of the assignment(s), including the transmitting antenna characteristics shall be notified to the Radiocommunication Bureau.
27/68 2.4 It is recognized that the power employed by aircraft transmitters may, in practice, exceed the limits specified in No. 27/60. However, the use of such increased power (which normally should not exceed 600 W PX ) 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

27/69
1.1 Definitions carrier modes:

| Carrier mode | Level $\boldsymbol{N}$ (dB) of the carrier with <br> respect to peak envelope power |
| :--- | :--- |
| Full carrier (for example H2B) | $0 \geq N \geq-6$ |
| Suppressed carrier (for example J3E) | Aircraft stations $\quad N<-26$ <br> Aeronautical stations $N<-40$ |

## 2 Tolerance for levels of emission outside the necessary bandwidth

27/70
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 (PY) of the transmitter in accordance with the Table in No. 27/71.

27/71 2.2 For aircraft station transmitter types first installed before 1 February 1983:

| Frequency separation $\Delta$ <br> from the assigned frequency <br> (kHz) | Minimum attenuation <br> below mean power (PY) <br> (dB) |
| :---: | :--- |
| $2 \leq \Delta<6$ | 25 |
| $6 \leq \Delta<10$ | Aircraft stations: <br> Aeronautical stations: |
| $10 \leq \Delta$ | 40 |

27/72 NOTE - All transmitters first placed in operation after 1 February 1983 shall comply with the specifications contained in No. 27/74.

27/73 2.3 In a single-sideband transmission, the peak envelope power (PX) 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 (PX) of the transmitter in accordance with the Table in No. 27/74.

27/74 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 $\Delta$ <br> from the assigned frequency <br> $(\mathbf{k H z})$ | Minimum attenuation <br> below peak envelope power (PX) <br> (dB) |
| :---: | :--- |
| $1.5 \leq \Delta<4.5$ | 30 |
| $4.5 \leq \Delta<7.5$ | Aircraft stations: <br> Aeronautical stations: |
| $7.5 \leq \Delta$ | 43 |

* For transmitter power up to and including $50 \mathrm{~W}: 43+10 \log _{10}(\mathrm{PX})(\mathrm{W})$. For transmitter powers more than 50 W , the attenuation shall be at least 60 dB .


## E - Other technical provisions

## 1 Assigned frequencies

27/75 1.1 For single-sideband emissions, except the class of emission H 2 B , the assigned frequency shall be at a value 1400 Hz above the carrier (reference) frequency.
27/76 1.2 For aeronautical stations equipped with selective calling systems, the class of emission H2B shall be indicated in the Supplementary Information column of the form of notice (see Appendix 4).

27/77 1.3 For classes of emission A1A, A1B and F1B the assigned frequency shall be chosen in accordance with the provisions of the footnote to Nos. 27/58 and 27/59.

27/78 1.4 The assigned frequency of a station employing double sideband emissions (A3E) 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 2850 and 22000 kHz

## Section I - Description of the boundaries of the areas and sub-areas

27/79 1 The boundary descriptions which follow delineate the areas to which frequencies are allotted under the frequency allotment Plan.
27/80 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.

27/81 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.

27/82 4 In the description of the Major World Air Route Areas (MWARAs) all lines between points not otherwise specified are defined as great circles.
27/83
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.

27/84
In the description of the VOLMET areas all lines between points are defined as great circles.

## ARTICLE 1 <br> Description of the boundaries of the major world air route areas (MWARAs)

## 27/85 Major World Air Route Area - CARIBBEAN (MWARA-CAR)

From the point $20^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}$ through the points $35^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}, 35^{\circ} \mathrm{N} 85^{\circ} \mathrm{W}, 43^{\circ} \mathrm{N} 74^{\circ} \mathrm{W}$, $40^{\circ} \mathrm{N} 60^{\circ} \mathrm{W}, 00^{\circ} 48^{\circ} \mathrm{W}, 00^{\circ} 80^{\circ} \mathrm{W}$, to the point $20^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}$.

27/86 Major World Air Route Area - CENTRAL EAST PACIFIC (MWARA-CEP)
From the point $50^{\circ} \mathrm{N} 122^{\circ} \mathrm{W}$ through the points $38^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}, 15^{\circ} \mathrm{N} 110^{\circ} \mathrm{W}, 20^{\circ} \mathrm{S} 145^{\circ} \mathrm{W}$, $20^{\circ} \mathrm{S} 152^{\circ} \mathrm{W}, 30^{\circ} \mathrm{N} 165^{\circ} \mathrm{W}$, to the point $50^{\circ} \mathrm{N} 122^{\circ} \mathrm{W}$.

27/87 Major World Air Route Area - CENTRAL WEST PACIFIC (MWARA-CWP)
From the point $40^{\circ} \mathrm{N} 117^{\circ} \mathrm{E}$ through the points $25^{\circ} \mathrm{N} 155^{\circ} \mathrm{W}, 17^{\circ} \mathrm{N} 155^{\circ} \mathrm{W}, 00^{\circ} 165^{\circ} \mathrm{W}$, $00^{\circ} 170^{\circ} \mathrm{E}, 12^{\circ} \mathrm{S} 165^{\circ} \mathrm{E}, 12^{\circ} \mathrm{S} 136^{\circ} \mathrm{E}, 09^{\circ} \mathrm{N} 115^{\circ} \mathrm{E}, 23^{\circ} \mathrm{N} 114^{\circ} \mathrm{E}$, to the point $40^{\circ} \mathrm{N} 117^{\circ} \mathrm{E}$.

## 27/88 Major World Air Route Area - EUROPE (MWARA-EUR)

From the point $33^{\circ} \mathrm{N} 12^{\circ} \mathrm{W}$ through the points $54^{\circ} \mathrm{N} 12^{\circ} \mathrm{W}, 70^{\circ} \mathrm{N} 00^{\circ}, 74^{\circ} \mathrm{N} 40^{\circ} \mathrm{E}, 74^{\circ} \mathrm{N}$ $52^{\circ} \mathrm{E}, 60^{\circ} \mathrm{N} 52^{\circ} \mathrm{E}, 40^{\circ} \mathrm{N} 36^{\circ} \mathrm{E}, 29^{\circ} \mathrm{N} 35^{\circ} 30^{\prime} \mathrm{E}, 32^{\circ} \mathrm{N} 13^{\circ} \mathrm{E}$, to the point $33^{\circ} \mathrm{N} 12^{\circ} \mathrm{W}$.

27/89 Major World Air Route Area - INDIAN OCEAN (MWARA-INO)
From the South Pole through the points $30^{\circ} \mathrm{S} 26^{\circ} \mathrm{E}, 20^{\circ} \mathrm{N} 35^{\circ} \mathrm{E}, 30^{\circ} \mathrm{N} 60^{\circ} \mathrm{E}, 30^{\circ} \mathrm{N} 90^{\circ} \mathrm{E}, 30^{\circ} \mathrm{S}$ $120^{\circ} \mathrm{E}, 40^{\circ} \mathrm{S} 160^{\circ} \mathrm{E}$ to the South Pole.

27/90 Major World Air Route Area - MIDDLE EAST (MWARA-MID)
From the point $51^{\circ} \mathrm{N} 30^{\circ} \mathrm{E}$ through the points $57^{\circ} \mathrm{N} 37^{\circ} \mathrm{E}, 50^{\circ} \mathrm{N} 80^{\circ} \mathrm{E}, 44^{\circ} \mathrm{N} 94^{\circ} \mathrm{E}, 08^{\circ} \mathrm{N}$ $76^{\circ} \mathrm{E}, 11^{\circ} 45^{\prime} \mathrm{N} 42^{\circ} \mathrm{E}, 16^{\circ} \mathrm{N} 42^{\circ} \mathrm{E}, 30^{\circ} \mathrm{N} 30^{\circ} \mathrm{E}$, to the point $51^{\circ} \mathrm{N} 30^{\circ} \mathrm{E}$.

## 27/91 Major World Air Route Area - NORTH ATLANTIC (MWARA-NAT)

From the North Pole through the points $60^{\circ} \mathrm{N} 135^{\circ} \mathrm{W}, 49^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}, 49^{\circ} \mathrm{N} 74^{\circ} \mathrm{W}, 39^{\circ} \mathrm{N} 78^{\circ} \mathrm{W}$, $18^{\circ} \mathrm{N} 66^{\circ} \mathrm{W}, 05^{\circ} \mathrm{N} 55^{\circ} \mathrm{W}, 16^{\circ} \mathrm{N} 26^{\circ} \mathrm{W}, 32^{\circ} \mathrm{N} 08^{\circ} \mathrm{W}, 44^{\circ} \mathrm{N} 02^{\circ} \mathrm{E}, 60^{\circ} \mathrm{N} 20^{\circ} \mathrm{E}$, to the North Pole.

27/92 Major World Air Route Area - NORTH CENTRAL ASIA (MWARA-NCA)
From the North Pole through the points $75^{\circ} \mathrm{N} 10^{\circ} \mathrm{E}, 60^{\circ} \mathrm{N} 25^{\circ} \mathrm{E}, 30^{\circ} \mathrm{N} 25^{\circ} \mathrm{E}, 30^{\circ} \mathrm{N} 73^{\circ} \mathrm{E}$, $37^{\circ} \mathrm{N} 73^{\circ} \mathrm{E}, 49^{\circ} \mathrm{N} 85^{\circ} \mathrm{E}, 42^{\circ} \mathrm{N} 97^{\circ} \mathrm{E}, 42^{\circ} \mathrm{N} 110^{\circ} \mathrm{E}, 45^{\circ} \mathrm{N} 113^{\circ} \mathrm{E}, 46^{\circ} 30^{\prime} \mathrm{N} 120^{\circ} \mathrm{E}, 49^{\circ} \mathrm{N}$ $116^{\circ} \mathrm{E}, 54^{\circ} \mathrm{N} 123^{\circ} \mathrm{E}, 45^{\circ} \mathrm{N} 133^{\circ} \mathrm{E}, 40^{\circ} \mathrm{N} 124^{\circ} \mathrm{E}, 30^{\circ} \mathrm{N} 124^{\circ} \mathrm{E}, 25^{\circ} \mathrm{N} 135^{\circ} \mathrm{E}, 65^{\circ} \mathrm{N} 170^{\circ} \mathrm{W}$, to the North Pole.

27/93 Major World Air Route Area - NORTH PACIFIC (MWARA-NP)
From the North Pole through the points $60^{\circ} \mathrm{N} 135^{\circ} \mathrm{W}, 47^{\circ} \mathrm{N} 118^{\circ} \mathrm{W}, 30^{\circ} \mathrm{N} 165^{\circ} \mathrm{W}, 30^{\circ} \mathrm{N}$ $115^{\circ} \mathrm{E}, 41^{\circ} \mathrm{N} 116^{\circ} \mathrm{E}, 55^{\circ} \mathrm{N} 135^{\circ} \mathrm{E}$ to the North Pole.

27/94 Major World Air Route Area - AFRICA (MWARA-AFI)
From the point $40^{\circ} \mathrm{N} 35^{\circ} \mathrm{W}$, through the points $37^{\circ} \mathrm{N} 03^{\circ} \mathrm{W}, 37^{\circ} \mathrm{N} 44^{\circ} \mathrm{E}$, the border between Iraq and the Islamic Republic of Iran, the points $29^{\circ} \mathrm{N} 48^{\circ} \mathrm{E}, 26^{\circ} \mathrm{N} 56^{\circ} \mathrm{E}, 20^{\circ} \mathrm{N} 62^{\circ} \mathrm{E}, 22^{\circ} \mathrm{S}$ $60^{\circ} \mathrm{E}, 35^{\circ} \mathrm{S} 30^{\circ} \mathrm{E}, 35^{\circ} \mathrm{S} 16^{\circ} \mathrm{E}, 05^{\circ} \mathrm{N} 03^{\circ} \mathrm{W}, 05^{\circ} \mathrm{N} 35^{\circ} \mathrm{W}$, to the point $40^{\circ} \mathrm{N} 35^{\circ} \mathrm{W}$.

27/95 Major World Air Route Area - SOUTH ATLANTIC (MWARA-SAT)
From the South Pole through the points $30^{\circ} \mathrm{S} 75^{\circ} \mathrm{W}, 19^{\circ} \mathrm{S} 53^{\circ} \mathrm{W}, 00^{\circ} 60^{\circ} \mathrm{W}, 20^{\circ} \mathrm{N} 60^{\circ} \mathrm{W}$, $25^{\circ} \mathrm{N} 25^{\circ} \mathrm{W}, 41^{\circ} \mathrm{N} 15^{\circ} \mathrm{W}, 41^{\circ} \mathrm{N} 03^{\circ} \mathrm{W}, 15^{\circ} \mathrm{N} 03^{\circ} \mathrm{W}, 20^{\circ} \mathrm{S} 32^{\circ} \mathrm{E}$ to the South Pole.

27/96 Major World Air Route Area - SOUTH AMERICA (MWARA-SAM)
From the South Pole through the points $15^{\circ} \mathrm{N} 125^{\circ} \mathrm{W}, 15^{\circ} \mathrm{N} 60^{\circ} \mathrm{W}, 10^{\circ} \mathrm{N} 60^{\circ} \mathrm{W}, 05^{\circ} \mathrm{S} 30^{\circ} \mathrm{W}$, $36^{\circ} \mathrm{S} 52^{\circ} \mathrm{W}$, to the South Pole.

From the point $26^{\circ} \mathrm{N} 130^{\circ} \mathrm{E}$, through the points $00^{\circ} 130^{\circ} \mathrm{E}, 00^{\circ} 135^{\circ} \mathrm{E}, 12^{\circ} \mathrm{S} 145^{\circ} \mathrm{E}, 12^{\circ} \mathrm{S}$ $160^{\circ} \mathrm{E}, 25^{\circ} \mathrm{S} 155^{\circ} \mathrm{E}, 40^{\circ} \mathrm{S} 150^{\circ} \mathrm{E}, 35^{\circ} \mathrm{S} 115^{\circ} \mathrm{E}, 18^{\circ} \mathrm{N} 62^{\circ} \mathrm{E}, 26^{\circ} \mathrm{N} 65^{\circ} \mathrm{E}$, to the point $26^{\circ} \mathrm{N}$ $130^{\circ} \mathrm{E}$.

27/98 Major World Air Route Area - SOUTH PACIFIC (MWARA-SP)
From the South Pole through the points $38^{\circ} \mathrm{S} 145^{\circ} \mathrm{E}, 00^{\circ} 167^{\circ} \mathrm{E}, 00^{\circ} 175^{\circ} \mathrm{W}, 22^{\circ} \mathrm{N} 158^{\circ} \mathrm{W}$, $22^{\circ} \mathrm{N} 156^{\circ} \mathrm{W}, 00^{\circ} 120^{\circ} \mathrm{W}$ to the South Pole.

27/99 Major World Air Route Area - EAST ASIA (MWARA-EA)
From the point $55^{\circ} \mathrm{N} 124^{\circ} \mathrm{E}$ through the points $37^{\circ} \mathrm{N} 145^{\circ} \mathrm{E}, 26^{\circ} \mathrm{N} 130^{\circ} \mathrm{E}, 00^{\circ} 130^{\circ} \mathrm{E}, 00^{\circ} 80^{\circ}$ E, $18^{\circ} \mathrm{N} 62^{\circ} \mathrm{E}, 37^{\circ} \mathrm{N} 67^{\circ} \mathrm{E}, 55^{\circ} \mathrm{N} 80^{\circ} \mathrm{E}$ to the point $55^{\circ} \mathrm{N} 124^{\circ} \mathrm{E}$.

## ARTICLE 2

## Description of the boundaries of the regional and domestic air route areas (RDARAs)

27/100 Regional and Domestic Air Route Area-1 (RDARA-1)
From the North Pole along the $15^{\circ} \mathrm{W}$ meridian to the point $72^{\circ} \mathrm{N} 15^{\circ} \mathrm{W}$, then through the points $40^{\circ} \mathrm{N} 50^{\circ} \mathrm{W}, 30^{\circ} \mathrm{N} 39^{\circ} \mathrm{W}, 30^{\circ} \mathrm{N} 10^{\circ} \mathrm{W}, 31^{\circ} \mathrm{N} 10^{\circ} \mathrm{W}$, to the point $31^{\circ} \mathrm{N} 10^{\circ} \mathrm{E}$. Then along the Libya-Tunisia border to the Mediterranean, thence along the coast of Libya and Egypt to Alexandria. Thence to Cairo, eastward along the Cairo parallel to intersect the $40^{\circ}$ E meridian, and north along the $40^{\circ} \mathrm{E}$ meridian to the intersection with the border between the Syrian Arabic Republic and Iraq and along this border up to the Turkish border. Then along the border between Turkey and the following countries: Iraq, Islamic Republic of Iran, Armenia and Georgia, up to the Black Sea Coast. Thence along the Black Sea Coast of Turkey to intersect the $30^{\circ}$ E meridian, then along the $30^{\circ} \mathrm{E}$ meridian to the border of Romania and Ukraine. Thence along the borders between Romania and Ukraine, Romania and Moldova, Romania and Ukraine. Thence along the border of Ukraine, and the following countries: Hungary, Slovakia and Poland. Thence along the border of Poland and the following countries: Belarus, Lithuania and the Russian Federation. Thence northeastward along the Baltic Sea coast, to the border between Finland and the Russian Federation, and between Norway and the Russian Federation, to the point $70^{\circ} \mathrm{N} 32^{\circ} \mathrm{E}$, and along the $32^{\circ}$ E meridian to the North Pole.

27/101 Sub-Area $1 A$
From the point $65^{\circ} \mathrm{N} 26^{\circ} \mathrm{W}$, and through the points $40^{\circ} \mathrm{N} 50^{\circ} \mathrm{W}, 40^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}, 60^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}$, $60^{\circ} \mathrm{N} 26^{\circ} \mathrm{W}$, to the point $65^{\circ} \mathrm{N} 26^{\circ} \mathrm{W}$.

From the North Pole along the $15^{\circ} \mathrm{W}$ meridian to the point $72^{\circ} \mathrm{N} 15^{\circ} \mathrm{W}$, then through the points $65^{\circ} \mathrm{N} 26^{\circ} \mathrm{W}, 60^{\circ} \mathrm{N} 26^{\circ} \mathrm{W}, 60^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}$ to the points $50^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}$ and $50^{\circ} \mathrm{N} 10^{\circ} \mathrm{W}$, thence east along the territorial waters between the Channel Islands and the French coastline, reaching the latter at the meridian $03^{\circ} \mathrm{W}$. Thence following the French coastline northeastward and the frontier of France with Belgium, Luxembourg and Germany. Thence along the border between Germany and the following countries: Switzerland, Austria, the Czech Rep. and Poland towards the Baltic Sea. Then west along the coastline of Germany to the border between the latter and Denmark. Along this border to the North Sea. Thence along the $55^{\circ} \mathrm{N}$ parallel to the point $55^{\circ} \mathrm{N} 04^{\circ} \mathrm{E}$, then through the points $56^{\circ} \mathrm{N} 03^{\circ} \mathrm{E}, 59^{\circ} \mathrm{N} 02^{\circ} \mathrm{E}, 62^{\circ} \mathrm{N} 01^{\circ} \mathrm{E}$. Thence along the $01^{\circ} \mathrm{E}$ meridian to the North Pole.

27/103 Sub-Area $1 C$
From the North Pole along the meridian $01^{\circ} \mathrm{E}$ to the point $62^{\circ} \mathrm{N} 01^{\circ}$ E. Thence through the points $59^{\circ} \mathrm{N} 02^{\circ} \mathrm{E}, 56^{\circ} \mathrm{N} 03^{\circ} \mathrm{E}, 55^{\circ} \mathrm{N} 04^{\circ} \mathrm{E}$ and then east along the $55^{\circ} \mathrm{N}$ parallel and the border between Denmark and Germany to the Baltic Sea and along the Baltic Sea coast of Germany to the border between Germany and Poland. Along this border and continuing along the western borders of the Czech Rep. 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 Romania. Thence, along the border between Ukraine and the following countries: Hungary, Slovakia and Poland. Thence along the border of Poland and the following countries: Belarus, Lithuania and the Russian Federation to the Baltic Sea. Thence northeastward along the Baltic Sea coast, along the borders between Finland and the Russian Federation and between Norway and the Russian Federation to the point $70^{\circ} \mathrm{N} 32^{\circ} \mathrm{E}$, then along the $32^{\circ} \mathrm{E}$ meridian to the North Pole.

27/104 Sub-Area $1 D$
From the junction of the borders of Ukraine, Hungary and Romania, 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 $43^{\circ} \mathrm{N} 10^{\circ} \mathrm{E}$ to $41^{\circ} \mathrm{N} 10^{\circ} \mathrm{E}$ to $41^{\circ} \mathrm{N} 07^{\circ} \mathrm{E}$, thence along the $07^{\circ} \mathrm{E}$ meridian to the North African coast. Then along the North African coast including Tunis, Tripoli, Benghazi, to the coastal border between Libya and Egypt. Thence along the coast to Alexandria, then to Cairo, and along the Cairo parallel to the $40^{\circ} \mathrm{E}$ meridian. North along the $40^{\circ}$ E meridian to the intersection with the border between Syrian Arab Republic and Iraq and along this border up to the Turkish border. Then along the border between Turkey and the following countries: Iraq, Islamic Republic of Iran, Armenia and Georgia, up to the Black Sea Coast. Thence along the Black Sea Coast of Turkey to intersect the $30^{\circ}$ E meridian. Along the $30^{\circ} \mathrm{E}$ meridian to the border of Romania and Ukraine, thence along the borders between Romania and Ukraine, Romania and Moldova, Romania and Ukraine to the junction of the borders of Ukraine, Hungary and Romania.

From the point $50^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}$, through the points $40^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}, 40^{\circ} \mathrm{N} 50^{\circ} \mathrm{W}, 30^{\circ} \mathrm{N} 39^{\circ} \mathrm{W}$, $30^{\circ} \mathrm{N} 10^{\circ} \mathrm{W}, 31^{\circ} \mathrm{N} 10^{\circ} \mathrm{W}$, to the point $31^{\circ} \mathrm{N} 10^{\circ} \mathrm{E}$. Then along the border between Libya and Tunisia to the Mediterranean, thence along the Tunisian coast to intersect the $10^{\circ} \mathrm{E}$ meridian. Thence along this meridian to the point $43^{\circ} \mathrm{N} 10^{\circ} \mathrm{E}$; thence to the borders between Italy and France and between Italy and Switzerland, Austria and Switzerland, Austria and Liechtenstein, Austria and Switzerland, Switzerland and Germany, and between France and 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 $50^{\circ} \mathrm{N} 10^{\circ} \mathrm{W}$ and $50^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}$.

27/106 Regional and Domestic Air Route Area - 2 (RDARA-2)
From the North Pole along the $32^{\circ} \mathrm{E}$ meridian to the $70^{\circ} \mathrm{N}$ parallel. Then along the border between Norway and the Russian Federation and Finland and the Russian Federation to the Baltic coast. Thence southwestward along the Baltic coast to the border between the Russian Federation and Poland. Thence along the border between Poland and the following countries: the Russian Federation, Lithuania, Belarus and Ukraine. Thence along the border between Ukraine and the following countries: Poland, Slovakia, Hungary and Romania, to the junction of the borders of Ukraine, Romania and Moldova. Thence along the borders of Romania and Moldova, Romania and Ukraine, to the Black Sea coast at the intersection of the $30^{\circ} \mathrm{E}$ meridian. Then along the $30^{\circ} \mathrm{E}$ meridian to the Black Sea coast of Turkey. Along the Black Sea coast of Turkey to the junction of the borders of Turkey and Georgia. Thence along borders between Turkey and the following countries: Georgia, Armenia and Azerbaijan, to the junction of the borders between the Islamic Republic of Iran and Azerbaijan. Then along the northern border of the Islamic Republic of Iran to Caspian Sea. Then along the Iran Caspian Sea coast to the border of Turkmenistan. Thence eastward along the southern borders of Turkmenistan, Uzbekistan, Tajikistan and Kyrgyzstan, and the eastern border of Kazakhstan, to the junction of the borders of Kazakhstan, the Russian Federation and China. Then along the border between the Russian Federation and China to the intersection of the Mongolia-China-Russian Federation borders at approximately $49^{\circ} \mathrm{N} 88^{\circ} \mathrm{E}$. Then along the $88^{\circ} \mathrm{E}$ meridian to $55^{\circ} \mathrm{N}$. Then along the $55^{\circ} \mathrm{N}$ parallel to $60^{\circ} \mathrm{E}$, and along the $60^{\circ}$ E meridian to the North Pole.

## 27/107 Sub-Area 2A

From the North Pole along the $32^{\circ} \mathrm{E}$ meridian to $70^{\circ} \mathrm{N}$. Then along the border between Norway and the Russian Federation, and Finland and the Russian Federation to the Baltic coast, and southwestward along the Baltic coast to the point $55^{\circ} \mathrm{N} 20^{\circ} \mathrm{E}$, and thence to Moscow. Then to $55^{\circ} \mathrm{N} 60^{\circ} \mathrm{E}$, and along the $60^{\circ} \mathrm{E}$ meridian to the North Pole.

## 27/108 Sub-Area 2B

From the point $55^{\circ} \mathrm{N} 88^{\circ} \mathrm{E}$ and through the point $55^{\circ} \mathrm{N} 60^{\circ} \mathrm{E}$ to the point $47^{\circ} \mathrm{N} 53^{\circ} \mathrm{E}$. Thence along the east coast of the Caspian Sea to the Iranian coast. Then along the Islamic Republic of Iran Caspian Sea coast to the border of Turkmenistan. Thence eastward along the southern borders of Turkmenistan, Uzbekistan, Tajikistan and Kyrgyzstan, and the eastern border of Kazakhstan, to the junction of the borders of Kazakhstan, the Russian Federation and China. Then along the border between the Russian Federation and China to the intersection of the Mongolia-China-Russian Federation borders at approximately $49^{\circ} \mathrm{N} 88^{\circ} \mathrm{E}$; thence along the $88^{\circ} \mathrm{E}$ meridian to $55^{\circ} \mathrm{N} 88^{\circ} \mathrm{E}$.

From the point $55^{\circ} \mathrm{N} 60^{\circ} \mathrm{E}$, to Moscow, to $55^{\circ} \mathrm{N} 20^{\circ} \mathrm{E}$. Thence south along the borders between Poland and the following countries: Russian Federation, Lithuania, Belarus and Ukraine. Thence along the border between Ukraine and the following countries: Poland, Slovakia, Hungary and Romania, to junction of the borders of Ukraine, Romania and Moldova. Thence along the borders of Romania and Moldova, Romania and Ukraine to the Black Sea coast at the meridian $30^{\circ} \mathrm{E}$. Along the meridian $30^{\circ} \mathrm{E}$ to the Black Sea coast of Turkey. Along this coastline to the junction of the border between Turkey and Georgia. Thence along the borders between Turkey and the following countries: Georgia, Armenia and Azerbaijan, to the junction of the borders between the Islamic Republic of Iran and Azerbaijan. Then along the northern borders of the Islamic Republic of Iran 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 $47^{\circ} \mathrm{N} 53^{\circ} \mathrm{E}$ to $55^{\circ} \mathrm{N} 60^{\circ} \mathrm{E}$.

## 27/110 Regional and Domestic Air Route Area - 3 (RDARA-3)

From the North Pole to the point $55^{\circ} \mathrm{N} 60^{\circ} \mathrm{E}$, thence along the $55^{\circ} \mathrm{N}$ parallel to $88^{\circ} \mathrm{E}$. Then along the $88^{\circ} \mathrm{E}$ meridian to the intersection of the Mongolia-China-Russian Federation borders at approximately $49^{\circ} \mathrm{N} 88^{\circ}$ E. Then along the borders between Mongolia and China, and the Russian Federation and China, to the coast. Between the territorial waters of the Russian Federation and Japan to the point $43^{\circ} \mathrm{N} 147^{\circ} \mathrm{E}$ and through the point $50^{\circ} \mathrm{N} 164^{\circ} \mathrm{E}$ to $65^{\circ} \mathrm{N} 170^{\circ} \mathrm{W}$. Then along the $170^{\circ} \mathrm{W}$ meridian to the North Pole.

## 27/111 Sub-Area 3A

From the North Pole along the $60^{\circ} \mathrm{E}$ meridian to $55^{\circ} \mathrm{N}$. Then along the $55^{\circ} \mathrm{N}$ parallel to $88^{\circ} \mathrm{E}$. Then through the point $60^{\circ} \mathrm{N} 88^{\circ} \mathrm{E}$ to $60^{\circ} \mathrm{N} 110^{\circ} \mathrm{E}$, and along the $110^{\circ} \mathrm{E}$ meridian to the North Pole.

## 27/112 Sub-Area 3B

From the North Pole along the $110^{\circ} \mathrm{E}$ meridian to $60^{\circ} \mathrm{N} 110^{\circ} \mathrm{E}$, and through the points $60^{\circ} \mathrm{N} 147^{\circ} \mathrm{E}, \quad 43^{\circ} \mathrm{N} \quad 147^{\circ} \mathrm{E}, \quad 50^{\circ} \mathrm{N} \quad 164^{\circ} \mathrm{E}$, to $65^{\circ} \mathrm{N} \quad 170^{\circ} \mathrm{W}$. Then along the $170^{\circ} \mathrm{W}$ meridian to the North Pole.

## 27/113 Sub-Area 3C

From the point $60^{\circ} \mathrm{N} 88^{\circ}$ E to the intersection of Mongolia-China-the Russian Federation borders at approximately $49^{\circ} \mathrm{N} 88^{\circ} \mathrm{E}$. Along the borders between Mongolia and China, and the Russian Federation and China, to the coast. Between the territorial waters of the Russian Federation and Japan to the point $43^{\circ} \mathrm{N} 147^{\circ} \mathrm{E}$. Then through the point $60^{\circ} \mathrm{N} 147^{\circ} \mathrm{E}$ to the point $60^{\circ} \mathrm{N} 88^{\circ} \mathrm{E}$.

## 27/114 Regional arid Domestic Air Route Area-4 (RDARA-4)

From the point $30^{\circ} \mathrm{N} 39^{\circ} \mathrm{W}$, and through the points $10^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}, 05^{\circ} \mathrm{S} 20^{\circ} \mathrm{W}$, to the point $05^{\circ} \mathrm{S} 12^{\circ} \mathrm{E}$. Thence along the border between the Rep. of the Congo and Angola, then along the northern border of the Dem. Rep. of the Congo, and the borders of the Rep. of the Congo, of the Central African Republic and the Sudan. Thence north along the western border of the Sudan. Along the western border of Egypt, northwards to the Mediterranean and along the Mediterranean and Atlantic coasts of North Africa to the point $30^{\circ} \mathrm{N} 10^{\circ} \mathrm{W}$. West along the $30^{\circ} \mathrm{N}$ parallel to close the area at $30^{\circ} \mathrm{N} 39^{\circ} \mathrm{W}$.

## 27/115 Sub-Area 4A

From the point $30^{\circ} \mathrm{N} 39^{\circ} \mathrm{W}$ to $21^{\circ} \mathrm{N} 31^{\circ} \mathrm{W}$. Thence to Gao and to Zinder. From Zinder, along the northern border of Nigeria, to the junction of the borders of Nigeria, Chad and Cameroon. Then along the border between Chad and Cameroon to a point west of N'Djamena. Then along the parallel to $12^{\circ} \mathrm{N} 22^{\circ} \mathrm{E}$. Thence north along the western border of the Sudan, and along the western border of Egypt to the Mediterranean. Along the North African Mediterranean coast and Atlantic coast to a point $30^{\circ} \mathrm{N} 10^{\circ} \mathrm{W}$. Thence along the $30^{\circ} \mathrm{N}$ parallel to close the sub-area at $30^{\circ} \mathrm{N} 39^{\circ} \mathrm{W}$.

## 27/116 Sub-Area 4B

From the point $21^{\circ} \mathrm{N} 31^{\circ} \mathrm{W}$, through the points $10^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}, 05^{\circ} \mathrm{S} 20^{\circ} \mathrm{W}$ to $05^{\circ} \mathrm{S} 12^{\circ} \mathrm{E}$. Thence along the southern border of the Rep. of the Congo and the Central African Republic to the junction between the Dem. Rep. of the Congo, the Sudan and the Central African Republic. Along the western border of the Sudan to the point $12^{\circ} \mathrm{N} 22^{\circ} \mathrm{E}$. Thence along the N'Djamena parallel to the Nigerian border. Then westward along this border to the point $13^{\circ} 12^{\prime} \mathrm{N} 10^{\circ} 45^{\prime} \mathrm{E}$, through Zinder and Gao, to the point $21^{\circ} \mathrm{N} 31^{\circ} \mathrm{W}$.

## 27/117 Regional and Domestic Air Route Area - 5 (RDARA-5)

From the point $41^{\circ} \mathrm{N} 40^{\circ} \mathrm{E}$ to the point $37^{\circ} \mathrm{N} 40^{\circ} \mathrm{E}$. Then along the border between Turkey and Syrian Arab Republic to the Mediterranean coast. Thence to the common border of Libya and Egypt on the North African coast excluding Cyprus. Southward along the western border 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 $02^{\circ} \mathrm{S} 41^{\circ} \mathrm{E}$. Then through the point $02^{\circ} \mathrm{S} 73^{\circ} \mathrm{E}$ to $37^{\circ} \mathrm{N} 73^{\circ} \mathrm{E}$. Then east along the border between Afghanistan and Pakistan, and west along the northern borders of Afghanistan and the Islamic Republic of Iran to the Caspian Sea. Then along the northern border of the Islamic Republic of Iran and Turkey to close the area at $41^{\circ} \mathrm{N} 40^{\circ} \mathrm{E}$.

## 27/118 Sub-Area 5A

From the point $37^{\circ} \mathrm{N} 40^{\circ} \mathrm{E}$, 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 Egypt and east along the common border of Egypt and the Sudan to $24^{\circ} \mathrm{N} 37^{\circ} \mathrm{E}$. Then through the points $11^{\circ} 45^{\prime} \mathrm{N} 42^{\circ} \mathrm{E}, 11^{\circ} 45^{\prime} \mathrm{N} 55^{\circ} \mathrm{E}$, $20^{\circ} \mathrm{N} 52^{\circ} \mathrm{E}$, to the point $26^{\circ} \mathrm{N} 52^{\circ} \mathrm{E}$. Thence along the border between Islamic Republic of Iran and Iraq, and the border between Iraq and Turkey, to the point $37^{\circ} \mathrm{N} 40^{\circ} \mathrm{E}$.

## 27/119 Sub-Area 5B

From the point $41^{\circ} \mathrm{N} 40^{\circ} \mathrm{E}$ to $37^{\circ} \mathrm{N} 40^{\circ} \mathrm{E}$. Thence east along the borders between Turkey and Syrian Arab Republic and Turkey and Iraq, and along the border between Iraq and the Islamic Republic of Iran to the point $30^{\circ} \mathrm{N} 49^{\circ} \mathrm{E}$. Thence along the middle of the Gulf through the points $26^{\circ} \mathrm{N} 52^{\circ} \mathrm{E}$ and $24^{\circ} \mathrm{N} 60^{\circ} \mathrm{E}$, to Mumbai. Then to $37^{\circ} \mathrm{N} 73^{\circ} \mathrm{E}$. Then east along the border between Afghanistan and Pakistan, then west along the northern borders of Afghanistan and the Islamic Republic of Iran, to the Caspian Sea. Then along the northern border of the Islamic Republic of Iran and Turkey to close the sub-area at $41^{\circ} \mathrm{N} 40^{\circ} \mathrm{E}$.

From the point $26^{\circ} \mathrm{N} 52^{\circ} \mathrm{E}$, and through the points $13^{\circ} \mathrm{N} 52^{\circ} \mathrm{E}, 13^{\circ} \mathrm{N} 54^{\circ} \mathrm{E}, 02^{\circ} \mathrm{S} 54^{\circ} \mathrm{E}$, $02^{\circ} \mathrm{S} 73^{\circ} \mathrm{E}$, to Mumbai. Then to $24^{\circ} \mathrm{N} 60^{\circ} \mathrm{E}$. Then along the middle of the Gulf to $26^{\circ} \mathrm{N} 52^{\circ} \mathrm{E}$.

## 27/121 Sub-Area 5D

From the junction 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 $02^{\circ} \mathrm{S} 42^{\circ} \mathrm{E}$. Then through the points $02^{\circ} \mathrm{S} 54^{\circ} \mathrm{E}, 13^{\circ} \mathrm{N} 54^{\circ} \mathrm{E}, 13^{\circ} \mathrm{N} 52^{\circ} \mathrm{E}$ to the point $12^{\circ} \mathrm{N} 44^{\circ} \mathrm{E}$. Thence northwest along the middle of the Red Sea to $24^{\circ} \mathrm{N} 37^{\circ} \mathrm{E}$. Thence along the southern border of Egypt to close the sub-area.

## 27/122 Regional and Domestic Air Route Area - 6 (RDARA-6)

From approximately $49^{\circ} \mathrm{N} 88^{\circ}$ E, eastward along the border between China and the following countries: the Russian Federation, Kazakhstan, Kyrgyzstan, Tajikistan and Afghanistan. Then along the border between Afghanistan and Pakistan, and the Islamic Republic of Iran and Pakistan to the point $23^{\circ} \mathrm{N} 61^{\circ} \mathrm{E}$. Thence to Mumbai. Then along the $73^{\circ} \mathrm{E}$ meridian to the point $02^{\circ} \mathrm{S}$ $73^{\circ} \mathrm{E}$, and through the points $02^{\circ} \mathrm{S} 92^{\circ} \mathrm{E}, 10^{\circ} \mathrm{S} 92^{\circ} \mathrm{E}, 10^{\circ} \mathrm{S} 141^{\circ} \mathrm{E}, 00^{\circ} 141^{\circ} \mathrm{E}, 00^{\circ} 160^{\circ} \mathrm{E}$, $03^{\circ} 30^{\prime} \mathrm{N} 160^{\circ} \mathrm{E}, 03^{\circ} 30^{\prime} \mathrm{N} 170^{\circ} \mathrm{W}, 10^{\circ} \mathrm{N} 170^{\circ} \mathrm{W}, 50^{\circ} \mathrm{N} 164^{\circ} \mathrm{E}$, to the point $43^{\circ} \mathrm{N} 147^{\circ} \mathrm{E}$. Thence west between the territorial waters of Japan and the Russian Federation and along the north-eastern and northern border of China to approximately $49^{\circ} \mathrm{N} 88^{\circ} \mathrm{E}$.

## 27/123 Sub-Area 6A

From the point $37^{\circ} \mathrm{N} 75^{\circ} \mathrm{E}$, along the border between Pakistan and Afghanistan, and the Islamic Republic of Iran and Pakistan to the point $23^{\circ} \mathrm{N} 61^{\circ} \mathrm{E}$. Thence to Mumbai. From Mumbai to $24^{\circ} \mathrm{N}$ $80^{\circ} \mathrm{E}$. Thence to Calcutta. Thence along the coast of Bangladesh and Myanmar to reach the border between Myanmar and Thailand. North along this border and that between Myanmar and Lao (P.D.R.). Thence along the border between China and Myanmar. Thence westward along the southern border of China to the point $37^{\circ} \mathrm{N} 75^{\circ} \mathrm{E}$.

## 27/124 Sub-Area 6B

From the point $39^{\circ} 49^{\prime} 41^{\prime \prime} \mathrm{N} 124^{\circ} 10^{\prime} 06^{\prime \prime} \mathrm{E}$, through the points $39^{\circ} 31^{\prime} 51^{\prime \prime} \mathrm{N} 124^{\circ} 06^{\prime} 31^{\prime \prime} \mathrm{E}$, $39^{\circ} \mathrm{N} 124^{\circ} \mathrm{E}$ to the point $32^{\circ} 30^{\prime} \mathrm{N} 124^{\circ} \mathrm{E}$. Between the point $32^{\circ} 30^{\prime} \mathrm{N} 124^{\circ} \mathrm{E}$ and the point $25^{\circ} \mathrm{N} 123^{\circ} \mathrm{E}$, the limit of this Sub-Area is undefined. From the point $25^{\circ} \mathrm{N} 123^{\circ} \mathrm{E}$, through the points $21^{\circ} \mathrm{N} 121^{\circ} 30^{\prime} \mathrm{E}, 20^{\circ} \mathrm{N} 120^{\circ} \mathrm{E}, 20^{\circ} \mathrm{N} 176^{\circ} \mathrm{W}, 50^{\circ} \mathrm{N} 164^{\circ} \mathrm{E}, 43^{\circ} \mathrm{N} 147^{\circ} \mathrm{E}$, thence west between the territorial waters of Japan and the Russian Federation and along the border between the Dem. People's Rep. of Korea and the Russian Federation, and then the border between China and the Dem. People's Rep. of Korea, to the point $39^{\circ} 49^{\prime} 41^{\prime \prime} \mathrm{N} 124^{\circ} 10^{\prime} 06^{\prime \prime} \mathrm{E}$.

## 27/125 Sub-Area 6C

From the point $20^{\circ} \mathrm{N} 130^{\circ} \mathrm{E}$ through the point $04^{\circ} \mathrm{N} 130^{\circ} \mathrm{E}$ to $04^{\circ} \mathrm{N} 118^{\circ} \mathrm{E}$. Thence along the southern borders of Sabah and Sarawak to the coast and then southward along the west coast of Borneo to the $110^{\circ} \mathrm{E}$ meridian. Thence along $110^{\circ} \mathrm{E}$ meridian to the point $10^{\circ} \mathrm{S} 110^{\circ} \mathrm{E}$. Thence through the points $10^{\circ} \mathrm{S} 141^{\circ} \mathrm{E}, 00^{\circ} 141^{\circ} \mathrm{E}, 00^{\circ} 160^{\circ} \mathrm{E}, 03^{\circ} 30^{\prime} \mathrm{N} 160^{\circ} \mathrm{E}, 03^{\circ} 30^{\prime} \mathrm{N} 170^{\circ} \mathrm{W}$, $10^{\circ} \mathrm{N} 170^{\circ} \mathrm{W}, 20^{\circ} \mathrm{N} 176^{\circ} \mathrm{W}$ to $20^{\circ} \mathrm{N} 130^{\circ} \mathrm{E}$.

From the junction of the borders of China, India and Myanmar, south along the India-Myanmar and Bangladesh-Myanmar borders to the Bay of Bengal. Along the coast of Myanmar to its southernmost point, then to Weh Island (off the north coast of Sumatra). Then to the point $02^{\circ} \mathrm{S} 92^{\circ} \mathrm{E}$, and through the point $10^{\circ} \mathrm{S} 92^{\circ} \mathrm{E}$ to $10^{\circ} \mathrm{S} 110^{\circ} \mathrm{E}$. Then eastward to $10^{\circ} \mathrm{S} 141^{\circ} \mathrm{E}$ extending northward to $00^{\circ} 141^{\circ} \mathrm{E}$ and then to $04^{\circ} \mathrm{N} 130^{\circ} \mathrm{E}$ through the point $20^{\circ} \mathrm{N} 130^{\circ} \mathrm{E}$ to $20^{\circ} \mathrm{N} 113^{\circ} \mathrm{E}$. Thence, south around the Island of Hainan, and along the border between China, Viet Nam, the Lao (P.D.R.) and Myanmar, to close the Sub-Area at the junction of the borders of China, India and Myanmar.

## 27/127 Sub-Area $6 E$

From the point $20^{\circ} \mathrm{N} 73^{\circ} \mathrm{E}$, and through the points $02^{\circ} \mathrm{S} 73^{\circ} \mathrm{E}, 02^{\circ} \mathrm{S} 92^{\circ} \mathrm{E}$, through Weh Island (off the north coast of Sumatra) to $10^{\circ} \mathrm{N} 97^{\circ} \mathrm{E}$. Thence along the coasts of Myanmar, Bangladesh and India to Calcutta. Then through the points $24^{\circ} \mathrm{N} 80^{\circ} \mathrm{E}$ to $20^{\circ} \mathrm{N} 73^{\circ} \mathrm{E}$.

## 27/128 Sub-Area $6 F$

From the point $25^{\circ} \mathrm{N} 123^{\circ} \mathrm{E}, 21^{\circ} \mathrm{N} 121^{\circ} 30^{\prime} \mathrm{E}, 20^{\circ} \mathrm{N} 120^{\circ} \mathrm{E}, 20^{\circ} \mathrm{N} 113^{\circ} \mathrm{E}$, thence south around the Island of Hainan and along China-Viet Nam, China-Lao (P.D.R.) and China-Myanmar borders to the junction of the borders of China, India and Myanmar, south along the India-Myanmar and Bangladesh-Myanmar borders to the Bay of Bengal. Along the coast of Myanmar to its southernmost point then to Weh Island (off the north coast of Sumatra). Then to the point $02^{\circ} \mathrm{S}$ $92^{\circ} \mathrm{E}$ and through the point $10^{\circ} \mathrm{S} 92^{\circ} \mathrm{E}$ to $10^{\circ} \mathrm{S} 110^{\circ} \mathrm{E}$. Then northward along $110^{\circ} \mathrm{E}$ meridian, thence along the boundary of Sub-Area 6 C to the points $20^{\circ} \mathrm{N} 130^{\circ} \mathrm{E}, 43^{\circ} \mathrm{N} 147^{\circ} \mathrm{E}$, thence westward between the territorial waters of Japan and the Russian Federation and along the border between the Dem. People's Rep. of Korea and the Russian Federation, then the border between China and the Dem. People's Rep. of Korea, to the points $39^{\circ} 49^{\prime} 41^{\prime \prime} \mathrm{N} 124^{\circ} 10^{\prime} 06^{\prime \prime} \mathrm{E}$, $39^{\circ} 31^{\prime} 51^{\prime \prime} \mathrm{N} 124^{\circ} 06^{\prime} 31^{\prime \prime} \mathrm{E}, 39^{\circ} \mathrm{N} 124^{\circ} \mathrm{E}$, then to the point $32^{\circ} 30^{\prime} \mathrm{N} 124^{\circ} \mathrm{E}$.
Between the points $32^{\circ} 30^{\prime} \mathrm{N} 124^{\circ} \mathrm{E}$ and $25^{\circ} \mathrm{N} 123^{\circ} \mathrm{E}$, the limit of this Sub-Area is undefined.

## 27/129 Sub-Area $6 G$

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

Between the points $25^{\circ} \mathrm{N} 123^{\circ} \mathrm{E}$ and the point $32^{\circ} 30^{\prime} \mathrm{N} 124^{\circ} \mathrm{E}$, 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 China; the frequencies allotted to Sub-Areas 6D and 6 F 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 China of the frequencies allotted to Sub-

Area 6 G shall be within the area defined by a line starting at $21^{\circ} 32^{\prime} 52^{\prime \prime} \mathrm{N} 108^{\circ} \mathrm{E}$, passing through the points $20^{\circ} \mathrm{N} 108^{\circ} \mathrm{E}, 20^{\circ} \mathrm{N} 107^{\circ} \mathrm{E}, 18^{\circ} \mathrm{N} 107^{\circ} \mathrm{E}, 18^{\circ} \mathrm{N} 108^{\circ} \mathrm{E}, 15^{\circ} \mathrm{N} 110^{\circ} \mathrm{E}, 10^{\circ} \mathrm{N} 110^{\circ} \mathrm{E}$, $06^{\circ} \mathrm{N} 108^{\circ} \mathrm{E}, 03^{\circ} 30^{\prime} \mathrm{N} 112^{\circ} \mathrm{E}, 04^{\circ} \mathrm{N} 113^{\circ} \mathrm{E}, 08^{\circ} \mathrm{N} 116^{\circ} \mathrm{E}, 10^{\circ} \mathrm{N} 118^{\circ} \mathrm{E}, 14^{\circ} \mathrm{N} 119^{\circ} \mathrm{E}$, $18^{\circ} \mathrm{N} 119^{\circ} \mathrm{E}$ to $20^{\circ} \mathrm{N} 120^{\circ} 40^{\prime} \mathrm{E}$ and thence along the limit of Sub-Area 6D to $21^{\circ} 32^{\prime} 52^{\prime \prime} \mathrm{N} 108^{\circ} \mathrm{E}$.

## 27/130 Regional and Domestic Air Route Area - 7 (RDARA-7)

From the South Pole along the $20^{\circ} \mathrm{W}$ meridian to $05^{\circ} \mathrm{S}$. Then along the $05^{\circ} \mathrm{S}$ parallel to $12^{\circ} \mathrm{E}$. Thence along the border between the Rep. of the Congo and Angola, then along the northern border of the Dem. Rep. of the Congo, along the border between Uganda and Sudan, and the borders between Kenya and Sudan, Ethiopia and Somalia, to the point $02^{\circ} \mathrm{S} 42^{\circ} \mathrm{E}$. Then to $02^{\circ} \mathrm{S} 60^{\circ} \mathrm{E}$ and along the $60^{\circ} \mathrm{E}$ meridian to $11^{\circ} \mathrm{S}$, then through the points $11^{\circ} \mathrm{S} 65^{\circ} \mathrm{E}, 40^{\circ} \mathrm{S} 65^{\circ} \mathrm{E}, 40^{\circ} \mathrm{S}$ $60^{\circ} \mathrm{E}$ to the South Pole.

## 27/131 Sub-Area 7A

From the South Pole along the $20^{\circ} \mathrm{W}$ meridian to $05^{\circ} \mathrm{S}$. Then through the points $05^{\circ} \mathrm{S} 10^{\circ} \mathrm{E}$, $40^{\circ} \mathrm{S} 10^{\circ} \mathrm{E}$, to $40^{\circ} \mathrm{S} 60^{\circ} \mathrm{E}$. Then along the $60^{\circ} \mathrm{E}$ meridian to the South Pole.

## 27/132 Sub-Area 7B

From the point $05^{\circ} \mathrm{S} 10^{\circ} \mathrm{E}$ to $05^{\circ} \mathrm{S} 12^{\circ} \mathrm{E}$. Thence along the border between the Rep. of the Congo and Angola, then along the northern border of the Dem. Rep. of the Congo, to the junction of the borders of Uganda, the Dem. Rep. of the Congo and Sudan. Thence along the eastern borders of the Dem. Rep. of the Congo, Rwanda, Burundi, and the Dem. Rep. of the Congo. Thence along the southern borders of the Dem. Rep. of the Congo and Angola to the coast of the South Atlantic. Thence to the point $17^{\circ} \mathrm{S} 10^{\circ} \mathrm{E}$, and then to the point $05^{\circ} \mathrm{S} 10^{\circ} \mathrm{E}$.

## 27/133 Sub-Area 7C

From the junction of the borders of Uganda, the Dem. Rep. of the Congo 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 $11^{\circ} \mathrm{S} 41^{\circ} \mathrm{E}, 11^{\circ} \mathrm{S} 60^{\circ} \mathrm{E}, 02^{\circ} \mathrm{S} 60^{\circ} \mathrm{E}$, to $02^{\circ} \mathrm{S} 41^{\circ} \mathrm{E}$ 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 Dem. Rep. of the Congo, Sudan and Uganda.

## 27/134 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 $27^{\circ} \mathrm{S} 33^{\circ} \mathrm{E}, 40^{\circ} \mathrm{S} 33^{\circ} \mathrm{E}$, $40^{\circ} \mathrm{S} 65^{\circ} \mathrm{E}, 11^{\circ} \mathrm{S} 65^{\circ} \mathrm{E}$ to $11^{\circ} \mathrm{S} 41^{\circ} \mathrm{E}$. Thence along the northern border of Mozambique to Lake Nyasa.

## 27/135 Sub-Area $7 E$

From the point $17^{\circ} \mathrm{S} 10^{\circ} \mathrm{E}$, and through the points $40^{\circ} \mathrm{S} 10^{\circ} \mathrm{E}, 40^{\circ} \mathrm{S} 33^{\circ} \mathrm{E}$, to $27^{\circ} \mathrm{S} 33^{\circ} \mathrm{E}$. 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 Dem. Rep. of the Congo and Zambia, Angola and Zambia, and Angola and Namibia to the coast at the point $17^{\circ} \mathrm{S} 10^{\circ} \mathrm{E}$.

27/136 Sub-Area 7F
From the point $05^{\circ} \mathrm{S} 10^{\circ} \mathrm{E}$ to $05^{\circ} \mathrm{S} 12^{\circ} \mathrm{E}$, along the border between the Rep. of the Congo and Angola to the junction point of the borders of the Rep. of the Congo, Angola, and the Dem. Rep. of the Congo. Thence along the border between Angola and the Dem. Rep. of the Congo until the coast of the Atlantic, along the coastline until the Zaire River and thence along the northern, eastern and southern border of Angola to the coast of the South Atlantic. Thence to the point $17^{\circ} \mathrm{S} 10^{\circ} \mathrm{E}$ and then to the point $05^{\circ} \mathrm{S} 10^{\circ} \mathrm{E}$.

27/137 Regional and Domestic Air Route Area-8 (RDARA-8)
From the South Pole along the $60^{\circ} \mathrm{E}$ meridian to $40^{\circ} \mathrm{S}$ then through the points $40^{\circ} \mathrm{S} 65^{\circ} \mathrm{E}$, $11^{\circ} \mathrm{S} 65^{\circ} \mathrm{E}, 11^{\circ} \mathrm{S} 60^{\circ} \mathrm{E}, 02^{\circ} \mathrm{S} 60^{\circ} \mathrm{E}, 02^{\circ} \mathrm{S} 92^{\circ} \mathrm{E}, 10^{\circ} \mathrm{S} 92^{\circ} \mathrm{E}$, to $10^{\circ} \mathrm{S} 110^{\circ} \mathrm{E}$. Then along the $110^{\circ}$ E meridian to the South Pole.

## 27/138 Regional and Domestic Air Route Area - 9 (RDARA-9)

From the South Pole along the $160^{\circ} \mathrm{E}$ meridian to $27^{\circ} \mathrm{S}$. Then through the points $19^{\circ} \mathrm{S} 153^{\circ} \mathrm{E}$, $10^{\circ} \mathrm{S} 145^{\circ} \mathrm{E}, 10^{\circ} \mathrm{S} 141^{\circ} \mathrm{E}, 00^{\circ} 141^{\circ} \mathrm{E}, 00^{\circ} 160^{\circ} \mathrm{E}, 03^{\circ} 30^{\prime} \mathrm{N} 160^{\circ} \mathrm{E}, 03^{\circ} 30^{\prime} \mathrm{N} 120^{\circ} \mathrm{W}$. Then along the $120^{\circ} \mathrm{W}$ meridian to the South Pole.

27/139 Sub-Area 9B
From the point $00^{\circ} 141^{\circ} \mathrm{E}$ through points $10^{\circ} \mathrm{S} 141^{\circ} \mathrm{E}, 10^{\circ} \mathrm{S} 145^{\circ} \mathrm{E}, 27^{\circ} \mathrm{S} 160^{\circ} \mathrm{E}, 27^{\circ} \mathrm{S}$ $157^{\circ} \mathrm{W}, 03^{\circ} 30^{\prime} \mathrm{N} 157^{\circ} \mathrm{W}, 03^{\circ} 30^{\prime} \mathrm{N} 160^{\circ} \mathrm{E}, 00^{\circ} 160^{\circ} \mathrm{E}$ to the point $00^{\circ} 141^{\circ} \mathrm{E}$.

## 27/140 Sub-Area 9C

From the South Pole along the $170^{\circ} \mathrm{W}$ meridian to $03^{\circ} 30^{\prime} \mathrm{N}$. Then through the point $03^{\circ} 30^{\prime} \mathrm{N}$ $120^{\circ} \mathrm{W}$ and along the $120^{\circ} \mathrm{W}$ meridian to the South Pole.

## 27/141 Sub-Area 9D

From the South Pole along the $160^{\circ} \mathrm{E}$ meridian to $27^{\circ} \mathrm{S}$. Then through the point $27^{\circ} \mathrm{S} 170^{\circ} \mathrm{W}$ and along the $170^{\circ} \mathrm{W}$ meridian to the South Pole.

27/142 Regional and Domestic Air Route Area - 10 (RDARA-10)
From the point $50^{\circ} \mathrm{N} 164^{\circ} \mathrm{E}$ to $66^{\circ} \mathrm{N} 169^{\circ} \mathrm{W}$. Then along the $169^{\circ} \mathrm{W}$ meridian to the North Pole. Then through the points $82^{\circ} \mathrm{N} 30^{\circ} \mathrm{E}, 82^{\circ} \mathrm{N} 00^{\circ}, 73^{\circ} \mathrm{N} 00^{\circ}, 73^{\circ} \mathrm{N} 15^{\circ} \mathrm{W}$. Then along the $15^{\circ} \mathrm{W}$ meridian to $72^{\circ} \mathrm{N}$. Then through the points $40^{\circ} \mathrm{N} 50^{\circ} \mathrm{W}, 40^{\circ} \mathrm{N} 65^{\circ} \mathrm{W}$ to $44^{\circ} 30^{\prime} \mathrm{N} 73^{\circ} \mathrm{W}$, $41^{\circ} \mathrm{N} 81^{\circ} \mathrm{W}, 41^{\circ} \mathrm{N} 88^{\circ} \mathrm{W} .48^{\circ} \mathrm{N} 91^{\circ} \mathrm{W}, 48^{\circ} \mathrm{N} 127^{\circ} \mathrm{W}, 50^{\circ} \mathrm{N} 130^{\circ} \mathrm{W}$, then westward to the point $50^{\circ} \mathrm{N} 164^{\circ} \mathrm{E}$.

27/143 Sub-Area 10A
From the point $50^{\circ} \mathrm{N} 164^{\circ} \mathrm{E}$ to $66^{\circ} \mathrm{N} 169^{\circ} \mathrm{W}$, along the $169^{\circ} \mathrm{W}$ meridian to the North Pole, along the $130^{\circ} \mathrm{W}$ meridian to $50^{\circ} \mathrm{N}$, then westward to the point $50^{\circ} \mathrm{N} 164^{\circ} \mathrm{E}$.

27/144 Sub-Area 10B
From the point $57^{\circ} \mathrm{N} 140^{\circ} \mathrm{W}$, along the $140^{\circ} \mathrm{W}$ meridian to the North Pole. Then along the $91^{\circ} \mathrm{W}$ meridian to $48^{\circ} \mathrm{N}$. Thence through the points $48^{\circ} \mathrm{N} 127^{\circ} \mathrm{W}, 57^{\circ} \mathrm{N} 139^{\circ} \mathrm{W}$, to $57^{\circ} \mathrm{N} 140^{\circ} \mathrm{W}$.

From the point $57^{\circ} \mathrm{N} 140^{\circ} \mathrm{W}$, and through the points $60^{\circ} \mathrm{N} 140^{\circ} \mathrm{W}, 60^{\circ} \mathrm{N} 91^{\circ} \mathrm{W}, 48^{\circ} \mathrm{N} 91^{\circ} \mathrm{W}$, $48^{\circ} \mathrm{N} 127^{\circ} \mathrm{W}, 57^{\circ} \mathrm{N} 139^{\circ} \mathrm{W}$, to $57^{\circ} \mathrm{N} 140^{\circ} \mathrm{W}$.

## 27/146 Sub-Area 10D

From the point $48^{\circ} \mathrm{N} 98^{\circ} \mathrm{W}$, along the $98^{\circ} \mathrm{W}$ meridian to the North Pole. Then along the $45^{\circ} \mathrm{W}$ meridian to $69^{\circ} \mathrm{N}$. Then through the points $61^{\circ} \mathrm{N} 70^{\circ} \mathrm{W}, 45^{\circ} \mathrm{N} 72^{\circ} \mathrm{W}, 41^{\circ} \mathrm{N} 81^{\circ} \mathrm{W}$, $41^{\circ} \mathrm{N} 88^{\circ} \mathrm{W}, 48^{\circ} \mathrm{N} 91^{\circ} \mathrm{W}$, to $48^{\circ} \mathrm{N} 98^{\circ} \mathrm{W}$.

27/147 Sub-Area 10E
From the point $45^{\circ} \mathrm{N} 74^{\circ} \mathrm{W}$, and through the point $61^{\circ} \mathrm{N} 72^{\circ} \mathrm{W}$ to $69^{\circ} \mathrm{N} 47^{\circ} \mathrm{W}$. Then along the $47^{\circ} \mathrm{W}$ meridian to the North Pole. Then along the $15^{\circ} \mathrm{W}$ meridian to $72^{\circ} \mathrm{N}$. Then through the points $40^{\circ} \mathrm{N} 50^{\circ} \mathrm{W}, 40^{\circ} \mathrm{N} 65^{\circ} \mathrm{W}$, to close the sub-area at $45^{\circ} \mathrm{N} 74^{\circ} \mathrm{W}$.

27/148 Sub-Area 10F
From the North Pole through the points $82^{\circ} \mathrm{N} 30^{\circ} \mathrm{E}, 82^{\circ} \mathrm{N} 00^{\circ}, 73^{\circ} \mathrm{N} 00^{\circ}, 73^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}$, $70^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}, 63^{\circ} 30^{\prime} \mathrm{N} 39^{\circ} \mathrm{W}, 58^{\circ} 30^{\prime} \mathrm{N} 43^{\circ} \mathrm{W}, 58^{\circ} 30^{\prime} \mathrm{N} 50^{\circ} \mathrm{W}, 63^{\circ} 30^{\prime} \mathrm{N} 55^{\circ} 44^{\prime} \mathrm{W}, 65^{\circ} 30^{\prime} \mathrm{N}$ $58^{\circ} 39^{\prime} \mathrm{W}, 74^{\circ} \mathrm{N} 68^{\circ} 18^{\prime} \mathrm{W}, 76^{\circ} \mathrm{N} 76^{\circ} \mathrm{W}, 78^{\circ} \mathrm{N} 75^{\circ} \mathrm{W}, 82^{\circ} \mathrm{N} 60^{\circ} \mathrm{W}$ to the North Pole.

## 27/149 Regional and Domestic Air Route Area - 11 (RDARA-11)

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

## 27/150 Sub-Area 11A

From the point $29^{\circ} \mathrm{N} 180^{\circ}$, through the points $50^{\circ} \mathrm{N} 164^{\circ} \mathrm{E}, 50^{\circ} \mathrm{N} 130^{\circ} \mathrm{W}, 33^{\circ} \mathrm{N} 130^{\circ} \mathrm{W}$, $33^{\circ} \mathrm{N} 153^{\circ} \mathrm{W}, 29^{\circ} \mathrm{N} 153^{\circ} \mathrm{W}$, to the point $29^{\circ} \mathrm{N} 180^{\circ}$.

27/151 Sub-Area 11B
From the point $50^{\circ} \mathrm{N} 130^{\circ} \mathrm{W}$ and through the points $33^{\circ} \mathrm{N} 130^{\circ} \mathrm{W}, 33^{\circ} \mathrm{N} 119^{\circ} \mathrm{W}, 25^{\circ} \mathrm{N} 98^{\circ} \mathrm{W}$, $25^{\circ} \mathrm{N} 65^{\circ} \mathrm{W}, 40^{\circ} \mathrm{N} 65^{\circ} \mathrm{W}, 46^{\circ} \mathrm{N} 67^{\circ} \mathrm{W}$. Then along the border between the United States of America and Canada through $50^{\circ} \mathrm{N} 127^{\circ} \mathrm{W}$, to the point $50^{\circ} \mathrm{N} 130^{\circ} \mathrm{W}$.

27/152 Sub-Area 11C
From the point $25^{\circ} \mathrm{N} 65^{\circ} \mathrm{W}$ and through the points $40^{\circ} \mathrm{N} 65^{\circ} \mathrm{W}, 40^{\circ} \mathrm{N} 50^{\circ} \mathrm{W}, 25^{\circ} \mathrm{N} 35^{\circ} \mathrm{W}$, to the point $25^{\circ} \mathrm{N} 65^{\circ} \mathrm{W}$.

## 27/153 Regional and Domestic Air Route Area - 12 (RDARA-12)

From the point $03^{\circ} 30^{\prime} \mathrm{N} 170^{\circ} \mathrm{W}$ to the point $10^{\circ} \mathrm{N} 170^{\circ} \mathrm{W}$, then along the boundary between ITU Regions 2 and 3 to $29^{\circ} \mathrm{N} 180^{\circ}$, and thence to $29^{\circ} \mathrm{N} 153^{\circ} \mathrm{W}, 33^{\circ} \mathrm{N} 153^{\circ} \mathrm{W}$, through the points $33^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}, 35^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}, 32^{\circ} \mathrm{N} 104^{\circ} \mathrm{W}, 25^{\circ} \mathrm{N} 91^{\circ} \mathrm{W}, 26^{\circ} \mathrm{N} 91^{\circ} \mathrm{W}, 26^{\circ} \mathrm{N} 79^{\circ} \mathrm{W}$, $27^{\circ} \mathrm{N} 79^{\circ} \mathrm{W}, 27^{\circ} \mathrm{N} 76^{\circ} 30^{\prime} \mathrm{W}, 25^{\circ} \mathrm{N} 70^{\circ} \mathrm{W}, 25^{\circ} \mathrm{N} 35^{\circ} \mathrm{W}$ and along the boundary between ITU Regions 1 and 2 to $00^{\circ} 20^{\circ} \mathrm{W}$. Thence through the points $00^{\circ} 44^{\circ} \mathrm{W}, 04^{\circ} 24^{\prime} \mathrm{N} 50^{\circ} 39^{\prime} \mathrm{W}$. Then along the boundaries between Brazil and the French 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 $04^{\circ} \mathrm{S} 93^{\circ} \mathrm{W}$. Then to the point $05^{\circ} \mathrm{S} 93^{\circ} \mathrm{W}$ and through the points $05^{\circ} \mathrm{S} 120^{\circ} \mathrm{W}, 03^{\circ} 30^{\prime} \mathrm{N} 120^{\circ} \mathrm{W}$ to the point $03^{\circ} 30^{\prime} \mathrm{N} 170^{\circ} \mathrm{W}$.

## 27/154 Sub-Area 12A

From the point $03^{\circ} 30^{\prime} \mathrm{N} 170^{\circ} \mathrm{W}$ to the point $10^{\circ} \mathrm{N} 170^{\circ} \mathrm{W}$, then along the boundary between ITU Regions 2 and 3 to $29^{\circ} \mathrm{N} 180^{\circ}$, and thence through the points $29^{\circ} \mathrm{N} 153^{\circ} \mathrm{W}$, $03^{\circ} 30^{\prime} \mathrm{N} 153^{\circ} \mathrm{W}$ to the point $03^{\circ} 30^{\prime} \mathrm{N} 170^{\circ} \mathrm{W}$.

27/155 Sub-Area 12B
From the point $03^{\circ} 30^{\prime} \mathrm{N} 153^{\circ} \mathrm{W}$ to $33^{\circ} \mathrm{N} 153^{\circ} \mathrm{W}$, through the points $33^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}$, $17^{\circ} \mathrm{N} 115^{\circ} \mathrm{W}, ~ 14^{\circ} \mathrm{N} 93^{\circ} \mathrm{W}, ~ 02^{\circ} \mathrm{N} 86^{\circ} \mathrm{W}, ~ 02^{\circ} \mathrm{N} 93^{\circ} \mathrm{W}, ~ 05^{\circ} \mathrm{S} 93^{\circ} \mathrm{W}, ~ 05^{\circ} \mathrm{S} 120^{\circ} \mathrm{W}$, $03^{\circ} 30^{\prime} \mathrm{N} 120^{\circ} \mathrm{W}$, to the point $03^{\circ} 30^{\prime} \mathrm{N} 153^{\circ} \mathrm{W}$.

27/156 Sub-Area 12C
From the point $33^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}$, through the points $35^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}, 32^{\circ} \mathrm{N} 104^{\circ} \mathrm{W}, 25^{\circ} \mathrm{N} 91^{\circ} \mathrm{W}$, $23^{\circ} \mathrm{N} 83^{\circ} \mathrm{W}, 22^{\circ} \mathrm{N} 83^{\circ} \mathrm{W}, 13^{\circ} \mathrm{N} 90^{\circ} \mathrm{W}, 16^{\circ} \mathrm{N} 116^{\circ} \mathrm{W}$, to the point $33^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}$.

27/157 Sub-Area 12D
From the point $20^{\circ} \mathrm{N} 91^{\circ} \mathrm{W}$, through the points $26^{\circ} \mathrm{N} 91^{\circ} \mathrm{W}, 26^{\circ} \mathrm{N} 79^{\circ} \mathrm{W}, 27^{\circ} \mathrm{N} 79^{\circ} \mathrm{W}$, $27^{\circ} \mathrm{N} 76^{\circ} 30^{\prime} \mathrm{W}, 26^{\circ} \mathrm{N} 73^{\circ} \mathrm{W}, 17^{\circ} \mathrm{N} 58^{\circ} \mathrm{W}$, to $10^{\circ} \mathrm{N} 58^{\circ} \mathrm{W}$. Thence through Panama City, Colon, Swan Island, and Belize City to the point $20^{\circ} \mathrm{N} 91^{\circ} \mathrm{W}$.

27/158 Sub-Area 12E
From the point $15^{\circ} \mathrm{N} 95^{\circ} \mathrm{W}$ and through $23^{\circ} \mathrm{N} 92^{\circ} \mathrm{W}, 23^{\circ} \mathrm{N} 85^{\circ} \mathrm{W}, 19^{\circ} \mathrm{N} 85^{\circ} \mathrm{W}, 09^{\circ} \mathrm{N} 77^{\circ} \mathrm{W}$, $02^{\circ} \mathrm{N} 79^{\circ} \mathrm{W}$. Thence to $01^{\circ} \mathrm{N} 75^{\circ} \mathrm{W}$ along the eastern and southern border of Ecuador to the point $04^{\circ} \mathrm{S} 81^{\circ} \mathrm{W}$, and from there to $02^{\circ} \mathrm{N} 81^{\circ} \mathrm{W}$ and $02^{\circ} \mathrm{N} 86^{\circ} \mathrm{W}, 14^{\circ} \mathrm{N} 93^{\circ} \mathrm{W}$ to close the sub-area at $15^{\circ} \mathrm{N} 95^{\circ} \mathrm{W}$.

## 27/159 Sub-Area 12F

From the point $02^{\circ} \mathrm{N} 79^{\circ} \mathrm{W}$ to the point $08^{\circ} \mathrm{N} 83^{\circ} \mathrm{W}$, then along the border between Panama and Costa Rica, through the points $10^{\circ} \mathrm{N} 83^{\circ} \mathrm{W}, 13^{\circ} \mathrm{N} 83^{\circ} \mathrm{W}, 13^{\circ} \mathrm{N} 70^{\circ} \mathrm{W}, 68^{\circ} \mathrm{N} 70^{\circ} \mathrm{W}$, $06^{\circ} \mathrm{N} 67^{\circ} \mathrm{W}$ and $01^{\circ} \mathrm{N} 66^{\circ} \mathrm{W}$. Then along the border between Brazil and Colombia to $04^{\circ} \mathrm{S}$ $70^{\circ} \mathrm{W}$. Thence along the border between Colombia and Peru, continuing along the border between Colombia and Ecuador, to the point $02^{\circ} \mathrm{N} 79^{\circ} \mathrm{W}$.

## 27/160 Sub-Area $12 G$

From the point $07^{\circ} \mathrm{N} 73^{\circ} \mathrm{W}$, through the points $14^{\circ} \mathrm{N} 73^{\circ} \mathrm{W}, 14^{\circ} \mathrm{N} 58^{\circ} \mathrm{W}, 01^{\circ} 31^{\prime} \mathrm{N} 58^{\circ} \mathrm{W}$ and along the borders of Brazil with Guyana, Venezuela, Colombia through the points $01^{\circ} 57^{\prime} \mathrm{N} 68^{\circ} \mathrm{W}, 05^{\circ} \mathrm{N} 69^{\circ} \mathrm{W}$, to the point $07^{\circ} \mathrm{N} 73^{\circ} \mathrm{W}$.

## 27/161 Sub-Area 12H

From the point $05^{\circ} \mathrm{N} 70^{\circ} \mathrm{W}$, through the points $08^{\circ} 45^{\prime} \mathrm{N} 60^{\circ} \mathrm{W}, 08^{\circ} \mathrm{N} 58^{\circ} \mathrm{W}, 08^{\circ} \mathrm{N} 49^{\circ} \mathrm{W}$, $04^{\circ} 10^{\prime} \mathrm{N} 51^{\circ} 36^{\prime} \mathrm{W}$, and along the borders of Brazil with French Guiana, Surinam, Guyana, Venezuela and Colombia to the junction of the borders of Brazil, Colombia and Peru, to the point $05^{\circ} \mathrm{N} 70^{\circ} \mathrm{W}$.

From the point $25^{\circ} \mathrm{N} 70^{\circ} \mathrm{W}$, through the point $25^{\circ} \mathrm{N} 35^{\circ} \mathrm{W}$ and along the boundary between ITU Regions 1 and 2, to $00^{\circ} 20^{\circ} \mathrm{W}$. Thence through the points $00^{\circ} 44^{\circ} \mathrm{W}, 08^{\circ} \mathrm{N} 54^{\circ} \mathrm{W}, 08^{\circ} \mathrm{N} 58^{\circ} \mathrm{W}$, $17^{\circ} \mathrm{N} 58^{\circ} \mathrm{W}$, to the point $25^{\circ} \mathrm{N} 70^{\circ} \mathrm{W}$.

27/163 Sub-Area $12 J$
From the point $04^{\circ} \mathrm{S} 93^{\circ} \mathrm{W}$, through the points $02^{\circ} \mathrm{N} 93^{\circ} \mathrm{W}, 02^{\circ} \mathrm{N} 79^{\circ} \mathrm{W}$. 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 $04^{\circ} \mathrm{S} 93^{\circ} \mathrm{W}$.

## 27/164 Regional and Domestic Air Route Area - 13 (RDARA-13)

From the South Pole along the $120^{\circ} \mathrm{W}$ meridian to $05^{\circ} \mathrm{S}$. Then through the points $05^{\circ} \mathrm{S} 93^{\circ} \mathrm{W}$, $04^{\circ} \mathrm{S} 82^{\circ} \mathrm{W}$, and along the southern border of Ecuador, Colombia, Venezuela, Guyana, Surinam, the French Guiana, to the point $04^{\circ} 24^{\prime} \mathrm{N} 50^{\circ} 39^{\prime} \mathrm{W}$. Then through the points $04^{\circ} 24^{\prime} \mathrm{N} 47^{\circ} \mathrm{W}$, $00^{\circ} 32^{\circ} \mathrm{W}$ to the point $00^{\circ} 20^{\circ} \mathrm{W}$, and along the $20^{\circ} \mathrm{W}$ meridian to the South Pole.

## 27/165 Sub-Area 13A

From the point $05^{\circ} \mathrm{S} 120^{\circ} \mathrm{W}$ through the points $05^{\circ} \mathrm{S} 93^{\circ} \mathrm{W}, 04^{\circ} \mathrm{S} 82^{\circ} \mathrm{W}, 19^{\circ} \mathrm{S} 81^{\circ} \mathrm{W}$, $57^{\circ} \mathrm{S} 81^{\circ} \mathrm{W}$, to $57^{\circ} \mathrm{S} 90^{\circ} \mathrm{W}$. Thence to the South Pole to the point $05^{\circ} \mathrm{S} 120^{\circ} \mathrm{W}$.

27/166 Sub-Area 13B
From the point $29^{\circ} \mathrm{S} 111^{\circ} \mathrm{W}$, through the points $24^{\circ} \mathrm{S} 111^{\circ} \mathrm{W}, 24^{\circ} \mathrm{S} 104^{\circ} \mathrm{W}, 29^{\circ} \mathrm{S} 104^{\circ} \mathrm{W}$, to the point $29^{\circ} \mathrm{S} 111^{\circ} \mathrm{W}$.

## 27/167 Sub-Area 13C

From the point $15^{\circ} \mathrm{S} 47^{\circ} \mathrm{W}$, through the points $20^{\circ} \mathrm{S} 44^{\circ} \mathrm{W}, 23^{\circ} 19^{\prime} \mathrm{S} 42^{\circ} \mathrm{W}, 25^{\circ} \mathrm{S} 45^{\circ} \mathrm{W}$, $22^{\circ} 30^{\prime} \mathrm{S} 50^{\circ} 39^{\prime} \mathrm{W}, 19^{\circ} 52^{\prime} \mathrm{S} 58^{\circ} \mathrm{W}$, and along the borders of Brazil with Paraguay, Bolivia, Peru, Colombia, Venezuela, Guyana, Surinam and French Guiana to $04^{\circ} 24^{\prime} \mathrm{N} 50^{\circ} 39^{\prime} \mathrm{W}$, $04^{\circ} 24^{\prime} \mathrm{N} 47^{\circ} \mathrm{W}$, to the point $15^{\circ} \mathrm{S} 47^{\circ} \mathrm{W}$.

## 27/168 Sub-Area 13D

From $11^{\circ} \mathrm{S} 69^{\circ} 30^{\prime} \mathrm{W}$ along the border between Bolivia and Brazil and through the point $20^{\circ} 10^{\prime} \mathrm{S} 58^{\circ} \mathrm{W}$, along the border between Bolivia and Paraguay to $22^{\circ} 30^{\prime} \mathrm{S} 62^{\circ} 30^{\prime} \mathrm{W}$. Then along the border between Bolivia and Argentina and through the point $23^{\circ} \mathrm{S} 67^{\circ} \mathrm{W}$ along the border between Bolivia and Chile and through the point $16^{\circ} 30^{\prime} \mathrm{S} 69^{\circ} 30^{\prime} \mathrm{W}$ following the border between Bolivia and Peru to the point $11^{\circ} \mathrm{S} 69^{\circ} 30^{\prime} \mathrm{W}$.

27/169 Sub-Area 13M
From the point $19^{\circ} \mathrm{S} 81^{\circ} \mathrm{W}$, through the points $04^{\circ} \mathrm{S} 82^{\circ} \mathrm{W}, 03^{\circ} \mathrm{S} 80^{\circ} \mathrm{W}$, following the boundaries between Peru and Ecuador, Colombia and Brazil to the point $11^{\circ} \mathrm{S} 69^{\circ} 30^{\prime} \mathrm{W}$, along the border of Peru with Bolivia to $17^{\circ} 30^{\prime} \mathrm{S} 69^{\circ} 30^{\prime} \mathrm{W}$, then along the border of Peru with Chile to the point $19^{\circ} \mathrm{S} 81^{\circ} \mathrm{W}$.

From the point $22^{\circ} 30^{\prime} \mathrm{S} 62^{\circ} 30^{\prime} \mathrm{W}$ along the border of Paraguay with Bolivia to $20^{\circ} 10^{\prime} \mathrm{S} 58^{\circ} \mathrm{W}$, along the border of Paraguay with Brazil to $25^{\circ} 50^{\prime} \mathrm{S} 54^{\circ} 30^{\prime} \mathrm{W}$ and thence along the border of Paraguay with Argentina to the point $22^{\circ} 30^{\prime} \mathrm{S} 62^{\circ} 30^{\prime} \mathrm{W}$.
27/171 Sub-Area $13 E$
From the point $32^{\circ} \mathrm{S} 81^{\circ} \mathrm{W}$ through the point $19^{\circ} \mathrm{S} 81^{\circ} \mathrm{W}$, up to the intersection of the coast with the border between Chile and Peru, Bolivia and Argentina, to the point of intersection with $32^{\circ} \mathrm{S}$ and then to the point $32^{\circ} \mathrm{S} 81^{\circ} \mathrm{W}$.

## 27/172 Sub-Area $13 F$

From the point $57^{\circ} \mathrm{S} 81^{\circ} \mathrm{W}$, through the point $32^{\circ} \mathrm{S} 81^{\circ} \mathrm{W}$ to the intersection of $32^{\circ} \mathrm{S}$ with the border between Chile and Argentina, through the points $52^{\circ} \mathrm{S} 67^{\circ} \mathrm{W}, 57^{\circ} \mathrm{S} 67^{\circ} \mathrm{W}, 57^{\circ} \mathrm{S} 40^{\circ} \mathrm{W}$ to the South Pole to the point $57^{\circ} \mathrm{S} 81^{\circ} \mathrm{W}$.

## 27/173 Sub-Area $13 G$

From the point $36^{\circ} \mathrm{S} 55^{\circ} \mathrm{W}$ to the intersection of $32^{\circ} \mathrm{S}$ with the border between Argentina and Chile, then north along the borders of Argentina with Bolivia. Paraguay, Brazil and Uruguay to the point $36^{\circ} \mathrm{S} 55^{\circ} \mathrm{W}$.

## 27/174 Sub-Area 13H

From the point $57^{\circ} \mathrm{S} 90^{\circ} \mathrm{W}$ and through the point $57^{\circ} \mathrm{S} 70^{\circ} \mathrm{W}$ to $52^{\circ} \mathrm{S} 70^{\circ} \mathrm{W}$. Then along the border between Chile and Argentina to its intersection by $32^{\circ} \mathrm{S}$ and through the points $36^{\circ} \mathrm{S} 55^{\circ} \mathrm{W}, 57^{\circ} \mathrm{S} 55^{\circ} \mathrm{W}, 57^{\circ} \mathrm{S} 25^{\circ} \mathrm{W}$ to the South Pole and then to the point $57^{\circ} \mathrm{S} 90^{\circ} \mathrm{W}$.

## 27/175 Sub-Area 13I

From the point $40^{\circ} \mathrm{S} 50^{\circ} \mathrm{W}$ through the point $36^{\circ} \mathrm{S} 55^{\circ} \mathrm{W}$ and along the borders of Uruguay with Argentina and Brazil, then through the point $35^{\circ} \mathrm{S} 45^{\circ} \mathrm{W}$ to the point $40^{\circ} \mathrm{S} 50^{\circ} \mathrm{W}$.

## 27/176 Sub-Area 13J

From the point $15^{\circ} \mathrm{S} 47^{\circ} \mathrm{W}$ through the points $20^{\circ} \mathrm{S} 44^{\circ} \mathrm{W}, 23^{\circ} 19^{\prime} \mathrm{S} 42^{\circ} \mathrm{W}, 29^{\circ} \mathrm{S} 40^{\circ} \mathrm{W}$, $35^{\circ} \mathrm{S} 45^{\circ} \mathrm{W}$, and thence along the borders of Brazil with Uruguay, Argentina, Paraguay and Bolivia to the point $19^{\circ} 52^{\prime} \mathrm{S} 58^{\circ} \mathrm{W}$, then through the point $18^{\circ} \mathrm{S} 57^{\circ} 37^{\prime} \mathrm{W}$ to the point $15^{\circ} \mathrm{S} 47^{\circ} \mathrm{W}$.

## 27/177 Sub-Area 13K

From the point $22^{\circ} 30^{\prime} \mathrm{S} 50^{\circ} 39^{\prime} \mathrm{W}$ and through the points $25^{\circ} \mathrm{S} 45^{\circ} \mathrm{W}, 29^{\circ} \mathrm{S} 40^{\circ} \mathrm{W}$, $20^{\circ} \mathrm{S} 32^{\circ} \mathrm{W}, 00^{\circ} 32^{\circ} \mathrm{W}, 04^{\circ} 24^{\prime} \mathrm{N} 47^{\circ} \mathrm{W}, 04^{\circ} 24^{\prime} \mathrm{N} 50^{\circ} 39^{\prime} \mathrm{W}$ to the point $22^{\circ} 30^{\prime} \mathrm{S} 50^{\circ} 39^{\prime} \mathrm{W}$.

27/178 Sub-Area 13L
From the point $00^{\circ} 32^{\circ} \mathrm{W}$ through the points $00^{\circ} 20^{\circ} \mathrm{W}$, the South Pole, $57^{\circ} \mathrm{S} 55^{\circ} \mathrm{W}$, $36^{\circ} \mathrm{S} 55^{\circ} \mathrm{W}, 40^{\circ} \mathrm{S} 50^{\circ} \mathrm{W}, 20^{\circ} \mathrm{S} 32^{\circ} \mathrm{W}$, to the point $00^{\circ} 32^{\circ} \mathrm{W}$.

27/179 Regional and Domestic Air Route Area - 14 (RDARA-14)
From the South Pole along the $110^{\circ} \mathrm{E}$ meridian to $10^{\circ} \mathrm{S}$. Then through the points $10^{\circ} \mathrm{S} 145^{\circ} \mathrm{E}$, $19^{\circ} \mathrm{S} 153^{\circ} \mathrm{E}, 27^{\circ} \mathrm{S} 160^{\circ} \mathrm{E}$. Then along the $160^{\circ} \mathrm{E}$ meridian to the South Pole.

From the South Pole along the $110^{\circ} \mathrm{E}$ meridian to $19^{\circ} \mathrm{S}$. Then through the points $19^{\circ} \mathrm{S} 118^{\circ} \mathrm{E}$, $24^{\circ} \mathrm{S} 120^{\circ} \mathrm{E}, 24^{\circ} \mathrm{S} 131^{\circ} \mathrm{E}$. Then along the $131^{\circ} \mathrm{E}$ meridian to the South Pole.

27/181 Sub-Area $14 B$
From the point $19^{\circ} \mathrm{S} 110^{\circ} \mathrm{E}$ to the point $10^{\circ} \mathrm{S} 110^{\circ} \mathrm{E}$, thence through $10^{\circ} \mathrm{S} 131^{\circ} \mathrm{E}, 24^{\circ} \mathrm{S} 131^{\circ} \mathrm{E}$, $24^{\circ} \mathrm{S} 120^{\circ} \mathrm{E}, 19^{\circ} \mathrm{S} 118^{\circ} \mathrm{E}$ to the point $19^{\circ} \mathrm{S} 110^{\circ} \mathrm{E}$.

27/182 Sub-Area 14C
From the point $24^{\circ} \mathrm{S} 131^{\circ} \mathrm{E}$ to the point $10^{\circ} \mathrm{S} 131^{\circ} \mathrm{E}$, thence through $10^{\circ} \mathrm{S} 139^{\circ} \mathrm{E}, 24^{\circ} \mathrm{S} 139^{\circ} \mathrm{E}$ to the point $24^{\circ} \mathrm{S} 131^{\circ} \mathrm{E}$

27/183 Sub-Area 14D
From the South Pole along the $131^{\circ} \mathrm{E}$ meridian to $24^{\circ} \mathrm{S}$, then through the points $24^{\circ} \mathrm{S} 139^{\circ} \mathrm{E}$, $27^{\circ} \mathrm{S} 139^{\circ} \mathrm{E}, 27^{\circ} \mathrm{S} 142^{\circ} \mathrm{E}, 34^{\circ} \mathrm{S} 142^{\circ} \mathrm{E}, 34^{\circ} \mathrm{S} 139^{\circ} \mathrm{E}$. Then along the $139^{\circ} \mathrm{E}$ meridian to the South Pole.

## 27/184 Sub-Area 14E

From the point $24^{\circ} \mathrm{S} 139^{\circ} \mathrm{E}$ along the $139^{\circ} \mathrm{E}$ meridian to $10^{\circ} \mathrm{S}$, then through the points $10^{\circ} \mathrm{S} 145^{\circ} \mathrm{E}, 19^{\circ} \mathrm{S} 153^{\circ} \mathrm{E}$ to the point $24^{\circ} \mathrm{S} 139^{\circ} \mathrm{E}$.

## 27/185 Sub-Area 14F

From the point $27^{\circ} \mathrm{S} 139^{\circ} \mathrm{E}$ along the $139^{\circ} \mathrm{E}$ meridian to $24^{\circ} \mathrm{S}$, then through the points $19^{\circ} \mathrm{S} 153^{\circ} \mathrm{E}, 27^{\circ} \mathrm{S} 160^{\circ} \mathrm{E}$ to the point $27^{\circ} \mathrm{S} 139^{\circ} \mathrm{E}$.

## 27/186 Sub-Area 14G

From the South Pole along the $139^{\circ} \mathrm{E}$ meridian to $34^{\circ} \mathrm{S}$, then through the points $34^{\circ} \mathrm{S} 142^{\circ} \mathrm{E}$, $27^{\circ} \mathrm{S} 142^{\circ} \mathrm{E}, 27^{\circ} \mathrm{S} 160^{\circ} \mathrm{E}$. Then along the $160^{\circ} \mathrm{E}$ 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)
27/187 The AFI-MET allotment area is defined by a line drawn from the point $29^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}$, through the points $37^{\circ} \mathrm{N} 03^{\circ} \mathrm{W}, 37^{\circ} \mathrm{N} 36^{\circ} \mathrm{E}, 30^{\circ} \mathrm{N} 35^{\circ} \mathrm{E}, 10^{\circ} \mathrm{N} 52^{\circ} \mathrm{E}, 22^{\circ} \mathrm{S} 60^{\circ} \mathrm{E}, 35^{\circ} \mathrm{S} 35^{\circ} \mathrm{E}$, $35^{\circ} \mathrm{S} 15^{\circ} \mathrm{E}, 08^{\circ} \mathrm{S} 15^{\circ} \mathrm{W}, 12^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}$, to the point $29^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}$.
27/188 The AFI-MET reception area is defined by a line drawn from the point $37^{\circ} \mathrm{N} 03^{\circ} \mathrm{W}$, through the points $37^{\circ} \mathrm{N} 36^{\circ} \mathrm{E}, 30^{\circ} \mathrm{N} 35^{\circ} \mathrm{E}, 10^{\circ} \mathrm{N} 52^{\circ} \mathrm{E}, 10^{\circ} \mathrm{N} 100^{\circ} \mathrm{E}$, the South Pole, the points $29^{\circ} \mathrm{N} 40^{\circ} \mathrm{W}, 29^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}$, to the point $37^{\circ} \mathrm{N} 03^{\circ} \mathrm{W}$.

VOLMET Area - NORTH ATLANTIC (NAT-MET)

27/189 The NAT-MET allotment area is defined by a line drawn from the point $41^{\circ} \mathrm{N} 78^{\circ} \mathrm{W}$, through the points $51^{\circ} \mathrm{N} 55^{\circ} \mathrm{W}, 24^{\circ} \mathrm{N} 50^{\circ} \mathrm{W}, 24^{\circ} \mathrm{N} 74^{\circ} \mathrm{W}$, to the point $41^{\circ} \mathrm{N} 78^{\circ} \mathrm{W}$.

27/190 The NAT-MET reception area is defined by a line drawn from the point $24^{\circ} \mathrm{N} 97^{\circ} \mathrm{W}$, through the points $24^{\circ} \mathrm{N} 85^{\circ} \mathrm{W}, 75^{\circ} \mathrm{N} 85^{\circ} \mathrm{W}, 75^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}, 00^{\circ} 20^{\circ} \mathrm{W}, 00^{\circ} 95^{\circ} \mathrm{W}$, to the point $24^{\circ} \mathrm{N} 97^{\circ} \mathrm{W}$.

## VOLMET Area - EUROPE (EUR-MET)

27/191 The EUR-MET allotment area is defined by a line drawn from the point $33^{\circ} \mathrm{N} 12^{\circ} \mathrm{W}$, through the points $54^{\circ} \mathrm{N} 12^{\circ} \mathrm{W}, 70^{\circ} \mathrm{N} 00^{\circ}, 74^{\circ} \mathrm{N} 40^{\circ} \mathrm{E}, 40^{\circ} \mathrm{N} 36^{\circ} \mathrm{E}, 29^{\circ} \mathrm{N} 35^{\circ} 30^{\prime} \mathrm{E}$, $32^{\circ} \mathrm{N} 13^{\circ} \mathrm{E}$, to the point $33^{\circ} \mathrm{N} 12^{\circ} \mathrm{W}$.
27/192 The EUR-MET reception area is defined by a line drawn from the point $15^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}$, through the points $40^{\circ} \mathrm{N} 50^{\circ} \mathrm{W}, 75^{\circ} \mathrm{N} 50^{\circ} \mathrm{W}, 75^{\circ} \mathrm{N} 45^{\circ} \mathrm{E}, 15^{\circ} \mathrm{N} 45^{\circ} \mathrm{E}$, to the point $15^{\circ} \mathrm{N}$ $20^{\circ} \mathrm{W}$.

## VOLMET Area - MIDDLE EAST (MID-MET)

27/193 The MID-MET allotment area is defined by a line drawn from the point $50^{\circ} \mathrm{N} 80^{\circ} \mathrm{E}$, through the points $29^{\circ} \mathrm{N} 80^{\circ} \mathrm{E}, 27^{\circ} \mathrm{N} 85^{\circ} \mathrm{E}, 16^{\circ} \mathrm{N} 78^{\circ} \mathrm{E}, 22^{\circ} \mathrm{N} 56^{\circ} \mathrm{E}, 16^{\circ} \mathrm{N} 42^{\circ} \mathrm{E}, 30^{\circ} \mathrm{N} 30^{\circ} \mathrm{E}$, $51^{\circ} \mathrm{N} 30^{\circ} \mathrm{E}, 57^{\circ} \mathrm{N} 37^{\circ} \mathrm{E}$, to the point $50^{\circ} \mathrm{N} 80^{\circ} \mathrm{E}$.
27/194 The MID-MET reception area is defined by a line drawn from the point $50^{\circ} \mathrm{N} 80^{\circ} \mathrm{E}$, through the points $50^{\circ} \mathrm{N} 90^{\circ} \mathrm{E}, 35^{\circ} \mathrm{N} 90^{\circ} \mathrm{E}, 27^{\circ} \mathrm{N} 85^{\circ} \mathrm{E}, 16^{\circ} \mathrm{N} 78^{\circ} \mathrm{E}, 22^{\circ} \mathrm{N} 56^{\circ} \mathrm{E}, 16^{\circ} \mathrm{N} 42^{\circ} \mathrm{E}$, $30^{\circ} \mathrm{N} 30^{\circ} \mathrm{E}, 51^{\circ} \mathrm{N} 30^{\circ} \mathrm{E}, 57^{\circ} \mathrm{N} 37^{\circ} \mathrm{E}$, to the point $50^{\circ} \mathrm{N} 80^{\circ} \mathrm{E}$.

## VOLMET Area - NORTH CENTRAL ASIA (NCA-MET)

27/195 The NCA-MET allotment area is defined by a line drawn from the point $76^{\circ} \mathrm{N} 32^{\circ} \mathrm{E}$, through the points $80^{\circ} \mathrm{N} 90^{\circ} \mathrm{E}, 75^{\circ} \mathrm{N} 168^{\circ} \mathrm{W}, 66^{\circ} \mathrm{N} 168^{\circ} \mathrm{W}, 48^{\circ} \mathrm{N} 160^{\circ} \mathrm{E}, 42^{\circ} \mathrm{N} 135^{\circ} \mathrm{E}$, $50^{\circ} \mathrm{N} 130^{\circ} \mathrm{E}, 50^{\circ} \mathrm{N} 90^{\circ} \mathrm{E}, 35^{\circ} \mathrm{N} 70^{\circ} \mathrm{E}, 45^{\circ} \mathrm{N} 30^{\circ} \mathrm{E}, 60^{\circ} \mathrm{N} 20^{\circ} \mathrm{E}$, to the point $76^{\circ} \mathrm{N} 32^{\circ} \mathrm{E}$.

27/196 The NCA-MET reception area is defined by a line drawn from the North Pole, through the points $40^{\circ} \mathrm{N} 168^{\circ} \mathrm{W}, 30^{\circ} \mathrm{N} 140^{\circ} \mathrm{E}, 35^{\circ} \mathrm{N} 70^{\circ} \mathrm{E}, 30^{\circ} \mathrm{N} 20^{\circ} \mathrm{E}$, to the North Pole.

## VOLMET Area - PACIFIC (PAC-MET)

27/197 The PAC-MET allotment area is defined by a line drawn from the point $52^{\circ} \mathrm{N} 132^{\circ} \mathrm{E}$, through the points $63^{\circ} \mathrm{N} 149^{\circ} \mathrm{W}, 38^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}, 50^{\circ} \mathrm{S} 120^{\circ} \mathrm{W}, 50^{\circ} \mathrm{S} 145^{\circ} \mathrm{E}, 28^{\circ} \mathrm{S} 145^{\circ} \mathrm{E}$, $03^{\circ} \mathrm{S} 129^{\circ} \mathrm{E}, 22^{\circ} \mathrm{N} 112^{\circ} \mathrm{E}$ to the point $52^{\circ} \mathrm{N} 132^{\circ} \mathrm{E}$.

27/198 The PAC-MET reception area is defined by a line drawn from the point $60^{\circ} \mathrm{N} 100^{\circ} \mathrm{E}$ through the points $75^{\circ} \mathrm{N} 160^{\circ} \mathrm{W}, 75^{\circ} \mathrm{N} 110^{\circ} \mathrm{W}, 65^{\circ} \mathrm{S} 110^{\circ} \mathrm{W}, 65^{\circ} \mathrm{S} 145^{\circ} \mathrm{E}, 28^{\circ} \mathrm{S} 145^{\circ} \mathrm{E}$, $03^{\circ} \mathrm{S} 129^{\circ} \mathrm{E}, 05^{\circ} \mathrm{N} 80^{\circ} \mathrm{E}, 40^{\circ} \mathrm{N} 80^{\circ} \mathrm{E}$, to the point $60^{\circ} \mathrm{N} 100^{\circ} \mathrm{E}$.

## VOLMET Area - SOUTH EAST ASIA (SEA-MET)

27/199 The SEA-MET allotment area is defined by a line drawn from the point $55^{\circ} \mathrm{N} 75^{\circ} \mathrm{E}$, through the points $55^{\circ} \mathrm{N} 135^{\circ} \mathrm{E}, 45^{\circ} \mathrm{N} 135^{\circ} \mathrm{E}, 35^{\circ} \mathrm{N} 130^{\circ} \mathrm{E}, 10^{\circ} \mathrm{N} 130^{\circ} \mathrm{E}, 10^{\circ} \mathrm{S} 155^{\circ} \mathrm{E}$, $35^{\circ} \mathrm{S} 155^{\circ} \mathrm{E}, 35^{\circ} \mathrm{S} 116^{\circ} \mathrm{E}, 08^{\circ} \mathrm{N} 75^{\circ} \mathrm{E}, 26^{\circ} \mathrm{N} 65^{\circ} \mathrm{E}$, to the point $55^{\circ} \mathrm{N} 75^{\circ} \mathrm{E}$.

27/200 The SEA-MET reception area is defined by a line drawn from the point $55^{\circ} \mathrm{N} 50^{\circ} \mathrm{E}$, through the points $55^{\circ} \mathrm{N} 180^{\circ}, 50^{\circ} \mathrm{S} 180^{\circ}, 50^{\circ} \mathrm{S} 70^{\circ} \mathrm{E}, 08^{\circ} \mathrm{N} 70^{\circ} \mathrm{E}, 08^{\circ} \mathrm{N} 50^{\circ} \mathrm{E}$, to the point $55^{\circ} \mathrm{N} 50^{\circ} \mathrm{E}$.

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VOLMET Area - CARIBBEAN (CAR-MET)
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27/201 The CAR-MET allotment area is defined by a line drawn from the point $30^{\circ} \mathrm{N} 110^{\circ} \mathrm{W}$, through the points $30^{\circ} \mathrm{N} 75^{\circ} \mathrm{W}, 00^{\circ} 50^{\circ} \mathrm{W}$, following the equator to $00^{\circ} 80^{\circ} \mathrm{W}$ to the point $30^{\circ} \mathrm{N} 110^{\circ} \mathrm{W}$.

27/202 The CAR-MET reception area is defined by a line drawn from the point $40^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}$, through the points $40^{\circ} \mathrm{N} 20^{\circ} \mathrm{W}, 25^{\circ} \mathrm{S} 20^{\circ} \mathrm{W}, 25^{\circ} \mathrm{S} 120^{\circ} \mathrm{W}$, to the point $40^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}$.

VOLMET Area - SOUTH AMERICA (SAM-MET)
27/203 The SAM-MET allotment area is defined by a line drawn from the point $15^{\circ} \mathrm{N} 83^{\circ} \mathrm{W}$, through the points $15^{\circ} \mathrm{N} 60^{\circ} \mathrm{W}, 05^{\circ} \mathrm{S} 35^{\circ} \mathrm{W}, 55^{\circ} \mathrm{S} 60^{\circ} \mathrm{W}, 55^{\circ} \mathrm{S} 83^{\circ} \mathrm{W}$, to the point $15^{\circ} \mathrm{N} 83^{\circ} \mathrm{W}$.

27/204 The SAM-MET reception area is defined by a line drawn from the point $30^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}$ through the point $30^{\circ} \mathrm{N} 00^{\circ}$, the South Pole, to the point $30^{\circ} \mathrm{N} 120^{\circ} \mathrm{W}$.

## ARTICLE 4

## World-wide allotment areas

27/205 World-wide Area I
The boundaries of this allotment area comprise those of RDARAs 1,2 and 3.
27/206 World-wide Area II
The boundaries of this allotment area comprise those of RDARAs $10,1112 \mathrm{~A}, 12 \mathrm{~B}, 12 \mathrm{C}$, and 12D.
27/207 World-wide Area III
The boundaries of this allotment area comprise those of RDARAs $6,8,9$ and 14.
27/208 World-wide Area IV
The boundaries of this allotment area comprise those of RDARAs 12E to 12J inclusive and 13 .
27/209 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

## 27/210 Frequency allotment Plan by areas

27/211 NOTE $a$ ) $\quad *=$ 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. 27/218 to 27/231).
27/212 NOTE b) The following list does not include the world-wide common (R) and (OR) frequencies of 3023 kHz and 5680 kHz . The allotment of these frequencies is shown in Article 2.

27/213 (WRC-2000)

| Area | Frequency bands (MHz) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 3.5 | 4.7 | $\begin{gathered} 5.4 \\ \text { (Reg. 2) } \end{gathered}$ | 5.6 | 6.6 | 9 | 10 | 11.3 | 13.3 | 18 |
|  | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz |
| AFI | $\begin{aligned} & 2851 \\ & 2878 \end{aligned}$ | $\begin{aligned} & 3419 \\ & 3425 \\ & 3467 \end{aligned}$ | 4657 |  | $\begin{aligned} & 5493 \\ & 5652 \\ & 5658 \end{aligned}$ | $\begin{aligned} & 6559 \\ & 6574 \\ & 6673 \end{aligned}$ | $\begin{aligned} & \hline 8894 \\ & 8903 \end{aligned}$ |  | $\begin{aligned} & 11300 \\ & 11330 \end{aligned}$ | $\begin{aligned} & 13273 \\ & 13288 \\ & 13294 \end{aligned}$ | 17961 |
| CAR | 2887 | 3455 |  |  | $\begin{aligned} & 5520 \\ & 5550 \end{aligned}$ | $\begin{aligned} & 6577 \\ & 6586 \end{aligned}$ | $\begin{aligned} & 8846 \\ & 8918 \end{aligned}$ |  | $\begin{aligned} & 11387 \\ & 11396 \end{aligned}$ | 13297 | 17907 |
| CEP | 2869 | 3413 | 4657 |  | $\begin{aligned} & 5547 \\ & 5574 \end{aligned}$ | 6673 | 8843 | 10057 | 11282 | 13300 | 17904 |
| CWP | 2998 | 3455 | 4666 |  | $\begin{aligned} & 5652 \\ & 5661 \end{aligned}$ | $\begin{aligned} & 6532 \\ & 6562 \end{aligned}$ | 8903 | 10081 | 11384 | 13300 | 17904 |
| EA | 3016 | $\begin{aligned} & 3485 \\ & 3491 \end{aligned}$ |  |  | $\begin{aligned} & 5655 \\ & 5670 \end{aligned}$ | 6571 | 8897 | 10042 | 11396 | $\begin{array}{ll} 13297 \\ 13303 \\ 13309 \end{array}$ | 17907 |
| EUR |  | 3479 |  |  | 5661 | 6598 |  | 10084 |  | 13288 | 17961 |
| INO |  | 3476 |  |  | 5634 |  | 8879 |  |  | 13306 | 17961 |

(See cont.)
(Cont.)

| Area | Frequency bands <br> (MHz) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 3.5 | 4.7 | $\begin{gathered} 5.4 \\ (\text { Reg. 2) } \end{gathered}$ | 5.6 | 6.6 | 9 | 10 | 11.3 | 13.3 | 18 |
|  | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz |
| MID | $\begin{aligned} & 2944 \\ & 2992 \end{aligned}$ | $\begin{aligned} & 3467 \\ & 3473 \end{aligned}$ | 4669 |  | $\begin{aligned} & 5658 \\ & 5667 \end{aligned}$ | $\begin{aligned} & 6625 \\ & 6631 \end{aligned}$ | $\begin{aligned} & 8918 \\ & 8951 \end{aligned}$ | 10018 | 11375 | $\begin{aligned} & 13288 \\ & 13312 \end{aligned}$ | 17961 |
| NAT | $\begin{aligned} & 2872 \\ & 2889 \\ & 2962 \\ & 2971 \\ & 3016 \end{aligned}$ | 3476 | 4675 |  | $\begin{aligned} & \hline 5598 \\ & 5616 \\ & 5649 \end{aligned}$ | $\begin{aligned} & 6622 \\ & 6628 \end{aligned}$ | $\begin{aligned} & \hline 8825 \\ & 8831 \\ & 8864 \\ & 8879 \\ & 8891 \\ & 8906 \end{aligned}$ |  |  | $\begin{aligned} & 13291 \\ & 13306 \end{aligned}$ | 17946 |
| NCA | $\begin{aligned} & 3004 \\ & 3019 \end{aligned}$ |  | 4678 |  | $\begin{aligned} & 5646 \\ & 5664 \end{aligned}$ | 6592 |  | 10096 |  | $\begin{aligned} & 13303 \\ & 13315 \end{aligned}$ | 17958 |
| NP | 2932 |  |  |  | 5628 | $\begin{aligned} & 6655 \\ & 6661 \end{aligned}$ |  | 10048 | 11330 | 13300 | 17904 |
| SAM | 2944 | 3479 | 4669 |  | 5526 | 6649 | 8855 | $\begin{aligned} & 10024 \\ & 10096 \end{aligned}$ | 11360 | 13297 | 17907 |
| SAT | $\begin{aligned} & 2854 \\ & 2935 \end{aligned}$ | 3452 |  |  | 5565 | 6535 | 8861 |  | 11291 | $\begin{aligned} & 13315 \\ & 13357 \end{aligned}$ | 17955 |
| SEA |  | $\begin{aligned} & 3470 \\ & 3485 \end{aligned}$ |  |  | $\begin{aligned} & 5649 \\ & 5655 \end{aligned}$ | 6556 | 8942 | 10066 | 11396 | $\begin{aligned} & 13309 \\ & 13318 \end{aligned}$ | 17907 |
| SP |  | 3467 |  |  | $\begin{aligned} & 5559 \\ & 5643 \end{aligned}$ |  | 8867 | 10084 | 11327 | 13300 | 17904 |
| 1 |  |  |  |  |  | 6556 |  | 10021 | 11363 |  |  |
| 1B | $\begin{aligned} & 2860^{*} \\ & 2881^{*} \\ & 2890 \end{aligned}$ | $\begin{aligned} & 3458^{*} \\ & 3473^{*} \\ & 3488^{*} \end{aligned}$ |  |  | $\begin{aligned} & 5484 \\ & 5568 \end{aligned}$ | $\begin{aligned} & 6550 \\ & 6595 \end{aligned}$ |  | 10066 |  |  |  |
| 1C | $\begin{aligned} & 2977 \\ & 2983 \end{aligned}$ | $\begin{aligned} & 3464 \\ & 3470 \end{aligned}$ | 4666 |  | $\begin{aligned} & 5577 \\ & 5595 \end{aligned}$ | 6544 | 8840 |  | 11366 |  |  |
| 1D | $\begin{array}{r} \hline 2974 \\ 2980 \\ 2989 \\ \hline \end{array}$ | $\begin{array}{r} 3410 \\ 3416 \\ 3446 \\ \hline \end{array}$ | 4651 |  | $\begin{aligned} & \hline 5622 \\ & 5628 \\ & 5637 \\ & \hline \end{aligned}$ | $\begin{aligned} & 6604 \\ & 6610 \end{aligned}$ | 8828 | 10060 | 11384 |  |  |
| 1E | 2965 | 3491 |  |  | 5583 | 6667 |  | 10036 |  |  |  |
| 2 | $\begin{aligned} & 2938 \\ & 2950 \end{aligned}$ |  | 4696 |  | 5556 | $\begin{aligned} & 6583 \\ & 6601 \end{aligned}$ | $\begin{aligned} & 8846 \\ & 8855 \\ & 8888 \end{aligned}$ | $\begin{aligned} & 10015 \\ & 10045 \end{aligned}$ | $\begin{aligned} & 11297 \\ & 11360 \\ & 11390 \end{aligned}$ | $\begin{aligned} & 13321 \\ & 13357 \end{aligned}$ | 17964 |
| 2A | $\begin{aligned} & 2851^{*} \\ & 2863 \\ & 2869 \\ & 2875 \\ & 2881 \\ & 2887^{*} \\ & 2896 \\ & 2917 \\ & 2926 \\ & \hline \end{aligned}$ | $\begin{aligned} & 3416^{*} \\ & 3422 \\ & 3434 \\ & 3440 \\ & 3455 \end{aligned}$ | $\begin{aligned} & 4657 * \\ & 4672 \\ & 4690 \end{aligned}$ |  | $\begin{aligned} & 5481 \\ & 5490 \\ & 5496 \\ & 5502 \\ & 5523 \\ & 5547 \\ & 5559 \\ & 5604 \end{aligned}$ | $\begin{aligned} & 6526 \\ & 6532 \\ & 6547 \\ & 6553 \\ & 6559 \\ & 6565 \\ & 6574 \\ & 6673 \end{aligned}$ | $\begin{aligned} & 8822^{*} \\ & 8876 \\ & 8909 \\ & 8939 \end{aligned}$ | $\begin{aligned} & 10048 \\ & 10054 \end{aligned}$ | $\begin{aligned} & 11276 \\ & 11285 \\ & 11294 \end{aligned}$ |  |  |


|  | 2932 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 2941 |  |$|$|  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |

* See No. 27/211.
(Cont.)

| Area | Frequency bands (MHz) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 3.5 | 4.7 | $\begin{gathered} 5.4 \\ (\text { Reg. 2) } \end{gathered}$ | 5.6 | 6.6 | 9 | 10 | 11.3 | 13.3 | 18 |
|  | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz |
| 2B | $\begin{aligned} & 2857 \\ & 2869 \\ & 2875 \\ & 2881 \\ & 2887 * \\ & 2896 \\ & 2902 \\ & 2908 \\ & 2914 \\ & 2920 \\ & 2929 \end{aligned}$ | $\begin{array}{ll} \hline & 3401 \\ 3 & 407 \\ 3 & 416 * \\ 3422 \\ 3 & 428 \\ 3449 \end{array}$ | $\begin{aligned} & \hline 4660 \\ & 4672 \\ & 4681 \\ & 4690 \\ & 4693 \end{aligned}$ |  | $\begin{aligned} & \hline 5490 \\ & 5496 \\ & 5502 \\ & 5508 \\ & 5520 \\ & 5526 \\ & 5550 \\ & 5574 \\ & 5595 \\ & 5607 \\ & 5613 \\ & 5619 \end{aligned}$ | $\begin{aligned} & 6526 \\ & 6532 \\ & 6562 \\ & 6568 \\ & 6577 \\ & 6655 \\ & 6661 \\ & 6667 \end{aligned}$ | $\begin{aligned} & 8819 \\ & 8834 \\ & 8864 \end{aligned}$ | $\begin{aligned} & 10009 \\ & 10024 \end{aligned}$ |  |  |  |
| 2C | $\begin{aligned} & 2857 \\ & 2863 \\ & 2866 \\ & 2884 \\ & 2893 \\ & 2902 \\ & 2908 \\ & 2914 \\ & 2920 \\ & 2926 \\ & 2932 \end{aligned}$ | $\begin{aligned} & 3401 \\ & 3407 \\ & 3428 \\ & 3434 \\ & 3440 \\ & 3449 \\ & 3455 \end{aligned}$ | $\begin{aligned} & 4657^{*} \\ & 4660 \\ & 4681 \\ & 4693 \end{aligned}$ |  | $\begin{aligned} & 5481 \\ & 5487 \\ & 5508 \\ & 5514 \\ & 5520 \\ & 5556 \\ & 5550 \\ & 5562 \\ & 5574 \\ & 5586 \\ & 5604 \end{aligned}$ | $\begin{aligned} & 6535 \\ & 6541 \\ & 6547 \\ & 6553 \\ & 6562 \\ & 6568 \\ & 6577 \\ & 6586 \end{aligned}$ | $\begin{aligned} & 8819 \\ & 8834 \\ & 8882 \\ & 8939 \end{aligned}$ |  | 11276 11333 11372 |  |  |
| 3 | $\begin{aligned} & 2893 \\ & 2935 \end{aligned}$ |  | 4693 |  | 5556 | $\begin{aligned} & 6583 \\ & 6589 \end{aligned}$ | $\begin{aligned} & 8846 \\ & 8954 \end{aligned}$ | 10087 | 11318 <br> 11336 <br> 11360 | $\begin{aligned} & 13267 \\ & 13321 \end{aligned}$ | 17952 |
| 3A | $\begin{aligned} & 2854 \\ & 2860 \\ & 2869 \\ & 2875 \\ & 2881 \\ & 2887 * \\ & 2896 \\ & 2905 \\ & 2911^{*} \\ & 2923^{*} \\ & 2959 \end{aligned}$ | $\begin{array}{ll} \hline 3404 \\ 3 & 416 * \\ 3 & 422 \\ 3 & 431 * \\ 3 & 443 \\ 3452 \end{array}$ | $\begin{aligned} & 4672 \\ & 4684 \\ & 4690 \end{aligned}$ |  | $\begin{aligned} & 5484 \\ & 5490 \\ & 5496 \\ & 5502 \\ & 5511 \\ & 5517 \\ & 5568 \\ & 5580 \\ & 5601 \\ & 5 \end{aligned}$ | $\begin{aligned} & 6526 \\ & 6532 \\ & 6538 \\ & 6544 \\ & 6550 \\ & 6556 \\ & 6607 \\ & 6613 \\ & 6619 \\ & 6649 \end{aligned}$ | $\begin{aligned} & 8837 \\ & 8861 \\ & 8900 \\ & 8942 \end{aligned}$ | $\begin{aligned} & 10045 \\ & 10057 \end{aligned}$ |  |  |  |
| 3B | $\begin{array}{r} 2851 \\ 2854 \\ 2872 \\ \hline \end{array}$ | $\begin{array}{r} 3401 \\ 3407 \\ 3413 \\ \hline \end{array}$ | $\begin{aligned} & 4657 \\ & 4681 \end{aligned}$ |  | $\begin{array}{r} 5493 \\ 5499 \\ 5505 \\ \hline \end{array}$ | $\begin{array}{r} 6529 \\ 6538 \\ 6544 \\ \hline \end{array}$ | $\begin{aligned} & 8822 \\ & 8852 \\ & 8861 \\ & \hline \end{aligned}$ | $\begin{aligned} & 10024 \\ & 10039 \end{aligned}$ | $\begin{aligned} & 11285 \\ & 11291 \end{aligned}$ |  |  |


| 2878 | 3419 |  |  | 5514 | 6559 | 8879 |  | 11327 |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | $2884^{*}$ | 3425 |  |  | 5520 | 6568 | 8957 |  | 11372 |  |
| 2902 | $3431^{*}$ |  |  | 556 | 6577 |  |  |  |  |  |
| 2908 | $3437 *$ |  |  | 550 | 6595 |  |  |  |  |  |
| 2914 | 3443 |  |  | 5582 | 6625 |  |  |  |  |  |
| $2968^{*}$ |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | (See cont.) |  |  |  |  |  |  |  |  |  |

(Cont.)

| Area | Frequency bands (MHz) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 3.5 | 4.7 | $\begin{gathered} 5.4 \\ (\text { Reg. 2) } \end{gathered}$ | 5.6 | 6.6 | 9 | 10 | 11.3 | 13.3 | 18 |
|  | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz |
| 3C | $\begin{aligned} & 2851 \\ & 2860 \\ & 2866^{*} \\ & 2878 \\ & 2905 \\ & 2950 \\ & 2974 \\ & 2980 \\ & 2986 \\ & \hline \end{aligned}$ | $\begin{aligned} & 3404 \\ & 3410 \\ & 3419 \\ & 3425 \\ & 3452 \end{aligned}$ | 4684 |  | $\begin{aligned} & 5484 \\ & 5514 \\ & 5562 \\ & 5568 \\ & 5586 \\ & 5637 \\ & 5643 \end{aligned}$ | $\begin{aligned} & \hline 6550 \\ & 6556 \\ & 6595 \\ & 6658 \\ & 6664 \\ & 6670 \end{aligned}$ | $\begin{aligned} & 8837 \\ & 8852 \\ & 8894 \\ & 8915 \end{aligned}$ | 10039 | $\begin{aligned} & 11291 \\ & 11303 \\ & 11324 \\ & 11378 \end{aligned}$ |  |  |
| 4 |  |  |  |  |  | 6565 | 8873 |  |  | 13300 | 17904 |
| 4A | $\begin{aligned} & 2926 * \\ & 2953 \end{aligned}$ | $\begin{aligned} & 3437 \\ & 3491 \end{aligned}$ | 4 672* |  | $\begin{aligned} & 5547 \\ & 5559 \end{aligned}$ | $\begin{aligned} & 6526 \\ & 6532 \\ & 6616 \end{aligned}$ | $\begin{aligned} & 8816 \\ & 8837 \\ & 8858 \end{aligned}$ | $\begin{aligned} & 10039 \\ & 10081 \end{aligned}$ | $\begin{aligned} & 11282 \\ & 11318 \end{aligned}$ |  |  |
| 4B | $\begin{aligned} & 2866 \\ & 2893 \end{aligned}$ | 3443 |  |  | $\begin{aligned} & 5481 \\ & 5574 \\ & 5604 \end{aligned}$ | $\begin{aligned} & 6553 \\ & 6577 \\ & 6598 \end{aligned}$ |  | 10063 | 11324 |  |  |
| 5 |  |  |  |  |  |  | $\begin{aligned} & 8870 \\ & 8885 \end{aligned}$ | 10012 | $\begin{aligned} & 11312 \\ & 11327 \end{aligned}$ | 13354 | $\begin{array}{\|l\|} \hline 17949 \\ 17967 \end{array}$ |
| 5A | 2986 | 3452 |  |  | $\begin{aligned} & 5577 \\ & 5583 \end{aligned}$ | $\begin{aligned} & 6544 \\ & 6664 \end{aligned}$ | $\begin{aligned} & 8822 \\ & 8915 \end{aligned}$ |  | 11288 |  |  |
| 5B | $\begin{aligned} & 2911 \\ & 2968 \end{aligned}$ | $\begin{aligned} & 3431 \\ & 3488 \end{aligned}$ |  |  | $\begin{aligned} & 5511 \\ & 5568 \\ & 5625 \end{aligned}$ | $\begin{aligned} & 6550 \\ & 6595 \end{aligned}$ | 8912 | 10093 |  |  |  |
| 5C | 2905 | 3452 |  |  | 5583 | 6544 | 8822 |  |  |  |  |
| 5D | $\begin{aligned} & 2899 \\ & 2971 \end{aligned}$ | 3482 |  |  | $\begin{aligned} & 5526 \\ & 5550 \end{aligned}$ | $\begin{aligned} & 6535 \\ & 6547 \end{aligned}$ | 8843 | 10048 |  |  |  |
| 6 |  |  |  |  |  |  | 8840 |  | 11381 | 13291 | 17943 |
| 6A | $\begin{aligned} & 2872 \\ & 2923 \\ & 2947 \\ & 3001 \\ & \hline \end{aligned}$ | 3479 | $\begin{aligned} & \hline 4657 * \\ & 4675 \end{aligned}$ |  | $\begin{aligned} & \hline 5484 \\ & 5580 \\ & 5601 \end{aligned}$ | $\begin{aligned} & \hline 6607 \\ & 6613 \\ & 6658 \end{aligned}$ | $\begin{aligned} & \hline 8891 \\ & 8906 \\ & 8948 \end{aligned}$ |  | $\begin{aligned} & 11321 \\ & 11357 \end{aligned}$ |  |  |
| 6B | $\begin{aligned} & 2857 \\ & 2920 \end{aligned}$ | $\begin{aligned} & 3479 \\ & 3488 \end{aligned}$ |  |  | $\begin{aligned} & 5502 \\ & 5595 \\ & 5625 \end{aligned}$ | $\begin{aligned} & \hline 6607 \\ & 6613 \\ & 6619 \\ & \hline \end{aligned}$ | $\begin{aligned} & 8864 \\ & 8885 \end{aligned}$ | $\begin{aligned} & 10021 \\ & 10093 \end{aligned}$ | $\begin{aligned} & 11339 \\ & 11366 \end{aligned}$ |  | 17955 |
| 6C | $\begin{aligned} & 2881 \\ & 2956 \end{aligned}$ | 3473 | 4651 |  | $\begin{aligned} & 5550 \\ & 5580 \end{aligned}$ | $\begin{aligned} & 6544 \\ & 6631 \end{aligned}$ | $\begin{aligned} & 8834 \\ & 8918 \end{aligned}$ | 10015 |  |  |  |
| 6D | $\begin{aligned} & 2866 \\ & 2884 \end{aligned}$ | 3416 |  |  | $\begin{aligned} & \hline 5490 \\ & 5520 \\ & 5568 \\ & 5574 \\ & 5631 \end{aligned}$ | $\begin{aligned} & 6550 \\ & 6568 \\ & 6577 \\ & 6595 \end{aligned}$ | $\begin{aligned} & 8882 \\ & 8957 \end{aligned}$ |  | $\begin{aligned} & 11309 \\ & 11372 \end{aligned}$ |  |  |

(See cont.)
(Cont.)

| Area | Frequency bands (MHz) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 3.5 | 4.7 | $\begin{gathered} 5.4 \\ (\text { Reg. 2) } \end{gathered}$ | 5.6 | 6.6 | 9 | 10 | 11.3 | 13.3 | 18 |
|  | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz |
| 6E | $\begin{aligned} & 2854 \\ & 2872 \\ & 2917 \\ & 3001 \end{aligned}$ | 3443 | $\begin{aligned} & 4657 * \\ & 4675 \end{aligned}$ |  | $\begin{aligned} & 5514 \\ & 5526 \\ & 5550 \end{aligned}$ | $\begin{aligned} & 6583 \\ & 6655 \\ & 6661 \end{aligned}$ | $\begin{aligned} & \hline 8861^{*} \\ & 8906 \\ & 8909 \end{aligned}$ |  | $\begin{aligned} & 11357 \\ & 11363 \end{aligned}$ |  |  |
| 6F | $\begin{aligned} & 2926 \\ & 2941 \end{aligned}$ | $\begin{aligned} & 3434 \\ & 3440 \end{aligned}$ |  |  | $\begin{aligned} & 5496 \\ & 5508 \end{aligned}$ | $\begin{aligned} & 6526 \\ & 6667 \end{aligned}$ | $\begin{aligned} & 8864 \\ & 8939 \end{aligned}$ | 10060 | $\begin{aligned} & 11279 \\ & 11366 \end{aligned}$ |  |  |
| 6G | 2 8 $_{2} 9^{*}$ $2875^{*}$ 2890 $2896^{*}$ 2899 $292^{*}$ $2911^{*}$ $2917^{*}$ 2938 2953 2962 $2968^{*}$ 2971 2977 2983 2989 2995 | $\begin{array}{ll} \hline 3 & 413 * \\ 3 & 422^{*} \\ 3 & 431^{*} \\ 3 & 437 \\ 3 & 446 \\ 3 & 449^{*} \\ 3 & 464 \\ 3 & 482 \end{array}$ | $\begin{aligned} & \hline 4651^{*} \\ & 4663^{*} \\ & 4669^{*} \\ & 4672^{*} \\ & 4690^{*} \\ & 4696^{*} \end{aligned}$ |  |  | $\begin{aligned} & \hline 6529 \\ & 6535 \\ & 6541 \\ & 6547 \\ & 6553 \\ & 6559 \\ & 6565 \\ & 6574 \\ & 6580 \\ & 6586 \\ & 6598 \\ & 6604 \\ & 6610 \\ & 6616 \\ & 6622 \\ & 6628 \\ & 6634 \\ & 6649 \\ & 6652 \\ & 6673 \\ & 6682 \end{aligned}$ | $\begin{aligned} & 8816 \\ & 8825 \\ & 8831 \\ & 8843 \\ & 8858 \\ & 8867 \\ & 8870^{*} \\ & 8873 \\ & 8888^{*} \\ & 8912^{*} \\ & 8960 \end{aligned}$ |  | 11 276* <br> 11 282* <br> 11288 <br> 11 294* <br> 11 300* <br> 11306 <br> 11315 <br> 11369 | $\begin{aligned} & 13270 \\ & 13276 \end{aligned}$ | 17913 |
| 7 |  |  |  |  | 5508 | 6586 | 8888 |  | 11285 | 13354 |  |
| 7B | $\begin{aligned} & 2863 \\ & 2965 \end{aligned}$ | 3455 |  |  | $\begin{aligned} & 5577 \\ & 5583 \end{aligned}$ | 6652 | 8906 | 10009 |  |  |  |
| 7C | 2950 | 3407 |  |  | 5592 | $\begin{aligned} & 6568 \\ & 6604 \end{aligned}$ | 8834 | 10081 | 11294 |  |  |
| 7D | 2998 |  |  |  | 5481 |  |  | 10096 |  |  |  |
| 7E | 2887 | 3485 |  |  | 5520 | $\begin{aligned} & 6580 \\ & 6628 \end{aligned}$ | 8864 |  | 11306 |  |  |
| 7F | 2956 | 3461 |  |  | $\begin{aligned} & 5547 \\ & 5568 \end{aligned}$ | 6622 | $\begin{aligned} & 8846 \\ & 8960 \end{aligned}$ |  |  |  |  |
| 9 |  |  | 4696 |  | 5583 | 6553 | $\begin{aligned} & 8846 \\ & 8852 \end{aligned}$ | 10018 | 11339 |  |  |

(See cont.)
(Cont.)

| Area | Frequency bands (MHz) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 3.5 | 4.7 | $\begin{gathered} 5.4 \\ \text { (Reg. 2) } \end{gathered}$ | 5.6 | 6.6 | 9 | 10 | 11.3 | 13.3 | 18 |
|  | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz |
| 9B | $\begin{aligned} & 2860 \\ & 2905 \\ & 2929^{*} \end{aligned}$ | $\begin{aligned} & 3401 * \\ & 3419 \\ & 3425 \\ & 3476 * \end{aligned}$ | 4660 |  | $\begin{aligned} & 5484 \\ & 5508 \\ & 5523 \\ & 5565 \end{aligned}$ | $\begin{aligned} & 6538 \\ & 6547 \\ & 6598 \\ & 6622 \end{aligned}$ | $\begin{aligned} & 8819 \\ & 8837 \\ & 8861 \\ & 8906 \end{aligned}$ | $\begin{aligned} & 10009 \\ & 10024 \\ & 10039 \end{aligned}$ | 11393 |  |  |
| 9C | 2851 | $\begin{aligned} & 3404 \\ & 3461 \end{aligned}$ | 4675 |  | 5481 | 6580 | 8873 | 10042 | $\begin{aligned} & 11279 \\ & 11312 \end{aligned}$ |  |  |
| 9D | 3016 | 3404 |  |  | 5592 | 6535 | 8873 |  | 11312 |  |  |
| 10 |  |  | 4696 | 5454 | 5604 | 6553 | $\begin{aligned} & 8819 \\ & 8834 \end{aligned}$ | $\begin{aligned} & 10006 \\ & 10012 \end{aligned}$ | $\begin{aligned} & 11333 \\ & 11390 \end{aligned}$ | 13285 | 17910 |
| 10A | $\begin{aligned} & \hline 2866 \\ & 2875 \\ & 2911 \\ & 2944 \\ & 2956 \\ & 2992 \end{aligned}$ | $\begin{aligned} & 3449 \\ & 3470 \end{aligned}$ |  | $\begin{aligned} & 5472 \\ & 5475 \end{aligned}$ | $\begin{aligned} & \hline 5484 \\ & 5490 \\ & 5496 \\ & 5565 \\ & 5631 \end{aligned}$ | $\begin{aligned} & 6535 \\ & 6580 \\ & 6604 \end{aligned}$ | $\begin{aligned} & 8855 \\ & 8876 \end{aligned}$ | 10066 |  |  |  |
| 10B | $\begin{aligned} & 2854 \\ & 2860 \end{aligned}$ | $\begin{aligned} & 3404 \\ & 3467 \\ & 3488 \end{aligned}$ | $\begin{aligned} & 4651 \\ & 4666 \\ & 4681 \\ & 4690 \\ & 4693 \end{aligned}$ | $\begin{aligned} & 5460 \\ & 5466 \end{aligned}$ | $\begin{aligned} & 5553 \\ & 5568 \\ & 5583 \end{aligned}$ | $\begin{aligned} & 6547 \\ & 6574 \\ & 6598 \end{aligned}$ | $\begin{aligned} & 8837 \\ & 8903 \\ & 8939 \end{aligned}$ |  |  |  |  |
| 10C | $\begin{aligned} & 2926 \\ & 2965 \end{aligned}$ | 3491 | $\begin{aligned} & 4660 \\ & 4669 \end{aligned}$ | 5457 | $\begin{aligned} & 5481 \\ & 5487 \\ & 5502 \\ & 5562 \\ & 5595 \end{aligned}$ | $\begin{aligned} & 6541 \\ & 6556 \\ & 6568 \end{aligned}$ | 8867 |  |  |  |  |
| 10D | $\begin{aligned} & 2893 \\ & 2935 \end{aligned}$ | $\begin{aligned} & 3419 \\ & 3425 \\ & 3458 \end{aligned}$ | $\begin{aligned} & 4666 \\ & 4669 \\ & 4678 \end{aligned}$ | $\begin{aligned} & 5472 \\ & 5475 \end{aligned}$ | $\begin{aligned} & \hline 5484 \\ & 5490 \\ & 5496 \\ & 5586 \\ & 5625 \end{aligned}$ | $\begin{aligned} & 6535 \\ & 6544 \\ & 6562 \end{aligned}$ | $\begin{aligned} & 8858 \\ & 8900 \end{aligned}$ |  |  |  |  |
| 10E | $\begin{aligned} & 2869 \\ & 2944 \\ & 2992 \end{aligned}$ | $\begin{aligned} & 3446 \\ & 3473 \end{aligned}$ | $\begin{aligned} & 4651 \\ & 4666 \\ & 4684 \end{aligned}$ | 5460 | $\begin{aligned} & 5481 \\ & 5559 \\ & 5577 \end{aligned}$ | $\begin{aligned} & 6547 \\ & 6598 \end{aligned}$ | $\begin{aligned} & 8843 \\ & 8954 \end{aligned}$ |  | 11276 |  |  |
| 10F | 2950 |  | 4663 | 5451 | 5526 | 6673 | 8945 | 10042 |  |  |  |
| 11B | $\begin{aligned} & 2851 \\ & 2878 \\ & 3004 \\ & 3019 \end{aligned}$ | $\begin{aligned} & 3410 \\ & 3428 \\ & 3434 \\ & 3443 \end{aligned}$ | 4672 | $\begin{aligned} & 5451 \\ & 5463 \\ & 5469 \end{aligned}$ | $\begin{aligned} & 5508 \\ & 5514 \\ & 5523 \\ & 5571 \end{aligned}$ | $\begin{aligned} & 6538 \\ & 6550 \\ & 6559 \\ & 6565 \end{aligned}$ | $\begin{aligned} & 8822 \\ & 8885 \\ & 8912 \end{aligned}$ | $\begin{aligned} & 10045 \\ & 10093 \end{aligned}$ | $\begin{aligned} & 11288 \\ & 11306 \end{aligned}$ | 13312 | 17964 |
| 12 |  | 3440 |  |  | 5568 |  |  | 10054 |  |  | 17901 |
| 12A | 2950 |  |  |  | 5604 |  |  |  |  |  |  |

(See cont.)
(Cont.)

| Area | Frequency bands (MHz) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 3.5 | 4.7 | $\begin{gathered} 5.4 \\ \text { (Reg. 2) } \end{gathered}$ | 5.6 | 6.6 | 9 | 10 | 11.3 | 13.3 | 18 |
|  | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz |
| 12C | $\begin{aligned} & 2920 \\ & 2980 \end{aligned}$ | $\begin{aligned} & 3401 \\ & 3464 \end{aligned}$ | 4693 | 5460 | $\begin{aligned} & 5484 \\ & 5490 \\ & 5496 \\ & 5502 \\ & 5589 \\ & 5613 \end{aligned}$ | $\begin{aligned} & 6535 \\ & 6571 \\ & 6592 \\ & 6622 \\ & 6628 \end{aligned}$ | $\begin{aligned} & 8816 \\ & 8948 \\ & 8957 \end{aligned}$ | $\begin{aligned} & 10021 \\ & 10039 \end{aligned}$ | 11324 |  |  |
| 12D |  | 3407 |  |  | 5562 | 6673 | 8876 | 10015 |  |  |  |
| 12E | $\begin{aligned} & \hline 2860 \\ & 2956 \\ & 2998 \end{aligned}$ | $\begin{aligned} & 3461 \\ & 3488 \end{aligned}$ | 4681 | $\begin{aligned} & 5454 \\ & 5475 \end{aligned}$ | $\begin{aligned} & 5481 \\ & 5487 \\ & 5583 \\ & 5595 \\ & 5604 \end{aligned}$ | $\begin{aligned} & 6547 \\ & 6553 \\ & 6598 \end{aligned}$ | $\begin{aligned} & 8852 \\ & 8873 \end{aligned}$ | $\begin{aligned} & 10063 \\ & 10090 \end{aligned}$ | $\begin{aligned} & 11381 \\ & 11393 \end{aligned}$ |  |  |
| 12F | $\begin{aligned} & 2893 \\ & 2956 \\ & 2965 \\ & 2998 \end{aligned}$ | $\begin{aligned} & 3461 \\ & 3488 \end{aligned}$ |  | $\begin{aligned} & 5451 \\ & 5475 \end{aligned}$ | $\begin{aligned} & 5508 \\ & 5556 \\ & 5583 \\ & 5604 \end{aligned}$ | $\begin{aligned} & 6532 \\ & 6553 \end{aligned}$ | $\begin{aligned} & 8873 \\ & 8894 \end{aligned}$ | 10090 | 11297 |  |  |
| 12G | $\begin{aligned} & 2875 \\ & 2956 \\ & 2998 \end{aligned}$ | $\begin{aligned} & 3461 \\ & 3488 \end{aligned}$ |  |  | $\begin{aligned} & 5484 \\ & 5523 \\ & 5559 \\ & 5646 \end{aligned}$ | $\begin{aligned} & 6526 \\ & 6616 \end{aligned}$ |  |  |  |  |  |
| 12H | $\begin{aligned} & 2956 \\ & 2998 \end{aligned}$ | $\begin{aligned} & 3461 \\ & 3488 \end{aligned}$ |  | 5451 | 5583 |  |  |  |  |  |  |
| 12J | $\begin{aligned} & 2860 \\ & 2902 \\ & 2926 \\ & 2965 \end{aligned}$ | 3419 |  |  | $\begin{aligned} & 5481 \\ & 5496 \\ & 5619 \end{aligned}$ | $\begin{aligned} & 6535 \\ & 6547 \end{aligned}$ | 8954 |  | $\begin{aligned} & 11381 \\ & 11384 \end{aligned}$ |  |  |
| 13 |  |  |  |  |  |  |  |  |  | 13318 | 17913 |
| 13A |  |  |  |  |  |  |  | 10048 |  |  | 17967 |
| 13B |  |  |  |  |  |  |  | 10048 |  |  | 17967 |
| 13C | $\begin{aligned} & 2863 \\ & 2869 \\ & 2992 \end{aligned}$ | $\begin{aligned} & 3413 \\ & 3458 \\ & 3473 \end{aligned}$ |  |  | $\begin{aligned} & 5490 \\ & 5514 \\ & 5553 \\ & 5571 \\ & 5577 \end{aligned}$ | $\begin{aligned} & 6541 \\ & 6556 \\ & 6562 \\ & 6568 \\ & 6580 \end{aligned}$ | $\begin{aligned} & 8819 \\ & 8834 \\ & 8843 \\ & 8939 \end{aligned}$ | 10042 | $\begin{aligned} & 11327 \\ & 11375 \end{aligned}$ | 13309 |  |
| 13D | $\begin{aligned} & 2914 \\ & 2983 \end{aligned}$ | $\begin{aligned} & 3425 \\ & 3467 \end{aligned}$ | 4660 | 5460 | 5562 | $\begin{aligned} & 6622 \\ & 6628 \\ & 6673 \end{aligned}$ | $\begin{aligned} & 8867 \\ & 8912 \\ & 8957 \end{aligned}$ | 10084 | 11318 |  |  |
| 13E | 2851 | 3491 | $\begin{aligned} & 4651 \\ & 4663 \end{aligned}$ |  | $\begin{aligned} & \hline 5481 \\ & 5583 \\ & 5604 \\ & \hline \end{aligned}$ | $\begin{aligned} & 6553 \\ & 6577 \end{aligned}$ | 8858 |  | 11303 |  | 17967 |


| 13 F | 2851 | 3446 | 4651 | 5454 | 5481 | 6547 | 8831 | 10081 | 11321 |  | 17967 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 2956 | 3476 | 4663 |  | 5583 | 6553 | 8858 |  | 11330 |  |  |
|  | 2998 |  |  |  | 5604 |  | 8864 |  |  |  |  |

(See cont.)
(Cont.)

| Area | Frequency bands (MHz) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 3.5 | 4.7 | $\begin{gathered} 5.4 \\ (\text { Reg. 2) } \end{gathered}$ | 5.6 | 6.6 | 9 | 10 | 11.3 | 13.3 | 18 |
|  | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz |
| 13G | $\begin{aligned} & 2872 \\ & 2971 \\ & 3016 \end{aligned}$ | $\begin{aligned} & 3434 \\ & 3470 \end{aligned}$ | 4675* | $\begin{aligned} & 5469 \\ & 5475 \end{aligned}$ | 5574 | $\begin{aligned} & 6586 \\ & 6613 \end{aligned}$ | $\begin{aligned} & 8822 \\ & 8885 \\ & 8900 \end{aligned}$ | $\begin{aligned} & 10006 \\ & 10021 \\ & 10036 \\ & \hline \end{aligned}$ | 11369 |  |  |
| 13H | $\begin{aligned} & 2899 \\ & 2965 \end{aligned}$ | $\begin{aligned} & 3455 \\ & 3485 \end{aligned}$ | 4657 | $\begin{aligned} & 5463 \\ & 5472 \end{aligned}$ | $\begin{aligned} & 5484 \\ & 5547 \end{aligned}$ | 6598 | $\begin{aligned} & 8825 \\ & 8906 \end{aligned}$ | $\begin{aligned} & 10036 \\ & 10045 \end{aligned}$ | $\begin{aligned} & 11282 \\ & 11300 \end{aligned}$ | 13267 |  |
| 13I | $\begin{aligned} & 2860 \\ & 2878 \\ & 2887 \end{aligned}$ | 3419 | $\begin{aligned} & 4678 \\ & 4693 \end{aligned}$ | $\begin{aligned} & 5451 \\ & 5466 \end{aligned}$ | $\begin{aligned} & 5496 \\ & 5523 \end{aligned}$ | 6574 | 8873 | 10051 |  |  |  |
| 13J | $\begin{aligned} & 2857 \\ & 2863 \\ & 2878 \\ & 2890 \\ & 2920 \end{aligned}$ | $\begin{aligned} & 3410 \\ & 3428 \\ & 3458 \end{aligned}$ | $\begin{aligned} & 4684 \\ & 4696 \end{aligned}$ | $\begin{aligned} & 5451 \\ & 5454 \end{aligned}$ | $\begin{aligned} & 5559 \\ & 5568 \\ & 5577 \end{aligned}$ | $\begin{aligned} & 6550 \\ & 6559 \\ & 6580 \end{aligned}$ | $\begin{aligned} & 8816 \\ & 8843 \end{aligned}$ |  | 11276 |  |  |
| 13K | $\begin{aligned} & 2863 \\ & 2932 \\ & 3004 \\ & 3019 \end{aligned}$ | $\begin{aligned} & 3401 \\ & 3458 \\ & 3464 \end{aligned}$ | $\begin{aligned} & 4663 \\ & 4672 \end{aligned}$ | 5463 | $\begin{aligned} & 5481 \\ & 5547 \\ & 5577 \\ & 5604 \end{aligned}$ | $\begin{aligned} & 6547 \\ & 6553 \\ & 6580 \end{aligned}$ | $\begin{aligned} & 8843 \\ & 8849 \\ & 8945 \end{aligned}$ | $\begin{aligned} & 10009 \\ & 10018 \\ & 10042 \\ & 10060 \end{aligned}$ | $\begin{aligned} & 11339 \\ & 11366 \end{aligned}$ | 13309 |  |
| 13M | $\begin{aligned} & 2908 \\ & 2977 \end{aligned}$ | $\begin{aligned} & 3437 \\ & 3449 \end{aligned}$ | $\begin{aligned} & 4660 \\ & 4690 \end{aligned}$ | 5463 | 5502 | $\begin{aligned} & 6574 \\ & 6628 \end{aligned}$ | $\begin{aligned} & 8837 \\ & 8867 \\ & 8903 \\ & \hline \end{aligned}$ | 10066 | 11378 |  |  |
| 13 N | 2986 | 3443 |  | 5457 | 5508 | 6604 | 8828 | 10093 |  |  |  |
| 14 | $\begin{aligned} & 2851 \\ & 2878 \end{aligned}$ | $\begin{aligned} & 3446 \\ & 3461 \\ & 3479 \end{aligned}$ |  |  | $\begin{aligned} & 5526 \\ & 5604 \end{aligned}$ | $\begin{aligned} & 6580 \\ & 6628 \end{aligned}$ | $\begin{aligned} & 8822 \\ & 8855 \\ & 8870 \end{aligned}$ | $\begin{aligned} & 10045 \\ & 10087 \end{aligned}$ | 11360 | 13264 | 17946 |
| 14A | 2950 | 3413 | 4678* |  |  | $\begin{aligned} & 6547 \\ & 6553 \end{aligned}$ | $\begin{aligned} & 8816 \\ & 8894 \end{aligned}$ |  |  |  |  |
| 14B |  | 3488 | 4 684* |  |  | $\begin{aligned} & 6535 \\ & 6604 \\ & 6673 \\ & \hline \end{aligned}$ | $\begin{aligned} & 8900 \\ & 8954 \end{aligned}$ |  |  |  |  |
| 14C | 2887 | 3452 | 4 684* |  |  | $\begin{aligned} & 6541 \\ & 6586 \end{aligned}$ | $\begin{aligned} & 8885 \\ & 8912 \end{aligned}$ |  |  |  |  |
| 14D | 2950 | 3407 | 4 693* |  | 5481 | $\begin{aligned} & 6559 \\ & 6574 \end{aligned}$ | $\begin{aligned} & 8843 \\ & 8858 \end{aligned}$ |  |  |  |  |
| 14E |  | 3413 |  |  |  | $\begin{aligned} & 6565 \\ & 6616 \end{aligned}$ | $\begin{aligned} & 8891 \\ & 8945 \end{aligned}$ |  |  |  |  |
| 14F |  | 3488 |  |  |  | $\begin{aligned} & 6526 \\ & 6610 \end{aligned}$ | $\begin{aligned} & 8825 \\ & 8831 \end{aligned}$ |  |  |  |  |


| 14 G | 2869 <br> 2944 |  | $4678^{*}$ |  | 5481 <br> 5550 <br> 5580 |  | 8876 <br> 8957 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| VAFI | 2860 | 3404 |  |  | 5499 | 6538 | 8852 | 10057 |  | 13261 |  |
| VCAR | 2950 |  |  |  | 5580 |  |  |  | 11315 |  |  |

(See cont.)
(Cont.)

| Area | Frequency bands <br> (MHz) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 3.5 | 4.7 | $\begin{gathered} 5.4 \\ \text { (Reg. 2) } \end{gathered}$ | 5.6 | 6.6 | 9 | 10 | 11.3 | 13.3 | 18 | 22 |
|  | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz | kHz |
| VEUR | 2998 | 3413 |  |  | 5640 | 6580 | 8957 |  | 11378 | 13264 |  |  |
| VMID | 2956 |  |  |  | 5589 |  | 8945 |  |  | 11393 |  |  |
| VNAT | 2905 | 3485 |  |  | 5592 | 6604 | 8870 | 10051 |  | $\begin{aligned} & 13270 \\ & 13276 \end{aligned}$ |  |  |
| VNCA |  | 3461 | 4663 |  | 5676 |  |  | 10090 |  | 13279 |  |  |
| VPAC | 2863 |  |  |  |  | 6679 | 8828 |  |  | 13282 |  |  |
| VSAM | 2881 |  |  |  | 5601 |  |  | 10087 |  | 13279 |  |  |
| VSEA | 2965 | 3458 |  |  | 5673 | 6676 | 8849 |  | 11387 | 13285 |  |  |
| W I | 3010 |  | $\begin{aligned} & 4654 \\ & 4687 \end{aligned}$ |  | $\begin{aligned} & 5529 \\ & 5532 \\ & 5535 \\ & 5541 \end{aligned}$ | $\begin{aligned} & 6637 \\ & 6643 \end{aligned}$ | $\begin{aligned} & 8921 \\ & 8924 \\ & 8930 \\ & 8936 \end{aligned}$ | 10027 <br> 10030 <br> 10069 <br> 10072 <br> 10078 | $\begin{aligned} & 11345 \\ & 11351 \end{aligned}$ | $\begin{aligned} & 13324 \\ & 13327 \\ & 13333 \\ & 13336 \\ & 13342 \\ & 13345 \\ & 13351 \end{aligned}$ | $\begin{aligned} & 17916 \\ & 17922 \\ & 17931 \end{aligned}$ | $\begin{aligned} & 21940 \\ & 21946 \\ & 21952 \\ & 21958 \\ & 21967 \\ & 21973 \\ & 21979 \\ & 21988 \\ & 21997 \\ & \hline \end{aligned}$ |
| W II | $\begin{aligned} & 3007 \\ & 3013 \end{aligned}$ | $\begin{aligned} & 3494 \\ & 3497 \end{aligned}$ | $\begin{aligned} & 4654 \\ & 4687 \end{aligned}$ |  | $\begin{aligned} & 5529 \\ & 5538 \\ & 5544 \end{aligned}$ | $\begin{aligned} & 6637 \\ & 6640 \\ & 6646 \end{aligned}$ | $\begin{aligned} & 8927 \\ & 8933 \\ & 8936 \end{aligned}$ |  |  | $\begin{aligned} & 13330 \\ & 13339 \\ & 13348 \end{aligned}$ | $\begin{aligned} & 17919 \\ & 17925 \\ & 17934 \\ & 17940 \\ & \hline \end{aligned}$ | $\begin{aligned} & 21964 \\ & 21985 \end{aligned}$ |
| W III | 3007 |  | 4687 |  |  | 6637 | $\begin{aligned} & 8921 \\ & 8930 \end{aligned}$ | $\begin{aligned} & 10072 \\ & 10078 \end{aligned}$ | $\begin{aligned} & 11342 \\ & 11351 \end{aligned}$ | $\begin{aligned} & 13324 \\ & 13333 \\ & 13342 \\ & 13351 \end{aligned}$ | $\begin{aligned} & 17916 \\ & 17922 \\ & 17928 \\ & 17934 \\ & 17940 \end{aligned}$ | $\begin{aligned} & 21949 \\ & 21970 \end{aligned}$ |
| W IV | 3010 |  |  |  | $\begin{aligned} & 5535 \\ & 5541 \end{aligned}$ | 6643 | 8924 | $\begin{aligned} & 10030 \\ & 10069 \end{aligned}$ | 11345 |  | $\begin{aligned} & 17919 \\ & 17928 \\ & 17937 \end{aligned}$ | $\begin{aligned} & 21955 \\ & 21976 \\ & 21991 \end{aligned}$ |
| W V | 3013 |  |  |  | $\begin{aligned} & 5532 \\ & 5538 \\ & 5544 \end{aligned}$ | $\begin{aligned} & \hline 6640 \\ & 6646 \end{aligned}$ | $\begin{aligned} & 8927 \\ & 8933 \end{aligned}$ | $\begin{aligned} & 10033 \\ & 10075 \end{aligned}$ | $\begin{aligned} & 11348 \\ & 11354 \end{aligned}$ | $\begin{aligned} & 13330 \\ & 13339 \\ & 13348 \end{aligned}$ | $\begin{aligned} & 17925 \\ & 17931 \\ & 17937 \end{aligned}$ | $\begin{aligned} & 21943 \\ & 21961 \\ & 21982 \\ & 21994 \end{aligned}$ |

## ARTICLE 2 <br> Frequency allotment Plan (in numerical order of frequencies)

General Notes:
27/214 $1 \quad$ Class of stations: FD
Classes of emission: see Nos. 27/56 to 27/59.
Power: Unless otherwise indicated in the Plan, the power values for aeronautical and aircraft stations are those shown in Nos. 27/60 to 27/68.

Hours: H24, unless otherwise indicated.
27/215 2 A frequency allotted on a "day-time basis" may be used during the period one hour after sunrise to one hour before sunset

27/216 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.

27/217 4 The world-wide frequency allotments appearing in the Tables at No. 27/213 and Nos. 27/218 to 27/231, except for carrier (reference) frequencies 3023 kHz and 5680 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.

(Cont.)

(Cont.)


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| Frequency <br> (kHz) | Authorized area of use* | Remarks* $^{*}$ |
| :---: | :---: | :---: |
| $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ |
| 3023 | WWORLDWIDE <br> (R) and (OR) | See Part II, Section II, Article 3 |

* See page AP27-75.



## Band $3400-3500 \mathrm{kHz} 3.5 \mathrm{MHz}$

(Cont.)


* See page AP27-75.

| Frequency (kHz) | Authorized area of use* |  | Remarks* |
| :---: | :---: | :---: | :---: |
| 1 | 2 |  | 3 |
| 4651 | R | 1D $\quad 6 \mathrm{C}-6 \mathrm{G} \quad 10 \mathrm{~B} \quad 10 \mathrm{E}$ 13E 13 F | $\begin{array}{lll} \hline \mathrm{CC} & 13 \mathrm{E} \quad 13 \mathrm{~F} \\ & \mathrm{C} 001 / 6 \mathrm{G} \end{array}$ |
| 4654 | W | WORLDWIDE | C100/I II |
| 4657 | M R | $\quad 13 \mathrm{H}$ | CC 2 A 2 C <br>  $\mathrm{C} 001 / 2 \mathrm{~A}$ 2 C <br> CC 6 A 6 E <br>  $\mathrm{C} 001 / 6 \mathrm{~A}$ 6 E |
| 4660 | R | 2B $\quad 2 \mathrm{C}$ | $\begin{array}{lll} \hline \mathrm{CC} & 2 \mathrm{~B} & 2 \mathrm{C} \\ \mathrm{CC} & 13 \mathrm{D} & 13 \mathrm{M} \end{array}$ |
| 4663 | R V | $\begin{array}{llll} \hline 6 \mathrm{G} \quad 10 \mathrm{~F} & 13 \mathrm{E} & 13 \mathrm{~F} & 13 \mathrm{~K} \\ \text { VNCA } \end{array}$ | $\begin{array}{llll} \hline \text { CC } & 13 \mathrm{E} & 13 \mathrm{~F} & 13 \mathrm{~K} \\ & \mathrm{C} 001 / 6 \mathrm{G} & \end{array}$ |
| 4666 | M R | $\begin{aligned} & \text { CWP } \\ & \text { 1C } \\ & 10 \mathrm{~B} \end{aligned} 10 \mathrm{D} \quad 10 \mathrm{E}$ | CC 10B 10D 10E |
| 4669 | M R | $10 \mathrm{D} .$ | $\begin{array}{ll} \mathrm{CC} & 10 \mathrm{C} \quad 10 \mathrm{D} \\ & \mathrm{C} 001 / 6 \mathrm{G} \end{array}$ |
| 4672 | R | 2A $\quad 2 \mathrm{~B} \quad 3 \mathrm{~A} \quad 4 \mathrm{~A} \quad 6 \mathrm{G} \quad 11 \mathrm{~B} \quad 13 \mathrm{~K}$ | $\begin{array}{llll} \hline \mathrm{CC} & 2 \mathrm{~A} & 2 \mathrm{~B} & 3 \mathrm{~A} \\ & \mathrm{C} 001 / 4 \mathrm{~A} & \mathrm{C} 001 / 6 \mathrm{G} \\ \hline \end{array}$ |
| 4675 | M R | $\begin{aligned} & \text { NAT } \\ & 6 \mathrm{~A} \quad 6 \mathrm{E} \quad 9 \mathrm{C} \quad 13 \mathrm{G} \end{aligned}$ | $\begin{array}{lll} \mathrm{CC} & 6 \mathrm{~A} & 6 \mathrm{E} \\ & \mathrm{C} 001 / 13 \mathrm{G} \end{array}$ |
| 4678 | M R | $\begin{array}{llll} \hline \text { NCA } & & & \\ 10 \mathrm{D} & 13 \mathrm{I} & 14 \mathrm{~A} & 14 \mathrm{G} \end{array}$ | $\begin{array}{llll} \hline \mathrm{CC} & 14 \mathrm{~A} & 14 \mathrm{G} & \\ & \mathrm{C} 001 / 14 \mathrm{~A} & 14 \mathrm{G} \end{array}$ |
| 4681 | R | 2B $\quad 2 \mathrm{C}$ | CC 2B 2C 3 B |
| 4684 | R | $\begin{array}{llllll}3 \mathrm{~A} & 3 \mathrm{C} & 10 \mathrm{E} & 13 \mathrm{~J} & 14 \mathrm{~B} & 14 \mathrm{C}\end{array}$ | $\begin{array}{llll} \hline \mathrm{CC} & 3 \mathrm{~A} & 3 \mathrm{C} & \\ \mathrm{CC} & 14 \mathrm{~B} & 14 \mathrm{C} & \\ & \mathrm{C} 001 / 14 \mathrm{~B} & 14 \mathrm{C} \end{array}$ |
| 4687 | W | WORLDWIDE | C100/I II III |
| 4690 | R | 2A $\quad 2 \mathrm{~B} \quad 3 \mathrm{~A} \quad 6 \mathrm{G} \quad 10 \mathrm{~B} \quad 13 \mathrm{M}$ | $\begin{array}{llll} \mathrm{CC} & 2 \mathrm{~A} & 2 \mathrm{~B} & 3 \mathrm{~A} \\ & \mathrm{C} 001 / 6 \mathrm{G} & \end{array}$ |
| 4693 | R | 2B $\quad 2 \mathrm{C}$ | $\begin{array}{llll} \mathrm{CC} & 2 \mathrm{~B} & 2 \mathrm{C} & 3 \\ & \mathrm{C} 001 / 14 \mathrm{D} \end{array}$ |
| 4696 | R | $2{ }^{2} \quad 6 \mathrm{G} \quad 9 \quad 9 \quad 10 \quad 13 \mathrm{~J}$ | C001/6G |

[^4]| Frequency (kHz) | Authorized area of use* |  |  |  |  |  |  | Remarks* |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 2 |  |  |  |  |  |  |  |  | 3 |
| 5451 | R | 10F | 11B | 12F | 12H | 13I | 13J |  | $\begin{aligned} & 12 \mathrm{~F} \\ & 13 \mathrm{I} \end{aligned}$ | $\begin{gathered} 12 \mathrm{H} \\ 13 \mathrm{~J} \end{gathered}$ |
| 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 | 12 E | 12 F | 13G |  |  | 12E | 12F |


(Cont.)


| 5586 | R $\quad 2 \mathrm{C} \quad 3 \mathrm{C} \quad 10 \mathrm{D}$ |  |
| :---: | :--- | :--- | :--- | :--- |
| $*$ |  |  |

(See cont.)

(Cont.)


| 5652 | M | AFI CWP |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 5655 | M | EA SEA | CC EA SEA |  |
| 5658 | M | AFI MID | CC AFI MID |  |

* See page AP27-75.
(See cont.)


## Band $5480-5680 \mathrm{kHz} 5.6 \mathrm{MHz}$ <br> (Cont.)

| Frequency <br> (kHz) | Authorized area of use* | Remarks* |  |
| :---: | :--- | :--- | :---: |
| $\mathbf{1}$ |  | $\mathbf{2}$ | $\mathbf{3}$ |
| 5661 | M | CWP EUR |  |
| 5664 | M | NCA |  |
| 5667 | M | MID |  |
| 5670 | M | EA |  |
| 5673 | V | VSEA |  |
| 5676 | V | VNCA |  |

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| Frequency <br> $(\mathbf{k H z})$ | Authorized area of use* | Remarks* $^{*}$ |
| :---: | :--- | :---: |
| $\mathbf{1}$ | $\mathbf{3}$ <br> 5680W WORLDWIDE <br> (R) and (OR) | See Part II, Section II, Article 3 |


| Frequency (kHz) | Authorized area of use* |  |  |  |  |  |  |  |  | Remarks* |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 2 |  |  |  |  |  |  |  |  | 3 |  |  |  |
| 6526 | R | 2A 2B | 3A | 4A | 6F | 12G | 14F |  |  | CC | 2A | 2B | 3A |
| 6529 | R | 3B 6G |  |  |  |  |  |  |  |  |  |  |  |
| 6532 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { CWP } \\ & 2 \mathrm{~A} \quad 2 \mathrm{~B} \end{aligned}$ | 3A | $4 \mathrm{~A}$ | $12 \mathrm{~F}$ |  |  |  |  |  | 2A | 2B | 3A |
| 6535 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { SAT } \\ & 2 \mathrm{C} \quad 5 \mathrm{D} \end{aligned}$ |  |  | $10 \mathrm{~A}$ | 10D | 12C | 12J | 14B |  |  |  |  |
| 6538 | $\begin{aligned} & \mathrm{R} \\ & \mathrm{~V} \end{aligned}$ | $\begin{aligned} & 3 \mathrm{~A} \quad 3 \mathrm{~B} \\ & \text { VAFI } \end{aligned}$ | 9B | $11 \mathrm{~B}$ |  |  |  |  |  |  | 3A | 3B |  |


| 6541 | R | 2 C | 6 G | 10 C | 13 C | 14 C |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 6544 | R | 1 C | 3 A | 3 B | 5 A | 5 C | 6 C | 10 D | CC |
|  |  |  | 3 A | 3 B |  |  |  |  |  |
| CC | 5 A | 5 C |  |  |  |  |  |  |  |

* See page AP27-75.
(See cont.)
Band $6525-6685 \mathrm{kHz} 6.6 \mathrm{MHz}$
(Cont.)


| 6604 | R <br> V | 1D <br> VNAT | $7 \mathrm{C} \quad 10 \mathrm{~A} \quad 13 \mathrm{~N} \quad 14 \mathrm{~B}$ |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 6607 | R | $3 \mathrm{~A} \quad 6 \mathrm{~A}$ | 6 B |  |  |  |
| 6610 | R | $1 \mathrm{D} \quad 6 \mathrm{G}$ | 14 F |  |  |  |
| 6613 | R | 3 A | 6 A | 6 B | 13 G |  |

* See page AP27-75.
(See cont.)


## Band $6525-6685 \mathrm{kHz} \quad 6.6 \mathrm{MHz}$

(Cont.)


| 6676 | V | VSEA |  |
| :--- | :--- | :--- | :--- |
| 6679 | V | VPAC |  |
| 6682 | R | 6 G |  |

* See page AP27-75.

27/226
Band $\mathbf{8 8 1 5 - 8} 965$ kHz $\quad 9 \mathbf{M H z}$

| Frequency (kHz) | Authorized area of use* |  | Remarks* |
| :---: | :---: | :---: | :---: |
| 1 |  | 2 | 3 |
| 8816 | R | $4 \mathrm{~A} \quad 6 \mathrm{G} \quad 12 \mathrm{C} \quad 13 \mathrm{~J} \quad 14 \mathrm{~A}$ |  |
| 8819 | R | 2B 2 C 9B 1013 C | CC 2B 2C |
| 8822 | R |  | $\begin{array}{lcr} \mathrm{CC} & 5 \mathrm{~A} & 5 \mathrm{C} \\ & \mathrm{C} 005 / 2 \mathrm{~A} \end{array}$ |
| 8825 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { NAT } \\ & 6 \mathrm{G} \quad 13 \mathrm{H} \quad 14 \mathrm{~F} \end{aligned}$ |  |
| 8828 | R V | $\begin{aligned} & 1 \mathrm{D} \quad 13 \mathrm{~N} \\ & \text { VPAC } \end{aligned}$ |  |
| 8831 | M R | $\begin{aligned} & \text { NAT } \\ & 6 \mathrm{G} \quad 13 \mathrm{~F} \quad 14 \mathrm{~F} \end{aligned}$ |  |
| 8834 | R | 2B $\quad 2 \mathrm{C}$ | CC 2B 2C |
| 8837 | R | 3A 3 C 4A 9 B 10B 13 M | CC 3A 3C |
| 8840 | R | 1C 6 |  |
| 8843 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { CEP } \\ & 5 \mathrm{D} \end{aligned} \quad 6 \mathrm{G} \quad 10 \mathrm{E} \quad 13 \mathrm{C} \quad 13 \mathrm{~J} \quad 13 \mathrm{~K} \quad 14 \mathrm{D}$ | CC 13C 13J 13K |
| 8846 | M R | $\begin{aligned} & \text { CAR } \\ & 2 \\ & 2 \end{aligned} \quad 3 \quad 7 \mathrm{~F} \quad 9$ | CC 23 |
| 8849 | R | 13K <br> VSEA |  |
| 8852 | R | $\begin{array}{llll} \hline 3 \mathrm{~B} & 3 \mathrm{C} & 9 & 12 \mathrm{E} \\ \text { VAFI } \end{array}$ | CC 3B 3C |
| 8855 | M | $$ |  |
| 8858 | R | 4A 6G 10D 13E 13 F 14D | CC 13E 13F |
| 8861 | M R | $\begin{array}{llll} \hline \text { SAT } & & \\ 3 A & 3 B & 6 E & 9 B \end{array}$ | $\begin{array}{lll} \text { CC } & 3 \mathrm{~A} & 3 \mathrm{~B} \\ & \mathrm{C} 011 / 6 \mathrm{E} \end{array}$ |
| 8864 | M R | $\begin{aligned} & \text { NAT } \\ & \text { 2B } \quad 6 \mathrm{~B} \end{aligned} \mathbf{6 \mathrm { F }} \quad 7 \mathrm{E} \quad 13 \mathrm{~F}$ | CC 6B 6F |
| 8867 | M | $\begin{array}{llll} \hline \text { SP } & & & \\ 6 \mathrm{G} & 10 \mathrm{C} & 13 \mathrm{D} & 13 \mathrm{M} \end{array}$ | CC 13D 13M |
| 8870 | R | $\begin{array}{lrr} 5 & 6 \mathrm{G} & 14 \\ \text { VNAT } & \end{array}$ | C004/6G |


| 8873 | R | 4 | 6 G | 9 C | 9 D | 12 E | 12 F | 13 I | CC 9 C <br> 9 D  <br> CC 12 E | 12 F |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

* See page AP27-75.
(See cont.)

(Cont.)

| Frequency (kHz) | Authorized area of use* |  | Remarks* |
| :---: | :---: | :---: | :---: |
| 1 |  | 2 | 3 |
| 8879 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{array}{ll} \hline \text { INO } & \text { NAT } \\ 3 \mathrm{~B} & \end{array}$ |  |
| 8882 | R | 2C 6D |  |
| 8885 | R | 5 6B $\quad 11 \mathrm{~B} \quad 13 \mathrm{G} \quad 14 \mathrm{C}$ |  |
| 8888 | R | $2 \quad 6 \mathrm{G} 7$ | C009/6G |
| 8891 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { NAT } \\ & 6 \mathrm{~A} \quad 14 \mathrm{E} \end{aligned}$ |  |
| 8894 | M R | $\begin{array}{lll} \hline \text { AFI } & & \\ 3 \mathrm{C} & 12 \mathrm{~F} & 14 \mathrm{~A} \end{array}$ |  |
| 8897 | M | EA |  |
| 8900 | R | 3A 10D 13G 14B |  |
| 8903 | M | $\begin{array}{ll} \text { AFI } & \text { CWP } \\ \text { 10B } & 13 \mathrm{M} \end{array}$ |  |
| 8906 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{array}{lllll} \hline \text { NAT } & & & \\ 6 \mathrm{~A} & 6 \mathrm{E} & 7 \mathrm{~B} & 9 \mathrm{~B} & 13 \mathrm{H} \end{array}$ | CC 6A 6E |
| 8909 | R | 2A 6E |  |
| 8912 | R | 5B $\quad 6 \mathrm{G}$ 11B 13 D 14C | C004/6G |
| 8915 | R | 3 C 5 A |  |
| 8918 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { CAR MID } \\ & 6 \mathrm{C} \end{aligned}$ |  |
| 8921 | W | WORLDWIDE | C100/I III |
| 8924 | W | WORLDWIDE | C100/I IV |
| 8927 | W | WORLDWIDE | C100/II V |
| 8930 | W | WORLDWIDE | C100/I III |
| 8933 | W | WORLDWIDE | C100/II V |
| 8936 | W | WORLDWIDE | C100/I II |
| 8939 | R | 2A $2 \mathrm{C} \quad 6 \mathrm{~F} \quad 10 \mathrm{~B} \quad 13 \mathrm{C}$ | CC 2A 2C |
| 8942 | M | $\begin{aligned} & \text { SEA } \\ & \text { 3A } \end{aligned}$ |  |



* See page AP27-75.

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| Frequency (kHz) | Authorized area of use* | Remarks* |
| :---: | :---: | :---: |
| 1 | 2 | 3 |
| 10006 | R $\quad 6 \mathrm{~A}$ |  |
| 10009 | $\begin{array}{lllllll}\text { R } & 2 \mathrm{~B} & 2 \mathrm{C} & 7 \mathrm{~B} & 9 \mathrm{~B} & 13 \mathrm{~K}\end{array}$ | CC 2B 2C |
| 10012 | $\begin{array}{lllll}\mathrm{R} & 5 & 10 & 13 \mathrm{~J}\end{array}$ |  |
| 10015 | $\begin{array}{llll}\mathrm{R} & 2 & 6 \mathrm{C} & 12 \mathrm{D}\end{array}$ |  |
| 10018 | $$ | $\begin{array}{ll} \text { CC } & 13 \mathrm{~J} \quad 13 \mathrm{~K} \\ & \mathrm{C} 003 / 6 \mathrm{G} \end{array}$ |
| 10021 | $\begin{array}{lllll}\mathrm{R} & 1 & 6 \mathrm{~B} & 12 \mathrm{C} & 13 \mathrm{G}\end{array}$ |  |
| 10024 | $$ | CC $2 \mathrm{~B} \quad 2 \mathrm{C}$ 3B |
| 10027 | W WORLDWIDE | C100/I II |
| 10030 | W WORLDWIDE | C100/I IV |
| 10033 | W WORLDWIDE | C100/II V |
| 10036 | $\begin{array}{llllll}\mathrm{R} & 1 \mathrm{E} & 6 \mathrm{E} & 13 \mathrm{G} & 13 \mathrm{H}\end{array}$ | CC $13 \mathrm{G} \quad 13 \mathrm{H}$ |
| 10039 | $\begin{array}{lllllll}\mathrm{R} & 3 \mathrm{~B} & 3 \mathrm{C} & 4 \mathrm{~A} & 9 \mathrm{~B} & 12 \mathrm{C}\end{array}$ | CC 3B 3C |
| 10042 | $\begin{array}{llllll} \hline \mathrm{M} & \mathrm{EA} & & & & \\ \mathrm{R} & 9 \mathrm{C} & 10 \mathrm{~F} & 13 \mathrm{C} & 13 \mathrm{~J} & 13 \mathrm{~K} \end{array}$ | CC $13 \mathrm{C} \quad 13 \mathrm{~J} \quad 13 \mathrm{~K}$ |
| 10045 | $\begin{array}{lllllll}\mathrm{R} & 2 & 3 \mathrm{~A} & 11 \mathrm{~B} & 13 \mathrm{H} & 14\end{array}$ | CC 23 3 |
| 10048 | $\begin{array}{lllll} \mathrm{M} & \mathrm{NP} & & & \\ \mathrm{R} & 2 \mathrm{~A} & 5 \mathrm{D} & 13 \mathrm{~A} & 13 \mathrm{~B} \end{array}$ | CC 13A 13B |
| 10051 | $\begin{array}{lll} \mathrm{R} & 6 \mathrm{~A} \quad 6 \mathrm{E} & 13 \mathrm{I} \\ \mathrm{~V} & \mathrm{VNAT} & \end{array}$ | CC 6A 6E |
| 10054 | $\begin{array}{llllll}\mathrm{R} & 2 \mathrm{~A} & 2 \mathrm{C} & 6 \mathrm{G} & 12\end{array}$ | $\begin{array}{lcc} \mathrm{CC} & 2 \mathrm{~A} & 2 \mathrm{C} \\ & \mathrm{C} 004 / 6 \mathrm{G} \end{array}$ |
| 10057 | M CEP <br> R 3 A <br> V VAFI |  |


| 10060 | R | 1D $6 \mathrm{~F} \quad 13 \mathrm{~K}$ |  |
| :---: | :---: | :---: | :---: |
| 10063 | R | 4B 6G 12E | C004/6G |
| 10066 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { SEA } \\ & \text { 1B } \quad 10 \mathrm{~A} \quad 13 \mathrm{M} \end{aligned}$ |  |
| 10069 | W | WORLDWIDE | C100/I IV |
| 10072 | W | WORLDWIDE | C100/I III |
| 10075 | W | WORLDWIDE | C100/II V |
| 10078 | W | WORLDWIDE | C100/I III |
| 10081 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { CWP } \\ & 4 \mathrm{~A} \quad 6 \mathrm{~A} \quad 7 \mathrm{C} \end{aligned} 13 \mathrm{~F}$ | C006/6A |
| 10084 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { EUR SP } \\ & 6 \mathrm{E} \\ & \hline \end{aligned}$ |  |

* See page AP27-75.
(See cont.)

Band 10 005-10 100 kHz 10 MHz
(Cont.)

| Frequency (kHz) | Authorized area of use* |  |  | Remarks* |
| :---: | :---: | :---: | :---: | :---: |
| 1 |  |  | 2 | 3 |
| 10087 | R V | $\begin{aligned} & 3 \quad 14 \\ & \text { VSAM } \end{aligned}$ |  |  |
| 10090 | R | $\begin{aligned} & 12 \mathrm{E} \quad 12 \mathrm{~F} \\ & \mathrm{VNCA} \end{aligned}$ |  | CC 12E 12F |
| 10093 | R | 5B 6B 11B | 13N |  |
| 10096 | M | $\begin{array}{ll} \text { NCA } & \text { SAM } \\ 7 \mathrm{D} & \end{array}$ |  |  |



| 11288 | R | 5A 6G 11B |  |
| :---: | :---: | :---: | :---: |
| 11291 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | SAT <br> 3B 3C | CC 3B 3C |
| 11294 | R | 2A 6G 7C | C002/6G |
| 11297 | R | $2 \quad 12 \mathrm{~F}$ |  |
| 11300 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { AFI } \\ & 6 \mathrm{G} \quad 13 \mathrm{H} \end{aligned}$ | C002/6G |
| 11303 | R | 3C 13E |  |
| 11306 | R | 6 G 7E 11B |  |
| 11309 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { NAT } \\ & 3 \mathrm{~A} \quad 6 \mathrm{D} \end{aligned}$ |  |
| 11312 | R | 59 C 9D | CC 9C 9D |
| 11315 | $\begin{aligned} & \mathrm{R} \\ & \mathrm{~V} \end{aligned}$ | 6G <br> VCAR |  |
| 11318 | R | 3 4A 13D |  |

* See page AP27-75.
(See cont.)

Band 11 275-11 400 kHz
(Cont.)

| Frequency (kHz) |  | Authorized area of use* | Remarks* |
| :---: | :---: | :---: | :---: |
| 1 |  | 2 | 3 |
| 11321 | R | 6A 13F |  |
| 11324 | R | $3 \mathrm{~A} \quad 3 \mathrm{C} \quad 4 \mathrm{~B} \quad 12 \mathrm{C}$ | CC 3A 3C |
| 11327 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{array}{lll} \hline \text { SP } & & \\ 3 B & 5 & 13 C \end{array}$ |  |
| 11330 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{array}{lr} \text { AFI } & \text { NP } \\ 3 \mathrm{~A} & 13 \mathrm{~F} \end{array}$ |  |
| 11333 | R | 2B 2C 10 | CC 2B 2C |
| 11336 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { NAT } \\ & 3 \end{aligned}$ |  |
| 11339 | R | 2B $6 \mathrm{~B} \quad 9 \quad 13 \mathrm{~K}$ |  |
| 11342 | W | WORLDWIDE | C100/II III |
| 11345 | W | WORLDWIDE | C100/I IV |
| 11348 | W | WORLDWIDE | C100/II V |
| 11351 | W | WORLDWIDE | C100/I III |
| 11354 | W | WORLDWIDE | C100/II V |
| 11357 | R | $6 \mathrm{~A} \quad 6 \mathrm{E} \quad 10 \mathrm{~A}$ | CC 6A 6E |


| 11360 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $$ | CC 23 |
| :---: | :---: | :---: | :---: |
| 11363 | R | 1 6E 10A |  |
| 11366 | R | 1C 6B $6 \mathrm{~F} \quad 13 \mathrm{~K}$ | CC 6B 6F |
| 11369 | R | 6G 13G |  |
| 11372 | R | 2C 3B 6D |  |
| 11375 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{array}{ll} \hline \text { MID } & \\ 10 \mathrm{~A} & 13 \mathrm{C} \end{array}$ |  |
| 11378 | $\begin{aligned} & \mathrm{R} \\ & \mathrm{~V} \end{aligned}$ | $\begin{aligned} & \hline \text { 3C } 13 \mathrm{M} \\ & \text { VEUR } \end{aligned}$ |  |
| 11381 | R | $6 \quad 12 \mathrm{E}$ 12J | CC 12E 12J |
| 11384 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { CWP } \\ & \text { 1D } \quad 12 \mathrm{~J} \end{aligned}$ |  |
| 11387 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{~V} \end{aligned}$ | CAR <br> VSEA |  |
| 11390 | R | $2 \quad 10$ |  |
| 11393 | $\begin{aligned} & \mathrm{R} \\ & \mathrm{~V} \end{aligned}$ | $\begin{aligned} & \text { 9B 12E } \\ & \text { VMID } \end{aligned}$ |  |
| 11396 | M | CAR EA SEA | CC EA SEA |

* See page AP27-75.

Band 13 260-13 360 kHz
13.3 MHz

| Frequency (kHz) |  | Authorized area of use* | Remarks* |
| :---: | :---: | :---: | :---: |
| 1 |  | 2 | 3 |
| 13261 | V | VAFI |  |
| 13264 | $\begin{aligned} & \mathrm{R} \\ & \mathrm{~V} \end{aligned}$ | 14 <br> VEUR |  |
| 13267 | R | 313 H |  |
| 13270 | $\begin{aligned} & \mathrm{R} \\ & \mathrm{~V} \end{aligned}$ | 6G <br> VNAT |  |
| 13273 | M | AFI |  |
| 13276 | $\begin{aligned} & \mathrm{R} \\ & \mathrm{~V} \end{aligned}$ | 6G <br> VNAT |  |
| 13279 | V | VNCA VSAM |  |
| 13282 | V | VPAC |  |
| 13285 | $\begin{aligned} & \mathrm{R} \\ & \mathrm{~V} \end{aligned}$ | $\begin{aligned} & \hline 10 \\ & \text { VSEA } \end{aligned}$ |  |
| 13288 | M | AFI EUR MID | CC AFI EUR MID |
| 13291 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { NAT } \\ & 6 \end{aligned}$ |  |


| 13294 | M | AFI |  |
| :---: | :---: | :---: | :---: |
| 13297 | M | CAR EA SAM | CC CAR SAM |
| 13300 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{array}{llll} \text { CEP } & \text { CWP } & \text { NP } & \text { SP } \\ 4 & & & \end{array}$ | $\begin{array}{llll} \text { CC } & \text { CEP } & \text { CWP } & \text { NP } \\ & \text { SP } & & \end{array}$ |
| 13303 | M | EA NCA | CC EA NCA |
| 13306 | M | INO NAT |  |
| 13309 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{array}{lr} \hline \text { EA } & \text { SEA } \\ 13 \mathrm{C} & 13 \mathrm{~K} \end{array}$ | $\begin{array}{llr} \hline \text { CC } & \text { EA } & \text { SEA } \\ \text { CC } & 13 \mathrm{C} & 13 \mathrm{~K} \end{array}$ |
| 13312 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { MID } \\ & \text { 11B } \end{aligned}$ |  |
| 13315 | M | NCA SAT |  |
| 13318 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { SEA } \\ & 13 \end{aligned}$ |  |
| 13321 | R | 23 | CC 23 |
| 13324 | W | WORLDWIDE | C100/I III |
| 13327 | W | WORLDWIDE | C100/I IV |
| 13330 | W | WORLDWIDE | C100/II V |
| 13333 | W | WORLDWIDE | C100/I III |
| 13336 | W | WORLDWIDE | C100/I IV |
| 13339 | W | WORLDWIDE | C100/II V |
| 13342 | W | WORLDWIDE | C100/I III |

* See page AP27-75.
(See cont.)

Band 13 260-13 360 kHz
13.3 MHz
(Cont.)

| Frequency (kHz) | Authorized area of use* |  | Remarks* |
| :---: | :---: | :---: | :---: |
| 1 |  | 2 | 3 |
| 13345 | W | WORLDWIDE | C100/I IV |
| 13348 | W | WORLDWIDE | C100/II V |
| 13351 | W | WORLDWIDE | C100/I III |
| 13354 | R | 57 | CC 57 |
| 13357 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \text { SAT } \\ & 2 \end{aligned}$ |  |



* See page AP27-75.


## Band 17 900-17 970 kHz <br> 18 MHz

(Cont.)

| $\begin{aligned} & \text { Frequency } \\ & (\mathbf{k H z}) \end{aligned}$ | Authorized area of use* |  |  |  |  |  | Remarks* |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 2 |  |  |  |  |  | 3 |  |  |  |  |
| 17952 | R 3 |  |  |  |  |  |  |  |  |  |  |
| 17955 | $\begin{aligned} & \mathrm{M} \\ & \mathrm{R} \end{aligned}$ | $\begin{aligned} & \hline \text { SAT } \\ & 6 B \end{aligned}$ |  |  |  |  |  |  |  |  |  |
| 17958 | M | NCA |  |  |  |  |  |  |  |  |  |
| 17961 | M | AFI EUR INO MID |  |  |  |  | CC | AFI | EUR | INO | MID |
| 17964 | R | 211 B |  |  |  |  |  |  |  |  |  |
| 17967 | R | 5 | 13A | 13B | 13E | 13F | CC | 13A | 13B | 13E | 13F |


| Frequency (kHz) | Authorized area of use* |  | Remarks* |
| :---: | :---: | :---: | :---: |
| 1 |  | 2 | 3 |
| 21940 | W | WORLDWIDE | C100/I |
| 21943 | W | WORLDWIDE | C100/V |
| 21946 | W | WORLDWIDE | C100/I |
| 21949 | W | WORLDWIDE | C100/III |
| 21952 | W | WORLDWIDE | C100/I |
| 21955 | W | WORLDWIDE | C100/IV |
| 21958 | W | WORLDWIDE | C100/I |
| 21961 | W | WORLDWIDE | C100/V |
| 21964 | W | WORLDWIDE | C100/II |
| 21967 | W | WORLDWIDE | C100/I |
| 21970 | W | WORLDWIDE | C100/III |
| 21973 | W | WORLDWIDE | C100/I |
| 21976 | W | WORLDWIDE | C100/IV |
| 21979 | W | WORLDWIDE | C100/I |
| 21982 | W | WORLDWIDE | C100/V |
| 21985 | W | WORLDWIDE | C100/II |
| 21988 | W | WORLDWIDE | C100/I |
| 21991 | W | WORLDWIDE | C100/IV |
| 21994 | W | WORLDWIDE | C100/V |
| 21997 | W | WORLDWIDE | C100/I |

[^5]
## Explanation of symbols and abbreviations

| Column 2 | $\mathrm{M}=$ MWARA |
| :---: | :--- |
|  | $\mathrm{R}=$ RDARA |
|  | $\mathrm{V}=$ VOLMET |
| Column 3 | $\mathrm{~W}=$ worldwide |
| $\mathrm{C} 001 / \ldots$ | $\mathrm{CC}=$ common channel to |
| $\mathrm{C} 002 / 6 \mathrm{G}$ | Restricted to daytime only, in the area indicated after the slant stroke |
| $\mathrm{C} 003 / 6 \mathrm{G}$ | In area 6 G, operation is restricted to east of $95^{\circ} \mathrm{E}$ |
| $\mathrm{C} 004 / 6 \mathrm{G}$ | In area 6 G, operation is restricted to west of $95^{\circ} \mathrm{E}$ |
| $\mathrm{C} 005 / 2 \mathrm{~A}$ | Use limited to east of $110^{\circ} \mathrm{E}$ |
| $\mathrm{C} 006 / 6 \mathrm{~A}$ | Use limited to north of $60^{\circ} \mathrm{N}$ |
| C 007 | Use limited to east of $75^{\circ} \mathrm{E}$ |
| C 008 | Not used |
| $\mathrm{C} 009 / 6 \mathrm{G}$ | Not used |
| $\mathrm{C} 010 / 6 \mathrm{G}$ | In area 6 G, use limited to east of $110^{\circ} \mathrm{E}$ and south of $25^{\circ} \mathrm{N}$ |
| $\mathrm{C} 011 / 6 \mathrm{E}$ | In area 6 G, use limited to east of $118^{\circ} \mathrm{E}$ and north of $40^{\circ} \mathrm{N}$ |
| $\mathrm{C} 100 / \ldots$ | In area 6 E, use is limited to south of $20^{\circ} \mathrm{N}$ |
|  | Worldwide Allotment Area is indicated after the symbol. For assignment procedure |
|  | see No. $27 / 217$. |

## ARTICLE 3

## Frequencies for common use

27/232 $1 \quad$ The carrier (reference) frequencies 3023 kHz and 5680 kHz are intended for common use on a world-wide basis.

27/233 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 W 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.

27/234 3 Notwithstanding these provisions, the frequency 5680 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.

27/235 4 Additional particulars regarding the use of these channels for the above purposes may be recommended by the meetings of ICAO.

27/236 $5 \quad$ Frequencies 3023 kHz and 5680 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.

27/237 6 These channels may be used for A1A, A1B or A3E emissions, in accordance with special arrangements. Such channels shall not be subdivided.
27/238 7 All stations participating directly in coordinated search and rescue operations and using frequencies 3023 kHz and 5680 kHz shall transmit solely on the upper sideband except in the cases provided for in No. 27/57.


[^0]:    * Note by the Secretariat: This edition of Appendix 27 incorporates editorial amendments to the Appendix 27 Aer2 as adopted by the WARC-Aer2.
    The references in Appendix 27 now conform to the new numbering scheme of the Radio Regulations. In addition, the text of Appendix 27 contains updated definitions of the relevant aeronautical areas conforming with the new geographical situation reflecting the political changes since 1979. It also contains updated references to the classes of emissions in accordance with Article 2. (WRC-03)

[^1]:    1 27/9.1 The type of communication referred to in 27/9 may be regulated by administrations.

[^2]:    * Note by the Secretariat: The relevant Article in the Radio Regulations is now Article $\mathbf{6}$ entitled "Special Agreements".

    2 27/18.1 To calculate the assigned frequency from a carrier (reference) frequency given in the table, reference should be made to Nos. 27/75, 27/77 and 27/78.

[^3]:    * A3E and H3E to be used only on 3023 kHz and 5680 kHz .
    ** A1A, A1B and F1B are permitted provided they do not cause harmful interference to the classes of emission H2B, J3E, J7B and JXX. In addition, A1A, A1B and F1B emissions shall be in accordance with the provisions in Nos. 27/70 to $27 / 74$ 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. 27/69.

[^4]:    * See page AP27-75.

[^5]:    * See page AP27-75.

