PM-1
RADIO LICENSING

PART 2

1. AERONAUTICAL MOBILE SERVICE
2. AIRCRAFT NAVIGATIONAL SERVICE

POLICY MANUAL

PM-1 SECOND EDITION

REVISION NO. 67 SEPTEMBER 4, 1984

Revision Summary - (Revisions are indicated by ***).

PM-1-2 The Canadian frequency allocation/allotment plan for VHF aeronautical services has been reviewed and revised.

NEW AND REPLACEMENT PAGES

PM-1-2 Replace Appendix B.

POLICY MANUAL

PM-1 SECOND EDITION

REVISION NO. 56 JULY 22, 1982

REVISION SUMMARY

PM-1-2 1. PM-1-2 has been completely up-dated as the result of a task force study.

NEW AND REPLACEMENT PAGES

PM-1-2 1. Replace entire PM-1-2.

NOTICE

This work represents a re-write of the Policy Manual, Part PM-1-2. Radio inspectors are cautioned that the review and consultation processes involved in the re-write of this manual were not completed. Errors in content or composition may be present. If detected, they should be reported to DOS via the proper channels.

RADIO LICENSING

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1. AERONAUTICAL MOBILE SERVICE

Introduction

1.1 PM-1-2, provides information and guidelines for the licensing of radio stations in the Aeronautical Mobile Service. Private Commercial Service information as it pertains to aircraft, is found in PM-1-4.

Definitions - Aeronautical Mobile Service

1.2 A service provided by mobile stations installed in aircraft or land stations for communication with stations of the International Aeronautical Mobile Service or other authorized stations relative to the safety, navigation or guidance of aircraft. (Ref. General Radio Regulations, Part II, Sec. 2).

Aeronautical Station

1.2.1 A land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located on board a ship or on a platform at sea.

Aircraft Station

1.2.2 A mobile station in the aeronautical mobile service, other than a survival craft station, located on board an aircraft.

*** Service Volume

1.2.3 A portion of air space whose limits are defined by a specific area on the surface of the earth, in Nautical miles, and a maximum altitude, in feet.

2. AERONAUTICAL STATIONS

General

2.1 Air/ground communications and navigational aid facilities are provided on all major airways in Canada by the Department of Transport. These facilities are subject to licensing under the provisions of the Radio Act. Persons or companies engaged in aeronautical operations may be authorized to establish and operate aeronautical stations; such stations normally provide a communication service to the licensee's own aircraft. In particular situations, however, aeronautical stations may provide communications to other aircraft upon request pursuant to authorization by the Department. Aeronautical stations may also be authorized to provide communications to general aviation, e.g., in the private advisory service.

Private Radio Facilities on Government Property

2.1.1 Licences may only be granted to establish and operate radio stations on federal government property when concurrence in the form of a letter or some other document from the appropriate federal government agency involved has been submitted by the applicant.

Frequency Allocation - General

2.2 Frequencies in any band allocated to aeronautical mobile (R) service are reserved for communications between aircraft and those aeronautical stations primarily concerned with the safety and regularity of flight along national or international civil air routes. The ITU frequency allotment plan for this service is contained in Appendix 27 to the Radio Regulations, Geneva (Edition of 1968) as revised by the Aeronautical Conference, Geneva 1966. This plan will remain in force until February 1, 1983.

2.2.1 The Final Acts of the WARC on the Aeronautical Mobile (R) Service, Geneva 1978, became effective on September 1, 1979. The new frequency allotment plan will enter into force at 0001 hours GMT on February 1, 1983. However, as of September 1, 1979 frequencies from the new frequency allotment plan may be assigned on a non-interference basis to frequencies from the present frequency allotment plan.

Note: HQ memo to all Regions dated June 5, 1980 file 5947-26, provided a frequency changeover plan showing how frequency assignments made under the old plan will be transferred to assignments from the new allotment plan. Further information is contained in HQ letter to all Regions dated May 12, 1980, and in TRC-58.

2.2.2 Frequencies in bands allocated to the aeronautical mobile (OR) service are reserved for communications between aircraft and aeronautical stations other than those primarily concerned with flight along national or international civil air routes. The ITU frequency allotment plan for this service is contained in Appendix 26 to the Radio Regulations, Geneva 1959. In Canada (OR) frequencies are reserved for Government (military) use.

2.2.3 Assignment of very high frequencies (VHF) in the band 108 - 136 MHz is made in accordance with the Canadian Frequency Allocation/Allotment Plan; see Appendix B, (CFAAPVAS).

Frequencies Available

2.3 Discrete frequencies are available for privately operated aeronautical stations from within the Aeronautical Mobile (R) bands on an area basis as shown in Appendix A.

High Frequency (HF) Aeronautical Mobile (R) Bands
(See note following paragraph 2.2.1)

Band kHz	Separation kHz	Band kHz	Separation kHz
2850 - 3025	7	8815 - 8965	7
3400 - 3500	7	10005 - 10100	8
4650 - 4700	7	11275 - 11400	8
5450 - 5480	7	13260 - 13360	8
5480 - 5680	7	17900 - 17970	8
6525 - 6685	7	21924 - 22000	8

2.3.1 As of September 1, 1979, assignments made from the old plan will be on a conditional basis subject to replacement prior to February 1, 1983.

2.3.1.1 Appendix A-1 shows discrete frequencies available for privately operated aeronautical stations from within the Aeronautical Mobile (R) bands on an area basis in accordance with Appendix 27 Aer 2 (new Plan) which will enter into force at 0001 hours GMT on February 1, 1983. Refer to paragraph 2.2.1.

2.3.2 Pursuant to ICAO standards, all DSB equipment involved in international operations shall be changed to SSB equipment prior to February 1, 1982.

2.3.2.1 All DSB equipment involved in domestic operations shall be changed to SSB equipment prior to February 1, 1983.

Frequency 5680 kHz

2.4 The frequency 5680 kHz may be assigned to privately operated aeronautical stations under certain conditions. However, this frequency is available at certain DOT stations to provide a common air/ground communication channel to facilitate the reasonably long range communication requirements of non-scheduled air operations in the more remote areas of Canada, outside designated airways.

Eligibility

2.4.1 Aeronautical companies and individuals who comply with the Radio Act and Regulations and are able to justify the need for the use of 5680 kHz are eligible. Requests for assignment of this frequency shall contain an explanation as to why operational control frequencies cannot be used. Normally, the frequency 5680 kHz will be assigned to DOT stations, to provide adequate area coverage, with assignments to other applicants being kept to a minimum.

Assignment

2.4.2 5680 kHz shall be assigned on a non-interference basis to its world-wide application as outlined in Appendix 27 to the Radio Regulations, (Edition of Geneva 1968).

Conditions

2.4.3 It is not intended that 5680 kHz replace or supplement operational control frequencies under normal operating conditions. It should be employed as follows:

1) at any time for emergency communications;

2) when it is impossible to establish communication on normal frequencies;

3) when the aircraft is not equipped with the aeronautical station's assigned frequencies; and

4) transmissions shall be kept to the minimum necessary for safety, with power not exceeding 300 watts.

Frequency Assignment

2.5 Aeronautical mobile (R) frequencies are assigned on a shared basis.

2.5.1 The frequency separations indicated in para. 2.3 are adequate to permit communications using the following classes of emission:

A1 (A1A)	A3A (A3E)	A3J (J3E)	A7J (J7B)	A4 (A3C)
A2 (A2A)	A3B (J8E)	A7A (R7B)	F1 (F1A)	
A3 (A3E)	A3H (H3E)	A7H (H7B)	F2 (F2A)	

2.5.2 It is recognized that two or more channels can be derived from each channel provided under the existing separation.

2.5.3 The use of channels, as derived from the table in para. 2.3, for the various classes of emission, including the grouping of adjacent channels, will be subject to special arrangements by the administrations concerned in order to avoid the harmful interference which may result from the simultaneous use of the same channel for several classes of emission. No inherent priority being given to any particular class of emission.

2.5.4 Frequencies assigned for double sideband emissions (A3) (A3E) shall be those listed in the frequency allotment plan. Appendix 27 to the Radio Regulations, Edition of Geneva, 1968.

Assignment and Channel Utilisation - Single Sideband Operation

2.6 A station using single sideband emissions shall be considered to be operating in accordance with the frequency allotment plan if the necessary bandwidth is confined within either the upper or the lower half of the channel provided for double sideband emissions.

2.6.1 Subject to the provisions of para. 2.5.3 and to the following conditions, a station using single sideband emissions may operate either in the upper half or in the lower half of a double sideband channel designated by its centre frequency in the frequency allotment plan:

1) when operating in the upper half of the channel, the station shall use upper sideband emissions with the carrier at the channel centre frequency listed in the frequency allotment plan;

2) equipment capable of operating only on integral multiples of 1 kHz shall be restricted to the upper halves of the channels listed in the frequency allotment plan, when operated in channels having a width of 7 kHz;

3) when operating in the lower half of the channel, the station shall use upper sideband emissions with the carrier at the following value below the channel centre frequency listed in the frequency allotment plan;

Band	Carrier (reference) frequency relative to centre frequency of channel
2, 3, 4, 5, 6 and 8 MHz	3500 hz below
10, 11, 13, 17 and 21 MHz	4000 hz below

NOTE: This Table relates to the old (DSB) plan; see note following paragraph 2.2.1.

NOTE: At the ICAO communications divisional meeting held in Montreal, May 1978, it was suggested that where Appendix 27 to the Radio Regulations, (Edition of Geneva, 1968) channels are used, the carrier (reference) frequency shall, in the case of the lower half of the previous DSB channel, be 3 kHz lower than the carrier (reference) frequency of the DSB channel. However, it is recommended that assignments be made in the upper half in preference to the lower half of the channel, as shown in subparagraph 2.6.1 1); and

4) The assigned frequency for single sideband radiotelephone emissions shall be 1400 hertz above the carrier (reference) frequency when assignments are made from Appendix A (See para. 2.2.1 and note thereunder).

Technical Requirements - General

2.7 Radio equipment employed on aeronautical stations shall meet the following:

Frequency Band	Radio Standards Procedure (RSP)	Radio Standards Specification (RSS)
200 - 415 kHz		RSS 117
1.6 - 20 MHz (Route)	RSP 100	
1.6 - 20 MHz (Fixed)		RSS 125
1.6 - 28 MHz (SSB)		RSS 125
118 - 136 MHz	RSP 100	

Note: Refer to note following paragraph 2.2.1 for implementation dates of the new frequency allotment plan.

Operations

2.8 Applicants having a requirement for both air/ground and point-to-point communications in connection with aeronautical operations shall be made aware of the following operational conditions:

1) Air/ground safety communications shall have priority on aeronautical route frequencies;

2) Frequencies in the fixed service bands should be employed for the handling of point-to-point traffic; and

3) Exceptionally, aeronautical route frequencies may be used for the handling of point-to-point traffic to a very limited extent, and such use shall be subject to no interference being caused to aeronautical safety communications.

Use of SSB HF Radiotelephone Equipment

2.9 Whenever practicable, the Department encourages the use of SSB techniques for all HF communication circuits.

2.9.1 Equipment is available for operation in the following modes:

1) J3E (A3J) Suppressed Carrier - denotes that the carrier is suppressed to a level at least 40 db below rated peak envelope power; and

2) H3E (A3H) (compatible) Full Carrier - denotes that the carrier is emitted at a power nominally 6 db below peak envelope power.

NOTE: H3E (A3H) emission is compatible with the double sideband mode of operation and transmission employing H3E (A3H) may be received on conventional double sideband receivers.

J3E (A3J) Operation in Non-Safety Service

2.9.2 The suppressed carrier mode J3E (A3J) will be authorized at aeronautical stations for point-to-point communications employing frequencies in the fixed service bands. In addition, this mode J3E (A3J) should be employed in aircraft for operational control communications on fixed service frequencies.

2.9.3 To further encourage the use of SSB in the Aeronautical Mobile Service the Department now authorizes the use of the suppressed carrier mode J3E (A3J) in aircraft and at associated aeronautical stations for air/ground communications of the licensee on operational control frequencies.

2.10 Flight Test Stations

Purpose

2.10.1 These stations provide communications between aeronautical and aircraft stations while aircraft are undergoing tests of engines or other aircraft components.

Eligibility

2.10.2 A licence to install and operate a flight test station may be granted to aircraft manufacturers and maintenance organizations under the provisions of the General Radio Regulations, Part I, Section V. Normally, only one flight test station will be authorized on a given allocated frequency at a given aerodrome, or where two aerodromes are located within interference range of each other.

Frequencies

2.10.3 Frequencies are allocated on a shared basis in accordance with the provisions of Appendix B.

Technical Requirements

2.10.4 Equipment employed at aeronautical stations and in aircraft shall be subject to paragraph 2.7.

Power

2.10.4.1 The power output of transmitters shall not exceed 50 watts for aeronautical stations and 10 watts for aircraft stations.

Conditions of Authority

2.10.5 The licensee must ensure that operators of the apparatus hold the appropriate certificate of proficiency in radio.

2.10.6 Communication between aeronautical and aircraft stations on flight test frequencies shall be limited to messages essential to the testing of aircraft components.

2.11 Flight Training Stations

Purpose

2.11.1 These stations provide communications between aeronautical and aircraft stations for pilot training.

Eligibility

2.11.2 A licence to install and operate a flight training station may be granted only to aeronautical organizations and individuals who are authorized to carry out flight training under the provisions of the General Radio Regulations, Part I, Section V. Normally, only one such station will be authorized on a given allocated frequency at a given aerodrome, or where two aerodromes are located within interference range of each other.

Frequencies

2.11.3 Frequencies are allocated on a shared basis in accordance with the provisions of Appendix B. Licensees may be required to share the use of frequencies with other like organizations, or to provide service to others without discrimination.

Technical Requirements

2.11.4 Equipment employed at aeronautical stations and in aircraft shall be subject to paragraph 2.7.

Power

2.11.4.1 Except in special circumstances, the power output of transmitters shall not exceed 50 watts for aeronautical stations and 10 watts for aircraft stations.

2.11.5 The licensee must ensure that radio operators of the apparatus hold the appropriate certificates of proficiency in radio.

Operational Constraints

2.11.6 Communication between aeronautical and aircraft stations on flight training frequencies shall be restricted to the handling of messages containing:

1) instructions essential to flight training and such other information as may be intended solely to facilitate the expeditious and efficient operation of aircraft; and

2) information concerning conditions of runways or landing strips, weather reports, availability of refueling and maintenance facilities where these services are not available on other frequencies.

2.11.6.1 All communications destined for Department of Transport facilities shall be carried out directly with such facilities rather than through the intermediary of flight training stations.

2.12 Private Advisory Stations - Non-Controlled Aerodromes

Purpose

2.12.1 A private advisory station established at a non-controlled aerodrome is intended primarily for communication with private aircraft stations.

Eligibility

2.12.2 A licence to install and operate a private advisory station may be granted to persons or companies under the provisions of the General Radio Regulations, Part I, Section V. Only one station will be authorized at any given aerodrome.

Frequency

2.12.3 Frequencies are available for assignment in accordance with the Canadian Allocation/Allotment Plan (see Appendix B). Only one frequency will be assigned to any one station.

Technical Requirements

2.12.4 The equipment employed at aeronautical stations and in aircraft shall be subject to paragraph 2.7.

Power

2.12.4.1 The power output of transmitters shall not exceed 10 watts.

Conditions of Authority

2.12.5 The licensee must ensure that radio operators of the apparatus hold an appropriate certificate of proficiency in radio.

2.12.5.1 The licensee shall provide a private advisory service to all aircraft without discrimination.

2.12.5.2 The station will provide service to general aviation at least during the normal hours of operation of the aerodrome.

Operational Constraints

2.12.6 Private advisory stations may not be used for air traffic control or point-to-point communications.

2.12.6.1 Communications between private advisory and aircraft stations shall be limited to the handling of messages essential to the safe and expeditious movement of aircraft, e.g., conditions of landing strips, availability of fuel, taxis, weather reports, etc.

2.13 Private Advisory Stations - Controlled Aerodromes (UNICOM)

Purpose

2.13.1 A private advisory station established at controlled aerodromes having a flight service facility is intended for communication with the licensee's own aircraft and other aircraft communicating with them.

Eligibility

2.13.2 A licence to install and operate a private advisory station may be granted to aeronautical operators and aircraft servicing companies, including oil companies under the provisions of the General Radio Regulations, Part I, Section V.

Frequency

2.13.3 Frequencies are available for assignment in accordance with the Canadian Frequency Allocation/ Allotment Plan (see Appendix B). Due to the limited number of frequencies available, assignments may have to be made on a shared basis.

NOTE: 1) Frequencies required exclusively for the operational control of a company's private aircraft should be assigned from the AOCC bands.

2) DOT have advised that, due to frequency congestion, the practice of allowing aviation service companies at aerodromes to use 122.2 MHz as a "private advisory" channel is being phased out to permit exclusive use by flight service stations. No new advisory service will be permitted on this frequency.

Technical Requirements

2.13.4 The equipment employed shall be subject to paragraph 2.7.

Power

2.13.4.1 The power output of transmitters shall not exceed 10 watts.

Conditions of Authorization

2.13.5 The licensee must ensure that operators of persons entrusted with the radio apparatus hold the appropriate certificates of proficiency in radio.

2.13.5.1 The licensee shall provide a private advisory service to all aircraft without discrimination.

Operational Constraints

2.13.6 Private advisory stations shall not be used for air traffic control or point-to-point communications

2.13.6.1 Communications between private advisory and aircraft stations shall be limited to the services provided by the company, e.g., servicing of aircraft, availability of fuel, etc., and may be extended to include lodging and transportation arrangements. Information relative to air traffic control, weather reports, conditions of landing strips or any other communications normally provided by air traffic control units or flight service stations shall <u>not</u> be included.

2.14 Private Multiple Communications Stations (MULTICOM)

Purpose

2.14.1 These aeronautical stations are established to provide multi purpose communications of an operational nature.

Eligibility

2.14.2 Licences to install and operate these stations will be granted to individuals or companies under the provisions of the General Radio Regulations, Part I, Section V on the basis of a demonstrated need.

2.14.2.1 Communication services normally rendered by these stations include those pertaining to agriculture, ranching, conservation activities, forest fire fighting, aerial spraying, aerial advertising, parachute jumping, etc.

Frequency

2.14.3 Frequencies are available for assignment on a shared basis in accordance with the Canadian Frequency Allocation/Allotment Plan (see Appendix B). These frequencies may also be used for air to air communications associated with the service provided by the aeronautical station and also for exclusive air to air communications on the basis of demonstrated need, e.g., formation flying.

2.14.3.1 As an extension to the private multiple operations of an aeronautical or aircraft station, the department may authorize the participation of a land mobile station on a secondary non-interference basis to the aeronautical mobile service.

Technical Requirements

2.14.4 The equipment employed shall be subject to paragraph 2.7.

Power

2.14.4.1 The power output of transmitters shall not exceed 10 watts.

Conditions of Authorization

2.14.5 The licensee must ensure that operators of the radio apparatus hold appropriate certificates of proficiency in radio.

Operational Constraints

2.14.6 These stations shall not be used for air traffic control or point-to-point communcations.

2.14.6.1 Communications pertaining to the safe and expeditious operation of aircraft such as condition of runways, type of fuel available, weather information are permitted where these communications are not otherwise available.

3. AIRCRAFT STATIONS

General

3.1 Licences for aircraft stations may be issued to persons or companies under the provisions of the General Radio Regulations, Part I, Section V.

3.1.1 The operation of radio equipment in aircraft being imported into Canada is required to be authorized. If the owner is not the holder of an experimental licence for test and demonstration purposes an application and fee for an aircraft station licence should be submitted by the owner prior to the issuance of the letter of temporary authority to cover the operation of the radio equipment during the in-transit flight. The owner should ensure that the radio equipment installed in the aircraft is capable of meeting Departmental technical requirements in order that it may be licensed.

Frequency Allocation

3.2 The HF plan, outlined in para. 2.3 and Appendix A, and the VHF plan, outlined in Appendix B apply. See note following paragraph 2.2.1.

Common Air/Ground Communication Channel

3.3 The frequency of 5680 kHz is available for communication with aeronautical stations as outlined in paragraph 2.4.

3.3.1 In addition to 5680 kHz, the MF and HF channels assigned to aeronautical operators at their aeronautical stations are available to their aircraft. These frequencies may also be assigned to other aeronautical operators for air/ground communications on a shared basis.

3.3.2 Medium and high frequencies may also be assigned to aircraft flying over Major World Air Route Areas (MWARA) in accordance with internationally agreed frequency plans. (See note following paragraph 2.2.1)

Frequencies Available (VHF)

3.4 Assignment of very high frequencies (VHF) in the band 108 - 136 MHz is made in accordance with the Canadian Frequency Allocation/Allotment Plan; see Appendix B (CFAAPVAS).

3.4.1 126.20 MHz is a military air traffic control frequency and may only be used by civil aircraft, when authorized, with extreme caution where service is not available on other VHF channels.

3.4.2 In addition, the VHF channels assigned to aeronautical operators at their aeronautical stations are available to their aircraft for communication with these aeronautical stations. These frequencies may also be assigned to other aeronautical operators at the same location for air/ground communications on a shared basis.

Civil Aircraft - Use of Frequencies Assigned to DND Stations

3.5 In certain instances, civilian aircraft are required to employ frequencies assigned to Department of National Defence to communicate with stations operated by that Department. Applications of this nature should contain full particulars substantiating this requirement and indicate the area in which communication service is required. These requests are to be forwarded to Headquarters for the necessary co-ordination.

Use of Maritime Mobile Service Frequencies by Aircraft

3.6 In certain cases, provided for in the International Radio Regulations, aircraft stations are authorized to use frequencies in the bands allocated to the Maritime Mobile Service for the purpose of communicating with these stations. During such operations, aircraft are required to conform to the regulations relating to the Maritime Mobile Service.

3.6.1 The International Radio Regulations provide conditions under which aircraft may participate in the Maritime Mobile Service. In general, these communications are limited to operations in which stations of the maritime mobile service are primarily involved and where direct communication between the aircaft and the ship or coast station is required, eg., distress, urgency or safety, search and rescue, etc. The maritime frequencies 156.3 and 156.8 MHz (FM emissions) may be used by aircraft stations for safety purposes only.

Maritime Mobile Public Correspondence Service

3.6.2 Aircraft stations may also engage in public correspondence with stations of the Maritime Mobile or Maritime Mobile Satellite Service under the conditions contained in the International Radio Regulations.

Sales, Test and Demonstrations

3.7 Aircraft dealers and radio sales agents who comply with paragraph 5 of the General Radio Regulations, Part I may be granted licences to install and operate radio equipment in aircraft for sales, test and demonstration purposes.

3.7.1 It appears desirable, for identification purposes, to segregate these radio licences from those normally issued for mobile (aircraft) stations in the Aeronautical Mobile Service. The term "experimental service" may be applied to mobile stations operated for demonstration purposes or in connection with the test or development of communication equipment. Therefore, an experimental station licence may be issued, endorsed "In aircraft ..... for test and demonstration purposes only."

3.7.2 The radio equipment should meet the same technical criteria as permanently installed aircraft equipment. The civil aviation authorities should be notified of the proposed installation in order that they may take action from an air worthiness point-of-view.

Technical Requirements - General

3.8 No Canadian type-approval standards have been issued for aircraft radio equipment. Such equipment (normally of U.S. manufacture) may be listed in the Radio Equipment List under a procedure outlined in notes 1), 2) and 3) hereunder, in lieu of a technical brief under Radio Standards Procedure 100, Issue 4. These procedures are equally applicable to low power aeronautical equipment installed in gliders and soaring craft.

NOTE:

1) Class I equipment: Equipments which have been approved by the FAA under appropriate Technical Standards Orders will be listed as technically acceptable in the Radio Equipment List provided that proof of approval and a copy of the FAA test report are forwarded in lieu of a brief under Radio Standards Procedure 103, Section 1.

2) Class II equipment: Equipment type accepted by the FCC may be listed as technically acceptable in the Radio Equipment List provided that proof of type acceptance and a copy of the FCC test report are forwarded in lieu of a brief under Radio Standards Procedure 103, Section 1.

3) Class III equipment: This class of equipment includes VHF airborne communications equipment not capable of operating at 50 kHz channel spacing. This equipment which is already in the Radio Equipment List will continue to be listed as technically acceptable until 50 kHz channelling plan is introduced in 1982. (See TRC 39)

3.8.1 The aviation community has adopted single sideband emissions in all Aeronautical Mobile bands between 2.8 and 22 MHz. After April 1, 1981 no new double sideband equipment may be installed in Canadian aircraft. The international technical standards are contained in Annex 10 Volume 1 of the International Civil Aviation Organization. This publication, with all amendments, should be available at Regional and District offices for guidance purposes.

4. AIRCRAFT NAVIGATIONAL SERVICE

Definition

4.1 Aircraft Navigational Service is a service provided by aural or instrument display actuated by radio apparatus installed in aircraft solely for safety or navigational purposes, and includes portable radio apparatus carried in aircraft solely for safety or survival purposes and not intended for routine operation during flight. (Ref. General Radio Regulations, Part II, Section 2).

Scope of Service

4.2 This service applies only to aircraft that do not carry radio apparatus for communication purposes and therefore, are not licensed in the Aeronautical Mobile Service. A very small number of light, private aircraft fall within this category; in most cases, they carry simple receiving equipment for ADF (automatic direction finding) purposes only. There is no provision for the issuance of a land station licence in this service.

Eligibility

4.3 The eligibility requirements are the same as those for aircraft stations. (See para. 3.1).

Frequency Bands

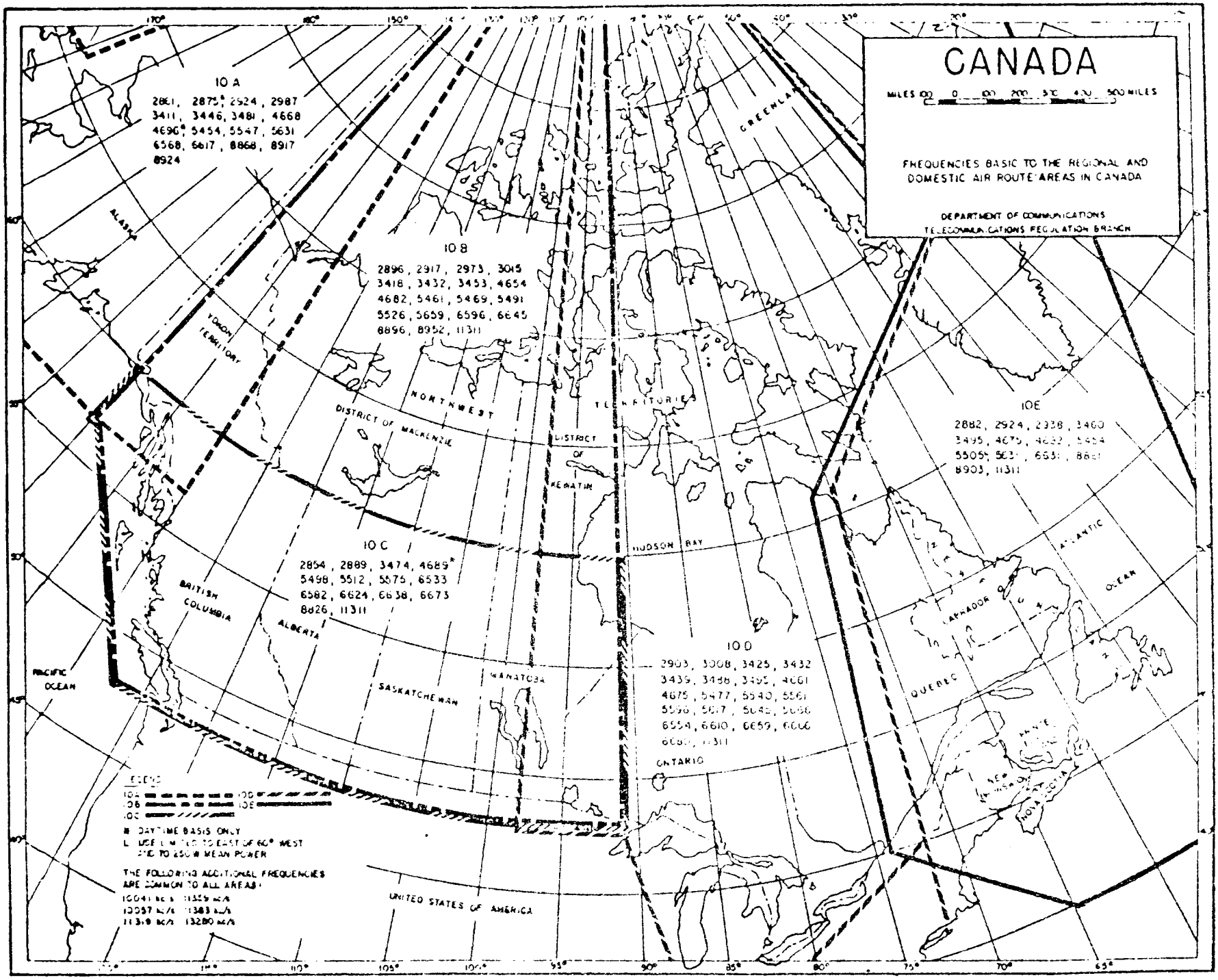
4.4

kHz	Allocation
200 - 285	Radiobeacons - Primary
285 - 325	Radiobeacons-secondary to Maritime Radionavigation
325 - 405	Radiobeacons - Primary
405 - 415	Radiobeacons - Permitted
510 - 535	Radiobeacons - Permitted. In operating stations of the aeronautical radionavigation service, all technical steps necessary shall be taken to avoid harmful interference to the Maritime Mobile Service.
1605 - 1800	Radiobeacons - Shared with fixed and mobile.

MHz	Allocation
74.6 - 75.4	The frequency 75 MHz is assigned to aeronautical marker beacons.
108 - 117.975	In accordance with VHF plan Appendix B.
328.6 - 335.14	Limited to instrument landing systems (Glide-path).
420 - 460	Radio altimeters may be used on a secondary basis.
960 - 1215	This band is utilized for DME/TACAN Operations in keeping with the frequency channelling and pairing plan in part 8 of Appendix B.
1300 - 1350 2700 - 2900 9000 - 9200	The use of these bands by the aeronautical radionavigation service is restriced to ground-based radars and, in the future, to associated airborne transponders which transmit only on frequencies in these bands and only when actuated by radars.
1540 - 1660 4200 - 4400 5000 - 5250 15.4 - 15.7 GHz	These bands are reserved on a world-wide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground based or satellite-borne facilities.

MHz	Allocation
1540 - 1660 5000 - 5250 15.4 - 15.7 GHz	These bands are also allocated to the aeronautical mobile (R) service for the use and development of systems using space communication techniques. Such use and development is subject to agreement and co-ordination between administrations concerned and those having services operating in accordance with the Table which may be affected.
5350 - 5470	The use of this band by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.
8750 - 8850	The use of this band by the aeronautical radionavigation service is limited to airborne doppler navigation aids on a centre frequency of 8800 MHz.
9300 - 9500	The use of this band by the aeronautical radionavigation service is limited to airborne weather radars, and ground-based radars. In this band ground-based radars used for meteorological purposes have priority over other radiolocation devices.
GHz	
13.25 - 13.40	Limited to doppler navigation aids.
24.25 - 25.25	In this band ground-based radionavigation aids are not permitted except where they operate in co-operation with airborne or shipborne radionavigation devices.

Radio Altimeters	4.5	Radio Altimeters may be authorized in the 420 to 460 MHz band on a secondary basis. In keeping with future developments it may be necessary to impose, on short notice, a final cut-off date for operation of any radio altimeters authorized in the 1540 to 1660 MHz band. Replacement spectrum is being sought on an international basis at 4200 - 4400 MHz for exclusive radio altimeter use.
Technical Requirements	4.6	See para. 3.8 of PM-1-2.
Privately Established Aeronautical Navigational Aids	4.7	For information concerning privately operated Aeronautical Radio Beacons and VOR Navigational systems see PM-1-4.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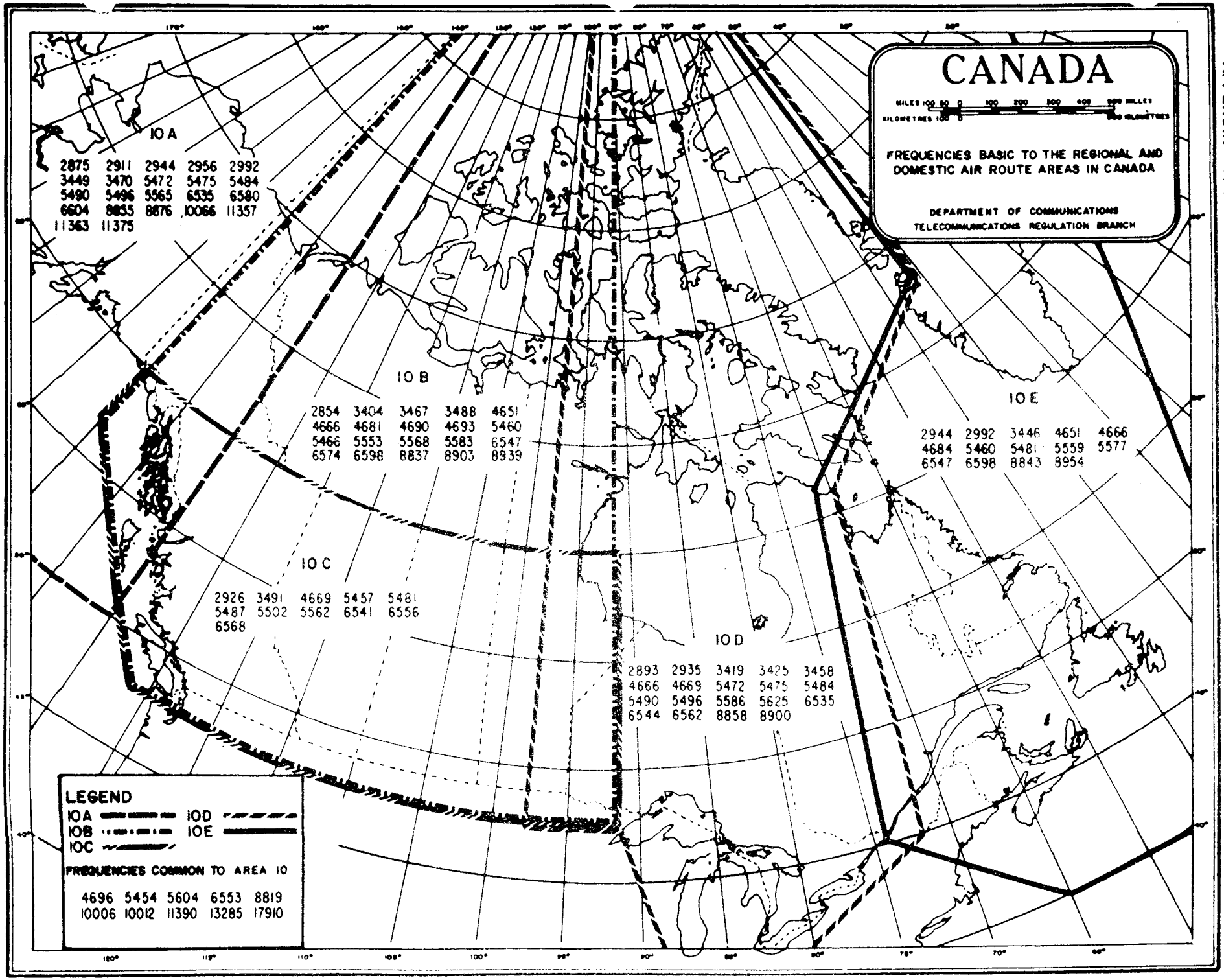
10 C
2854, 2889, 3474, 4689*
5498, 5512, 5575, 6533
6582, 6624, 6638, 6673
8826, 11311
10 D
2903, 3008, 3425, 3432
3439, 3488, 3495, 4661
4675, 5477, 5540, 5561
5596, 5617, 5682, 5686
6554, 6610, 6659, 6666
6680, 11311
10 E
2882, 2924, 2938, 3460
3495, 4675, 4682, 5484
5505*, 5631, 6631, 8861
8903, 11311
GREENLAND
ALASKA
YUKON TERRITORY
NORTHWEST TERRITORIES
DISTRICT OF MACKENZIE
KEEWATIN
HUDSON BAY
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
LABRADOR
ATLANTIC OCEAN
PACIFIC OCEAN
UNITED STATES OF AMERICA
LEGEND
10A
10B
10C
10D
10E
* DAYTIME BASIS ONLY
L USE LIMITED TO EAST OF 60° WEST AND TO 250 W MEAN POWER
THE FOLLOWING ADDITIONAL FREQUENCIES ARE COMMON TO ALL AREAS:
10041 kc/s 11359 kc/s
10057 kc/s 11383 kc/s
11319 kc/s 13280 kc/s


CANADA
FREQUENCIES BASIC TO THE REGIONAL AND DOMESTIC AIR ROUTE AREAS IN CANADA
DEPARTMENT OF COMMUNICATIONS
TELECOMMUNICATIONS REGULATION BRANCH
10 A
2875 2911 2944 2956 2992
3449 3470 5472 5475 5484
5490 5496 5565 6535 6580
6604 8855 8876 10066 11357
11363 11375
10 B
2854 3404 3467 3488 4651
4666 4681 4690 4693 5460
5466 5553 5568 5583 6547
6574 6598 8837 8903 8939
10 C
2926 3491 4669 5457 5481
5487 5502 5562 6541 6556
6568
10 D
2893 2935 3419 3425 3458
4666 4669 5472 5475 5484
5490 5496 5586 5625 6535
6544 6562 8858 8900
10 E
2944 2992 3446 4651 4666
4684 5460 5481 5559 5577
6547 6598 8843 8954
LEGEND
10A
10B
10C
10D
10E
FREQUENCIES COMMON TO AREA 10
4696 5454 5604 6553 8819
10006 10012 11390 13285 17910

CANADIAN FREQUENCY ALLOCATION/ALLOTMENT PLAN

FOR VHF AERONAUTICAL SERVICES

FOREWORD

The Frequency Allocation/Allotment Plan for the VHF Aeronautical Radionavigation and Mobile Services, as set forth in the following pages, shows Canadian policy relative to the allocation, allotment, co-ordination and use of spectrum in the 74.6-75.4 and 108-137 MHz bands. This plan is intended primarily to serve as a guide for persons engaged in the selection, co-ordination and assignment of frequencies for Aeronautical purposes. The associated radio facilities shall be licensed pursuant to the provisions of the Radio Act and Radio Regulations.

In this plan, band-edges have been adjusted to provide for future channelling based on 25 kHz spacing. However, the first and last assignable frequencies shown in PART 1 of the Plan are based on channelling currently in use. The notes in PART 2 include comments on band-edge frequencies which are available with reduced spacing.

FREQUENCY BANDS FOR THE VHF AERONAUTICAL SERVICES

The following table indicates for each frequency band listed, the service and primary use of the band. The spacing refers to the channel spacing utilized in the band at the present time and the first and last assignable frequencies are those available for the channel spacing employed. Explanatory notes applicable to each band may be found on the following pages.

FREQUENCY BAND (MHz)	SERVICE	USE	SPACING	FIRST ASSIGNABLE FREQUENCY	LAST ASSIGNABLE FREQUENCY	SEE NOTES
74.6-75.4	Aero. Radionav.	Marker beacon				N1
108.000-111.975	Aero. Radionav.	1. Localizer 2. VOR	100 kHz	108.0	111.90	N2
111.975-117.975	Aero. Radionav.	VOR	100 kHz	112.0	117.9	N3
*** 117.975-121.9625	Aero. Mobile (R)	ATCS	50/25 kHz	118.0	121.95	N4, 12
*** 121.9625-123.5875	Aero. Mobile (R)	GAC	50 kHz	122.0	123.55	N5, 10
*** 123.5875-128.8125	Aero. Mobile (R)	ATCS	50/25 kHz	123.6	128.8	N6, 10, 12
*** 128.8125-132.0125	Aero. Mobile (R)	AOCC	25 kHz	128.850	132.0	N7, 9
132.0125-136.0	Aero. Mobile (R)	ATCS	50/25 kHz	132.025	135.975	N8, 12
136.0-137.0	Aero. Mobile (R)	FOR FUTURE USE				N11

ATCS Air Traffic Control Services
GAC General Aviation Communications
AOCC Aeronautical Operational Control Communications

EXPLANATORY NOTES

N1 Marker beacons are assigned the frequency 75.0 MHz.

N2 A) The band 108.0-111.975 MHz is allocated for ILS localizer use. Only frequencies ending in either odd tenths of a megahertz (e.g. 108.5 MHz) or odd tenths plus a twentieth of a megahertz (e.g. 108.55 MHz) may be assigned (together with their associated glide path and/or DME channels).

At the present time only frequencies ending in odd tenths of a megahertz are normally assigned (together with their associated glide path and/or DME channels).

First assignable frequency 108.3 MHz (108.0 and 108.1 MHz are ramp check frequencies)

Last assignable frequency 111.9 MHz.

B) The band 108.0-111.975 MHz is allocated for Terminal VOR use provided no harmful interference is caused to adjacent channel ILS localizer assignments. Only frequencies ending in either even tenths of a megahertz (e.g. 108.6) or even tenths plus a twentieth of a Megahertz (e.g. 108.65) may be assigned (together with their associated DME channels if applicable). Limited to 50 watts transmitter power.

At the present time only frequencies ending in even tenths of a megahertz are normally assigned (together with their associated DME channels if applicable).

First assignable frequency 108.2 MHz

Last assignable frequency 111.8 MHz.

*** C) VHF Omnitest (VOT) facilities are normally assigned 111.8 MHz if no conflict would exist to operational facilities. Otherwise, each lower 200 kHz channel will be examined in turn to determine its suitability. VOT assignments are on a non-interference basis to operational facilities.

D) 108.0 MHz is a band-edge frequency. However, its use for ramp check purposes is not expected to cause interference.

N3 A) The band 111.975-117.975 MHz is allocated for VOR use. Limited to 200 watts transmitter power. Only frequencies ending in tenths of a megahertz or tenths of a megahertz plus a twentieth of a megahertz may be assigned (together with their associated DME channels, if applicable).

At the present time only frequencies ending in tenths of a megahertz are normally assigned (together with their associated DME channels if applicable).

First assignable frequency 112.0 MHz.

Last assignable frequency 117.9 MHz.

B) See Part 7 for VHF/UHF NAVAID Frequency Channelling and Pairing. Upon the assignment of one or more frequencies from the pairing table to a location, the associated frequencies for that pairing arrangement shall be protected for that location in the same manner as if they were assigned.

N4 A) The band 117.975-121.9625 MHz is used mainly, but not exclusively, for airport control towers in Canada.

B) The nearest assignable frequencies on either side of 121.5 MHz are 121.4 MHz and 121.6 MHz.

C) In addition to the emergency uses of 121.5 MHz as outlined in paragraph 4.1.3.1.1 of the Aeronautical Telecommunications - Annex 10 (ICAO) this frequency may also be used:

i) for search and rescue operations concerning manned space vehicles,
ii) in emergency position indicator beacons solely to indicate the position of downed aircraft or sunken ships.

D) 121.6-121.9625 MHz band allotted internationally/ nationally for aerodrome surface communications.

E) 121.95 MHz available for assignment on basis of 25 kHz spacing only.

N5 A) Flight Service Station operations would normally be accommodated in this band.

B) CANADA/U.S. co-ordination of frequencies in this band not required unless probability of harmful interference exists.

C) i) 123.1 MHz is the aeronautical frequency auxilliary to 121.5 MHz,
ii) 123.1 MHz may also be used for temporary tower operations.

*** iii) 123.1 MHz may also be used for emergency coordination centres.

D) Mobile stations of the Maritime Mobile Service may communicate on 121.5 and 123.1 MHz for Safety Purposes with Stations of the Aeronautical Mobile Service.

E) i) Frequencies 123.2, 123.3, 123.4 and 123.5 MHz may also be made available for soaring activities on a temporary basis at specific locations subject to demonstrated need.

ii) 123.3 MHz is also available, subject to the same conditions, for manned balloon flight operations.

*** iii) 123.3 MHz is available for use by ultra light aircraft for instructional purposes only and is to be shared with other users.

*** iv) 123.4 MHz is also available for hang gliding activities and is subject to sharing with other users.

F) i) Frequencies 123.2, 123.3, 123.4, and 123.5 MHz may be used, on a shared basis, for DOT Flight Inspections subject to advance co-ordination with and approval of the local DOC District Office,

ii) At aerodromes where no aeronautical ground stations exist, 123.2 MHz is used by pilots to broadcast advisory information concerning their position, altitude and intentions,

iii) 123.2 MHz may also be used for ground communications stations operated for the DOT for the purpose of passing weather and other information to aircraft.

G) 122.0 MHz available for assignment on the basis of 50 or 25 kHz spacing.

*** H) 122.050 MHz may be used by emergency vehicles.

I) 123.55 MHz available for assignment on the basis of 50 or 25 kHz spacing.

J) 123.575 MHz available for assignment on the basis of 25 kHz spacing only.

K) 122.5 and 122.8 MHz are available for assignment to aircraft to activate runway lights at remotely located airstrips by using VHF coded signals to trigger switching devices.

L) 123.5 MHz is available for use by the Royal Canadian Flying Clubs Association.

N6 Band 123.5875-128.8125 MHz used mainly, but not exclusively, for terminal control units in Canada.

N7 Refer to the provisions of the Canada/U.S.A. channelling arrangements for this band.

N8 A) The band 132.0125-136.0 MHz is used mainly, but not exclusively, for Area Control Centres in Canada.

B) 132.025 MHz available for assignment on basis of 25 kHz spacing only.

N9 135.975 MHz available for assignment on basis of 25 kHz spacing only due to equipment limitations.

N10 Domestic paid air-ground service may be provided on any of the assigned VHF air/ground frequencies, with the exception of 121.5 MHz, at Flight Service Stations.

N11 Aeronautical mobile (R) stations shall not use frequencies in the 136.0-137.0 MHz band until January 1, 1990.

N12 Frequencies in this band, assigned to Air Traffic Control Towers and identified as mandatory frequencies by Transport Canada, may also be used by Flight Service Stations for airport advisory purposes during periods when the Control Tower is closed.

100 kHz Channelling Plan for
the GAC Band of
121.9625-123.5875 MHz
(Valid until March 31, 1982)

MHz	Allocation
121.975	RESERVED.
122.000	FSS.
122.025	RESERVED.
122.050	RESERVED.
122.075	RESERVED.
122.100	CARS (primary), FSS (secondary) and ramp control at designated international airports.
122.125	RESERVED.
122.150	RESERVED.
122.175	RESERVED.
122.200	FSS.
122.225	RESERVED.
122.250	RESERVED.
122.275	RESERVED.
122.300	FSS.
122.325	RESERVED.
122.350	Future Allocation.
122.375	RESERVED. Flight service station (6101-3 Feb 28 1991)
122.400	Forest Fire Control, Large Scale Aerial Spraying.
122.425	RESERVED.
122.450	Available for allocation.
122.475	RESERVED.
122.500	FSS
122.525	RESERVED.
122.550	RESERVED.
122.575	RESERVED.
122.625	RESERVED.
122.650	RESERVED.
122.675	RESERVED.
122.700	Private Advisory (UCA).
122.725	PA - Private Aerodromes.
122.750	PA - Private Aerodromes.
122.775	Future PA or PM.
122.800	Private Advisory (UCA).
122.825	Future PA or PM.
122.850	Private Advisory (CA).
122.875	Private Multiple Non-Govt.
122.900	Private Multiple.
122.925	Private Multiple - Govt.
122.950	Private Advisory (CA).
122.975	Future PA or PM.

	MHz	Allocation
	123.000	Private Advisory (CA) (UCA).
	123.025	RESERVED.
	123.050	RESERVED.
	123.075	RESERVED.
***	123.100	Utility Vehicle Control, ECC'S.
	123.100	World Wide SAR
	123.125	RESERVED.
	123.150	RESERVED.
	123.175	RESERVED.
	123.200	Flight Training, Flight Test, Soaring.
	123.225	RESERVED.
	123.250	RESERVED.
	123.275	RESERVED.
	123.300	Flight Training, Flight Test, Soaring, Manned Balloon.
	123.325	RESERVED.
	123.350	RESERVED.
	123.375	RESERVED.
	123.400	Flight Training, Flight Test, Soaring.
	123.425	RESERVED.
	123.450	RESERVED.
	123.475	RESERVED.
	123.500	Flight Training, Royal Cdn. Flying Clubs Ass'n., Flight Test, Soaring.
	123.525	RESERVED.
	123.550	RESERVED.
	123.575	Available for Allocation.

PA: PRIVATE ADVISORY.
PM: PRIVATE MULTIPLE.
CA: CONTROLLED AERODROME.
UCA: UNCONTROLLED AERODROME.
GA: GENERAL AVIATION.
CARS: COMMUNITY AERODROME RADIO STATION.
ECC: EMERGENCY COORDINATION CENTRE.
FSS: FLIGHT SERVICE STATION.

Guidelines on frequency assignment and allocation in the 121.9625 - 123.5875 MHz band pending the introduction of the 25 kHz channelling plan in 1985

1. The provisions of TRC-39 shall be taken into account.

2. Frequencies are marked "reserved" in Part 3 of the "CFAAPVAS" Plan in instances where their use could cause a problem to broadband receivers. When the date for implementation of the reduced channelling plan becomes effective, such frequencies will be deemed to be available for national allocation.

3. Frequencies are to be assigned only for the purpose for which they are allocated. Therefore, any assignments made which are not in conformity with the Plan must be on a conditional basis and shall not prejudice assignment of frequencies in keeping with the Plan.

4. Suggestions for change to existing allocations or for new allocations shall be referred to Headquarters for consideration on the basis of national requirements.

5. In cases where frequencies are re-allocated under the 50 kHz channelling plan, the Regions are to ensure that necessary frequency changes for existing assignments (including licence amendments) are carried out to ground station equipment prior to the dates for implementation of the 25 kHz channelling plan.

6. Headquarters will carry out periodic reviews of frequency allocations and effect changes or new allocations as appropriate.

ADDITIONAL FREQUENCY ALLOCATIONS

108.0 MHz	VOR Ramp Check only.
108.1 MHz	Localizer Ramp Check only.
121.5 MHz	Emergency.
126.2 MHz	Military - airport control towers.
126.7 MHz	Flight Service Station.
126.9 MHz	Flight Service Station paid service - international air carrier.
127.1 MHz	Flight Service Station paid service - international air carrier at Gander, Nfld.
127.9 MHz	Flight Service Station paid service - international air carrier at Schefferville, P.Q.
129.075 MHz	Reserved in Canada for Department of Transport flight dispatch
129.275 MHz	Reserved in Canada for Air Ambulance Service.
131.55 MHz	Reserved in Canada and U.S. for aeronautical digital data links.
134.1 MHz	Military Precision Approach Radar.
135.85 MHz	Common Canada/U.S.A. Flight Inspection.
135.9 MHz	Common Canada/U.S.A. Military VFR Advisory Service.
135.95 MHz	Common Canada/U.S.A. Flight Inspection.

50 kHz Channelling Plan for
the GAC Band of
121.9625-123.5875 MHz
(Valid Until March 31, 1985)

MHz	Allocation
121.975	RESERVED.
122.000	FSS.
122.025	RESERVED.
122.050	Forest Fire Control.
122.075	RESERVED.
122.100	CARS (primary), FSS (secondary)
122.125	RESERVED.
122.150	Available for Allocation.
122.175	RESERVED.
122.200	FSS.
122.225	RESERVED.
122.250	Forest Fire Control.
122.275	RESERVED.
122.300	FSS.
122.325	RESERVED.
122.350	Available for Allocation.
122.375	RESERVED.
122.400	Forest Fire Control, Large Scale Aerial Spraying.
122.425	RESERVED.
122.450	Available for Allocation.
122.475	RESERVED.
122.500	FSS
122.525	RESERVED.
122.550	Available for Allocation.
122.575	RESERVED.
122.625	RESERVED.
122.650	Forest Fire Control.
122.675	RESERVED.
122.700	Private Advisory (UCA).
122.725	PA - Private Aerodromes.
122.750	PA - Private Aerodromes. Air-to-Air - GA.
122.775	Future PA or PM.
122.800	Private Advisory (UCA).
122.825	Future PA or PM.
122.850	Private Multiple.
122.875	Private Multiple Non-Govt.
122.900	Private Multiple.
122.925	Private Multiple - Govt.
122.950	Private Advisory (CA).
122.975	Available for Allocation.

	MHz	Allocation
	123.000	Private Advisory (UCA).
	123.025	Future PA or PM.
	123.050	PA - Heliports.
	123.075	RESERVED.
***	123.100	Utility Vehicle Control, ECC's
	123.100	World Wide SAR
	123.125	RESERVED.
	123.150	FSS
	123.175	RESERVED.
	123.200	Flight Training, Flight Test.
	123.225	RESERVED.
	123.250	FSS
	123.275	RESERVED.
	123.300	Flight Training, Flight Test.
	123.325	RESERVED.
	123.350	Flight Training.
	123.375	RESERVED.
	123.400	Flight Training, Flight Test.
	123.425	RESERVED.
	123.450	FSS
	123.475	RESERVED.
	123.500	Flight Training, Flight Test.
	123.525	RESERVED.
	123.550	FSS
	123.575	Available for Allocation.

PA: PRIVATE ADVISORY.
PM: PRIVATE MULTIPLE.
CA: CONTROLLED AERODROME.
UCA: UNCONTROLLED AERODROME.
GA: GENERAL AVIATION.
CARS: COMMUNITY AERODROME RADIO STATION.
ECC: EMERGENCY COORDINATION CENTRE.
FSS: FLIGHT SERVICE STATION.

Guidelines on Frequency Assignment and Allocation in the 121.9625 - 123.5875 MHz Band pending the Introduction of Full 50 kHz and 25 kHz Channelling Plans in 1982 and 1985 Respectively

1. The provisions of TRC-39 shall be taken into account.

2. Preference will be given at this time to making assignments from the 50 kHz channelling plan (see Part 4 of the "CFAAPVAS" Plan) taking into account the ability of the applicant to meet these requirements. This will facilitate the transition from the existing 100 kHz channelling plan to a full 50 kHz plan in 1982.

3. It will be noted that the revised 100 kHz channelling plan (see Part 3 of the "CFAAPVAS" Plan) contains some 50 kHz channels, existing for some time, and others that are not expected to cause interference to broadband assignments (e.g., 122.875 and 122.925 kHz, etc.,) noting the nature of the broadband allocations. Consequently, these narrowband allocations can be assigned at this time.

4. Protection shall be afforded 100 kHz channelled receivers and 50 kHz channelled receivers during the protected periods (see TRC-39).

5. Frequencies are marked "reserved" in Parts 3 and 4 of the "CFAAPVAS" Plan in instances where their use could cause a problem to broadband receivers. When dates for implementation of reduced channelling plans become effective such frequencies will be deemed to be available for national allocation.

6. Frequencies are to be assigned only for the purpose for which they are allocated. Therefore, any assignments made which are not in conformity with the Plan must be on a conditional basis and shall not prejudice assignment of frequencies in keeping with the Plan.

7. Suggestions for change to existing allocations or for new allocations shall be referred to Ottawa Headquarters for consideration on the basis of national requirements.

8. In instances where frequencies have been "re-allocated" under the recently promulgated 100 kHz and 50 kHz channelling plans, the Regions are to ensure that necessary frequency changes for existing assignments (including licence amendments) are carried out to ground station equipment prior to the dates for implementation of the 50 and 25 kHz channelling plans.

9. Headquarters will carry out a general review of frequency allocations existing on implementation dates and effect changes or new allocations as appropriate.

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ADDITIONAL FREQUENCY ALLOCATIONS

108.0 MHz	VOR Ramp Check only.
108.1 MHz	Localizer Ramp Check only.
114.8 MHz	VOR Omnitest (VOT) - first choice.
115.7 MHz	VOR Omnitest (VOT) - second choice.
121.5 MHz	Emergency.
126.2 MHz	Military - airport control towers.
126.7 MHz	Flight Service Station.
126.9 MHz	Flight Service Station paid service - international air carrier.
127.1 MHz	Flight Service Station paid service - international air carrier at Gander, Nfld.
127.3 MHz	Flight Service Station paid service - international air carrier at Vancouver, B.C.
127.9 MHz	Flight Service Station paid service - international air carrier at Schefferville, P.Q.
129.075 MHz	Reserved in Canada for Department of Transport flight dispatch
129.275 MHz	Reserved in Canada for Air Ambulance Service.
131.55 MHz	Reserved in Canada and U.S. for aeronautical digital data links.
134.1 MHz	Military Precision Approach Radar.
135.85 MHz	Common Canada/U.S.A. Flight Inspection.
135.95 MHz	Common Canada/U.S.A. Flight Inspection.
135.9 MHz	Common Canada/U.S.A. Military VFR Advisory Service.

SPECIAL COORDINATION ATCS/AOCC/GAC BAND-EDGE FREQUENCIES

The following band-edge frequencies require National co-ordination through Headquarters with respect to the adjacent ATCS, AOCC, or GAC assignments in order that adjacent channel interference can be avoided in their implementation:

1) 123.5-123.6 MHz inclusive.
2) 128.8-128.85 MHz inclusive.
3) 132 MHz.
4) 132.025 MHz.

123.6, 128.8 and 132.0 MHz may be available for assignment on the basis of 50 or 25 kHz spacing subject to this special coordination procedure.

SPECIAL COORDINATION ATCS/AOCC/GAC BAND-EDGE FREQUENCIES

The following band-edge frequencies require National co-ordination through Headquarters with respect to the adjacent ATCS, AOCC, or GAC assignments in order that adjacent channel interference can be avoided in their implementation:

1) 123.5-123.6 MHz inclusive.
2) 128.8-128.85 MHz inclusive.
3) 132 MHz.
4) 132.025 MHz.

123.6, 128.8 and 132.0 MHz may be available for assignment on the basis of 50 or 25 kHz spacing subject to this special coordination procedure.

AERONAUTICAL NAVAID RAMP TEST FREQUENCIES

In Canada and the United States, certain aeronautical radio frequencies are designated for use with ramp testers which radiate signals for ground testing of avionic navigation systems such as VOR, LOC, G/S and DME.

The frequencies that are permitted for ramp testing purposes are as follows:

FUNCTION	RAMP TEST FREQUENCY AS OF 1 JANUARY 1976
VOR	108.0 MHz
Localizer	108.1 MHz
Glide Slope (Path)	334.7 MHz
DME/TACAN	979 MHz (CH 18)
	978 MHz (CH 17)

Tests requiring use of other frequencies shall be hard-wired to ensure no radiated interference occurs to operational systems.

VHF/UHF NAVAIDS
FREQUENCY CHANNELLING AND PAIRING

Channel	VOR	DME/TACAN				ILS	
		Airborne		Ground			
		Int.Freq.	Pulse Code	Reply Freq.	Pulse Code	Localiser	Glide Slope
	MHz	MHz	usec	MHz	usec	MHz	MHz
1X		1025	12	962	12		
1Y		1025	36	1088	30		
2X		1026	12	963	12		
2Y		1026	36	1089	30		
3X		1027	12	964	12		
3Y		1027	36	1090	30		
4X		1028	12	965	12		
4Y		1028	36	1091	30		
5X		1029	12	966	12		
5Y		1029	36	1092	30		
6X		1030	12	967	12		
6Y		1030	36	1093	30		
7X		1031	12	968	12		
7Y		1031	36	1094	30		
8X		1032	12	969	12		
8Y		1032	36	1095	30		
9X		1033	12	970	12		
9Y		1033	36	1096	30		
10X		1034	12	971	12		
10Y		1034	36	1097	30		
11X		1035	12	972	12		
11Y		1035	36	1098	30		
12X		1036	12	973	12		
12Y		1036	36	1099	30		
13X		1037	12	974	12		
13Y		1037	36	1100	30		
14X		1038	12	975	12		
14Y		1038	36	1101	30		
15X		1039	12	976	12		
15Y		1039	36	1102	30		
16X		1040	12	977	12		
16Y		1040	36	1103	30		
17X **	108.00	1041	12	978	12		
17Y **	108.05	1041	36	1104	30		
18X		1042	12	979	12	108.10	334.70
18Y		1042	36	1105	30	108.15	334.55
19X	108.2	1043	12	980	12		
19Y	108.45	1043	36	1106	30		

NOTE: Channels 1X through 16Y and 60X through 69Y 124Y, 125Y and 126Y utilize frequencies on or adjacent to secondary surveillance radar and transponder frequencies and are not available for civil operations in Canada.

** see part 3

VHF/UHF NAVAIDS Cont'd

Channel	VOR	DME/TACAN				ILS	
		Airborne		Ground			
		Int.Freq.	Pulse Code	Reply Freq.	Pulse Code	Localizer	Glide Slope
	MHz	MHz	usec	MHz	usec	MHz	MHz
20X		1044	12	981	12	108.3	334.10
20Y		1044	36	1107	30	108.35	333.95
21X	108.4	1045	12	982	12		
21Y	108.45	1045	36	1108	30		
22X		1046	12	983	12	108.5	329.90
22Y		1046	36	1109	30	108.55	329.75
23X	108.6	1047	12	984	12		
23Y	108.65	1047	36	1110	30		
24X		1048	12	985	12	108.7	330.50
24Y		1048	36	1111	30	108.75	330.35
25X	108.8	1049	12	986	12		
25Y	108.85	1049	36	1112	30		
26X		1050	12	987	12	108.9	329.30
26Y		1050	36	1113	30	108.95	329.15
27X	109.00	1051	12	988	12		
27Y	109.05	1051	36	1114	30		
28X		1052	12	989	12	109.1	331.40
28Y		1052	36	1115	30	109.15	331.25
29X	109.2	1053	12	990	12		
29Y	109.25	1053	36	1116	30		
30X		1054	12	991	12	109.3	332.00
30Y		1054	36	1117	30	109.35	331.85
31X	109.4	1055	12	992	12		
31Y	109.45	1055	36	1118	30		
32X		1056	12	993	12	109.50	332.60
32Y		1056	36	1119	30	109.55	332.45
33X	109.6	1057	12	994	12		
33Y	109.65	1057	36	1120	30		
34X		1058	12	995	12	109.70	333.20
34Y		1058	36	1121	30	109.75	333.05
35X	109.8	1059	12	996	12		
35Y	109.85	1059	36	1122	30		
36X		1060	12	997	12	109.90	333.80
36Y		1060	36	1123	30	109.95	333.65
37X	110.00	1061	12	998	12		
37Y	110.05	1061	36	1124	30		
38X		1062	12	999	12	110.1	334.40
38Y		1062	36	1125	30	110.15	334.25
39X	110.20	1063	12	1000	12		
39Y	110.25	1063	36	1126	30		
40X		1064	12	1001	12	110.3	335.00
40Y		1064	36	1127	30	110.35	334.85
41X	110.40	1065	12	1002	12		
41Y	110.45	1065	36	1128	30		

VHF/UHF NAVAIDS Cont'd

Channel	VOR	DME/TACAN				ILS	
		Airborne		Ground			
		Int.Freq.	Pulse Code	Reply Freq.	Pulse Code	Localizer	Glide Slope
	MHz	MHz	usec	MHz	usec	MHz	MHz
42X		1066	12	1003	12	110.5	329.60
42Y		1066	36	1129	30	110.55	329.45
43X	110.60	1067	12	1004	12		
43Y	110.65	1067	36	1130	30		
44X		1068	12	1005	12	110.70	330.20
44Y		1068	36	1131	30	110.75	330.05
45X	110.80	1069	12	1006	12		
45Y	110.85	1069	36	1132	30		
46X		1070	12	1007	12	110.90	330.80
46Y		1070	36	1133	30	110.95	330.65
47X	111.00	1071	12	1008	12		
47Y	111.05	1071	36	1134	30		
48X		1072	12	1009	12	111.10	331.70
48Y		1072	36	1135	30	111.15	331.55
49X	111.20	1073	12	1010	12		
49Y	111.25	1073	36	1136	30		
50X		1074	12	1011	12	111.30	332.30
50Y		1074	36	1137	30	111.35	332.15
51X	111.40	1075	12	1012	12		
51Y	111.45	1075	36	1138	30		
52X		1076	12	1013	12	111.50	332.9
52Y		1076	36	1139	30	111.55	332.75
53X	111.60	1077	12	1014	12		
53Y	111.65	1077	36	1140	30		
54X		1078	12	1015	12	111.70	333.5
54Y		1078	36	1141	30	111.75	333.35
55X	111.80	1079	12	1016	12		
55Y	111.85	1079	36	1142	30		
56X		1080	12	1017	12	111.90	331.1
56Y		1080	36	1143	30	111.95	330.95
57X	112.00	1081	12	1018	12		
57Y	112.05	1081	36	1144	30		
58X	112.10	1082	12	1019	12		
58Y	112.15	1082	36	1145	30		
59X	112.20	1083	12	1020	12		
59Y	112.25	1083	36	1146	30		
60X		1084	12	1021	12		
60Y		1084	36	1147	30		
61X		1085	12	1022	12		
61Y		1085	36	1148	30		
62X		1086	12	1023	12		
62Y		1086	36	1149	30		
63X		1087	12	1024	12		
63Y		1087	36	1150	30		

VHF/UHF NAVAIDS Cont'd

Channel	VOR	DME/TACAN				ILS	
		Airborne		Ground			
		Int.Freq.	Pulse Code	Reply Freq.	Pulse Code	Localizer	Glide Slope
	MHz	MHz	usec	MHz	usec	MHz	MHz
64X		1088	12	1151	12		
64Y		1088	36	1025	30		
65X		1089	12	1152	12		
65Y		1089	36	1026	30		
66X		1090	12	1153	12		
66Y		1090	36	1027	30		
67X		1091	12	1154	12		
67Y		1091	36	1028	30		
68X		1092	12	1155	12		
68Y		1092	36	1029	30		
69X		1093	12	1156	12		
69Y		1093	36	1030	30		
70X	112.30	1094	12	1157	12		
70Y	112.35	1094	36	1031	30		
71X	112.40	1095	12	1158	12		
71Y	112.45	1095	36	1032	30		
72X	112.50	1096	12	1159	12		
72Y	112.55	1096	36	1033	30		
73X	112.60	1097	12	1160	12		
73Y	112.65	1097	36	1034	30		
74X	112.70	1098	12	1161	12		
74Y	112.75	1098	36	1035	30		
75X	112.80	1099	12	1162	12		
75Y	112.85	1099	36	1036	30		
76X	112.90	1100	12	1163	12		
76Y	112.95	1100	36	1037	30		
77X	113.00	1101	12	1164	12		
77Y	113.05	1101	36	1038	30		
78X	113.10	1102	12	1165	12		
78Y	113.15	1102	36	1039	30		
79X	113.20	1103	12	1166	12		
79Y	113.25	1103	36	1040	30		
80X	113.30	1104	12	1167	12		
80Y	113.35	1104	36	1041	30		
81X	113.40	1105	12	1168	12		
81Y	113.45	1105	36	1042	30		
82X	113.50	1106	12	1169	12		
82Y	113.55	1106	36	1043	30		
83X	113.60	1107	12	1170	12		
83Y	113.65	1107	36	1044	30		
84X	113.70	1108	12	1171	12		
84Y	113.75	1108	36	1045	30		

VHF/UHF NAVAIDS Cont'd

Channel	VOR	DME/TACAN				ILS	
		Airborne		Ground			
		Int.Freq.	Pulse Code	Reply Freq.	Pulse Code	Localizer	Glide Slope
	MHz	MHz	usec	MHz	usec	MHz	MHz
85X	113.80	1109	12	1172	12		
85Y	113.85	1109	36	1046	30		
86X	113.90	1110	12	1173	12		
86Y	113.95	1110	36	1047	30		
87X	114.00	1111	12	1174	12		
87Y	114.05	1111	36	1048	30		
88X	114.10	1112	12	1175	12		
88Y	114.15	1112	36	1049	30		
89X	114.20	1113	12	1176	12		
89Y	114.25	1113	36	1050	30		
90X	114.30	1114	12	1177	12		
90Y	114.35	1114	36	1051	30		
91X	114.40	1115	12	1178	12		
91Y	114.45	1115	36	1052	30		
92X	114.50	1116	12	1179	12		
92Y	114.55	1116	36	1053	30		
93X	114.60	1117	12	1180	12		
93Y	114.65	1117	36	1054	30		
94X	114.70	1118	12	1181	12		
94Y	114.75	1118	36	1055	30		
95X	114.80	1119	12	1182	12		
95Y	114.85	1119	36	1056	30		
96X	114.90	1120	12	1183	12		
96Y	114.95	1120	36	1057	30		
97X	115.00	1121	12	1184	12		
97Y	115.05	1121	36	1058	30		
98X	115.10	1122	12	1185	12		
98Y	115.15	1122	36	1059	30		
99X	115.20	1123	12	1186	12		
99Y	115.25	1123	36	1060	30		
100X	115.30	1124	12	1187	12		
100Y	115.35	1124	36	1061	30		
101X	115.40	1125	12	1188	12		
101Y	115.45	1125	36	1062	30		
102X	115.50	1126	12	1189	12		
102Y	115.55	1126	36	1063	30		
103X	115.60	1127	12	1190	12		
103Y	115.65	1127	36	1064	30		
104X	115.70	1128	12	1191	12		
104Y	115.75	1128	36	1065	30		
105X	115.80	1129	12	1192	12		
105Y	115.85	1129	36	1066	30		
106X	115.90	1130	12	1193	12		
106Y	115.95	1130	36	1067	30		
107X	116.00	1131	12	1194	12		
107Y	116.05	1131	36	1068	30		

VHF/UHF NAVAIDS Cont'd

Channel	VOR	DME/TACAN				ILS	
		Airborne		Ground			
		Int.Freq.	Pulse Code	Reply Freq.	Pulse Code	Localizer	Glide Slope
	MHz	MHz	usec	MHz	usec	MHz	MHz
108X	116.10	1132	12	1195	12		
108Y	116.15	1132	36	1069	30		
109X	116.20	1133	12	1196	12		
109Y	116.25	1133	36	1070	30		
110X	116.30	1134	12	1197	12		
110Y	116.35	1134	36	1071	30		
111X	116.40	1135	12	1198	12		
111Y	116.45	1135	36	1072	30		
112X	116.50	1136	12	1199	12		
112Y	116.55	1136	36	1073	30		
113X	116.60	1137	12	1200	12		
113Y	116.65	1137	36	1074	30		
114X	116.70	1138	12	1201	12		
114Y	116.75	1138	36	1075	30		
115X	116.80	1139	12	1202	12		
115Y	116.85	1139	36	1076	30		
116X	116.90	1140	12	1203	12		
116Y	116.95	1140	36	1077	30		
117X	117.00	1141	12	1204	12		
117Y	117.05	1141	36	1078	30		
118X	117.10	1142	12	1205	12		
118Y	117.15	1142	36	1079	30		
119X	117.20	1143	12	1206	12		
119Y	117.25	1143	36	1080	30		
120X	117.30	1144	12	1207	12		
120Y	117.35	1144	36	1081	30		
121X	117.40	1145	12	1208	12		
121Y	117.45	1145	36	1082	30		
122X	117.50	1146	12	1209	12		
122Y	117.55	1146	36	1083	30		
123X	117.60	1147	12	1210	12		
123Y	117.65	1147	36	1084	30		
124X	117.70	1148	12	1211	12		
124Y	117.75	1148	36	1085	30		
125X	117.80	1149	12	1212	12		
125Y	117.85	1149	36	1086	30		
126X	117.90	1150	12	1213	12		
126Y	117.95	1150	36	1087	30		

GLOSSARY

CANADA/U.S. AERONAUTICAL TERMS

SECTION 1: CANADIAN TERMS

Flight Service Station:

An aeronautical station operated by the Department of Transport capable of air/ground voice communication other than an air traffic control unit.

Aerodrome:

Any area of land, water (including the frozen surface thereof) or any other supporting surface used or designed, prepared, equipped or set apart for use whether in whole or in part for the arrival and departure, movement or servicing, of aircraft and includes any buildings, installations and equipment in connection therewith.

Aeronautical Operational Control Communications (AOCC):

Aeronautical operational control communications in the Aeronautical Mobile (R) Service are related to the regularity of flight.

Aircraft Navigational Service:

A service provided by aural or instrument display actuated by radio apparatus installed in aircraft solely for safety or navigational purposes, and includes portable radio apparatus carried in aircraft solely for safety or survival purposes and not intended for operation during flight.

Air Traffic Control Services (ATCS):

A service provided by or on behalf of Air Services Branch, Department of Transport for the purpose of

a) preventing collisions

   (i) between aircraft; and
   (ii) on the manoeuvring area between aircraft and obstructions, and

b) expediting and maintaining an orderly flow of air traffic.

Air Traffic Control Unit:

An area control centre established to provide air traffic control service to IFR aircraft and controlled VFR aircraft; a terminal control unit established to provide air traffic control service to IFR aircraft arriving at, or departing from, one or more airports; or an airport control tower unit established to provide air traffic control service to airport traffic; as the circumstances require.

Airport:

An aerodrome for which an airport licence has been issued by the Minister of Transport.

Canada/U.S. Co-ordination Agreement:

An Agreement between Canada and the United States relating to the co-ordination and use of radio frequencies above 30 Megahertz.

Community Aerodrome Radio Station (CARS):

A radio station at a category B or C airport providing a service under the Arctic Airports Facilities Policy (DOT) and operated by the Territorial Governments.

Controlled Airport:

An airport at which an air traffic control unit is provided.

Direct Pilot-Dispatcher Communication (DPDC):

A service provided to air carriers on a frequency assigned to the carrier utilizing Department of Transport equipment supplied on a monthly rental basis.

Distance Measuring Equipment (DME):

A UHF omnidirectional radionavigation system which indicates the slant distance in nautical miles from a ground station to a participating aircraft.

Domestic Paid Air Ground:

A communications service provided by Flight Service stations to domestic air carriers for which a fee is paid.

Flight Inspection:

The checking of Navigational Aid transmitters by means of test equipment mounted in an aircraft to ensure compliance with required or published tolerances.

Flight Test Station:

Land and aircraft stations authorized to communicate essential instructions while aircraft are undergoing tests of motors or other components.

Flight Training Station:

An aeronautical station established to provide for communication in connection with pilot training.

General Aviation Communications:

Communications relating to the safe, expeditious and economical operation of, primarily, non-scheduled aircraft.

Ground Communications:

Communications between the aircraft operating agency's local station and the aircraft while the aircraft is on the ground, including ramp communications.

Instrument Landing System (ILS):

A radionavigation system which provides aircraft with horizontal and vertical guidance just before and during landing, at certain fixed points indicates the distance to the reference point of landing.

Instrument Landing System Glide Path:

A system of vertical guidance embodied in the instrument landing system which indicates the vertical deviation of the aircraft from its optimum path of descent.

Instrument Landing System Localizer:

A system of horizontal guidance embodied in the instrument landing system which indicates the horizontal deviation of the aircraft from its optimum path of approach which is along the axis of the runway.

Marker Beacon:

A transmitter in the aeronautical radio-navigation service which radiates vertically a distinctive pattern for providing position information to aircraft.

Navigational Aid: (Navaid)

A station in the radionavigation service which is used to determine position for the purpose of navigation.

Private Advisory Service:

a) A service provided at a non-controlled aerodrome to facilitate the operational control and safe and expeditious movement of all aircraft using that aerodrome; or

b) A service provided at controlled airports or at aerodromes having an FSS facility by Aeronautical Operators for communications relating to their "company" business.

Private Multiple Communication Station:

An aircraft or aeronautical station established to provide air/air or air/ground multi-purpose communications of an operational nature.

Ramp Check:

A portable low power (1 watt) transmitting device to determine the accuracy of avionic equipment used for radionavigation purposes.

Tacan:

Tactical air navigation system is a UHF omnidirectional navigational aid which provides slant distance in nautical miles from a ground station to an aircraft and the azimuth in degrees from the station.

VHF Omni Range (VOR):

A radionavigation system which indicates the radial bearing to or from the location of the transmitting antenna.

VOR Omnitest (VOT):

A fixed low power (2 watt) transmitter to provide pilots with a means of checking the accuracy of a VOR receiver.

SECTION 2: U.S. DEFINITION OF TERMS

FCC DEFINITIONS

Aeronautical Advisory Station (UNICOM):

An aeronautical station used for advisory and civil defence communications primarily with private aircraft stations.

Aeronautical Enroute Station:

An aeronautical station carrying on a service with aircraft stations, but which may also carry on a limited communication service with other aeronautical enroute stations.

Aeronautical Metropolitan Station:

An aeronautical station used for communication with aircraft, including helicopters, operating between a main air terminal of a metropolitan area and subordinate landing areas.

Aeronautical Multicom Land Station:

An aeronautical station operating in the aeronautical multicom service.

Aeronautical Public Communication Service:

A communication service carried on between aircraft and land radio stations for the purpose of providing a public communication service for persons aboard aircraft.

Aeronautical Search & Rescue Station:

A land or mobile station in the aeronautical mobile service used for communication with aircraft and other aeronautical search & rescue stations pertaining to search and rescue activities with aircraft.

Aeronautical Telemetering Land Station:

A telemetering land station used in the flight testing of manned or unmanned aircraft, missiles, or major components thereof.

Aeronautical Telemetering Mobile Station:

A telemetering mobile station used in the flight testing of manned or unmanned aircraft, missiles, or major components thereof.

Aeronautical Utility Land Station:

A land station located at airdrome control towers and used for control of ground vehicles and aircraft on the ground at airdromes.

Aeronautical Utility Mobile Station:

A mobile station used for communication, at airdromes, with the aeronautical utility land station, ground vehicles, and aircraft on the ground.

Air Carrier Aircraft Station:

An aircraft station on board an aircraft engaged in, or essential to, transportation of passengers or cargo for hire.

Airdrome Control Station:

An aeronautical station providing communication between an airdrome control tower and aircraft.

Aviation Instructional Station:

A land or mobile station in the aeronautical mobile service used for radiocommunications pertaining to instructions to students or pilots while actually operating aircraft or engaged in soaring activities.

Aviation Services:

Aviation services are primarily for the safe, expeditious and economical operation of aircraft. They include the aeronautical fixed service, aeronautical mobile service, aeronautical radionavigation service, and secondarily, the handling of public correspondence to and from aircraft.

Civil Air Patrol Land Station:

A land station used exclusively for communications of the Civil Air Patrol.

Civil Air Patrol Mobile Station:

A mobile station used exclusively for communications of the Civil Air Patrol.

Emergency Locator Transmitter:

A transmitter intended to be actuated manually or automatically and operated automatically as part of an aircraft or a survival craft station, with an A9 emission, as a locating aid for survival purposes.

Emergency Locator Transmitter Test Station:

A land station, operated with an A9 emission on the frequencies used for testing emergency locator transmitters, for testing equipment intended to be used as emergency locator transmitters, or for training in the use of emergency locator transmitters.

Flight Test Aircraft Station:

An aircraft station aboard an aircraft used for the transmission of essential communications in connection with the tests of aircraft or major components of aircraft.

Flight Test Station:

An aeronautical station used for the transmission of essential communications in connection with the testing of aircraft or major components of aircraft; provided however, flight test stations, when operating on the frequency 3281 kHz, are designated as land stations only with respect to operation on the frequency 3281 kHz.

Glide Path Station:

A directional radio beacon associated with an instrument landing system which provides guidance in the vertical plane to an aircraft for the purpose of approach in landing.

Landing Area:

Any locality either land or water, including airports and intermediate landing fields, which is used or intended to be used, for the landing and take-off of aircraft, whether or not facilities are provided for shelter, servicing, or repair of aircraft, or for receiving or discharging passengers or cargo.

Localizer Station:

A radionavigation land station in the aeronautical radionavigation service which provides signals for the lateral guidance of aircraft with respect to a runway center line.

Private Aircraft Station:

An aircraft station on board an aircraft not operated as an air carrier, or an aircraft station that has been licensed pursuant to 87 29 (a) (4) as a private aircraft station on board an air carrier weighing less than 12,500 pounds, maximum certified takeoff gross weight.

Radionavigation Land Test Station (MTF):

A radionavigation land station (Maintenance Test Facility) in the aeronautical radionavigation service which is used as a radionavigation calibration station for the transmission of essential information in connection with the testing and calibration of aircraft navigational aids, receiving equipment, and interrogators at predetermined surface locations. The primary purpose of this facility is to permit maintenance testing by aircraft radio service personnel.

Radionavigation Land Test Station (OTF):

A radionavigation land station (Operational Test Facility) in the aeronautical radionavigation service which is used as a radionavigation calibration station for the transmission of essential information in connection with the testing and calibration of aircraft navigational aids, receiving equipment, and interrogators at predetermined surface locations. The primary purpose of this facility is to permit the pilot to check a radionavigation system aboard the aircraft prior to takeoff.

U.S. AERONAUTICAL INDUSTRY DEFINITIONS

Aeronautical Enroute Service:

Aeronautical enroute stations shall provide all necessary non-public service, HF and VHF, of the particular class authorized without discrimination to any aircraft station licensee who makes cooperative arrangements for the operation and maintenance of the aeronautical enroute stations which are to furnish such service and for shared liability in the operation of such stations. In case of distress, aeronautical enroute stations shall provide the above service without prior arrangements.

1. Enroute Communications: A service provided for communications between the aircraft operating agency and the aircraft while in flight status.

2. Local Communications: A service provided for communications between the aircraft operating agency station located at or near the point of origin or destination of the aircraft and the aircraft while in flight status.

3. Ground Communications: A service provided for communications between the aircraft operating agency local station and the aircraft while the aircraft is on the ground including ramp communications.

4. Metropolitan Communications Service: A service provided for communications between the aircraft operating agency and the aircraft operating between a main air terminal of a metropolitan area and subordinate landing areas and secondarily for inter-communications with other aeronautical metropolitan stations in the same metropolitan area.

SECTION 3: COMPARISON OF U.S./CANADA AERONAUTICAL TERMS

U.S. Aeronautical Terms	Canadian Aeronautical Terms
Aeronautical Advisory Station (UNICOM)	Private Advisory Station
Aeronautical Enroute Service	Aeronautical Operational Control Communications (AOCC)
Aeronautical Enroute Station	No comparative term
Aeronautical Metropolitan Service	No comparative term
Aeronautical Metropolitan Station	No comparative term
Aeronautical Multicom Land Station	Private Multiple Comm. Station
Aeronautical Public Comm. Service	No comparative term
Aeronautical Search & Rescue Station	No comparative term
Aeronautical Telemetering Land Station	No comparative term
Aeronautical Telemetering Mobile Station	No comparative term
Aeronautical Utility Land Station	No comparative term
Aeronautical Utility Mobile Station	No comparative term
Air Carrier Aircraft Station	No comparative term
Airdrome Control Station	Airport Control Tower Unit
Aviation Instructional Station	Flight Training Station
Aviation Services	General Aviation Communications
Civil Air Patrol Land Station	No comparative term
Civil Air Patrol Mobile Station	No comparative term
Emergency Locator Transmitter	Emergency Locator Transmitter
Emergency Locator Trans (Test) Station	No comparative term
Flight Service Station	Flight Service Station
Flight Test Aircraft Station	No comparative term
Flight Test Station	Flight Test Station
Glide Path Station	No comparative term
Landing Area	Aerodrome
Localizer Station	No comparative term
Private Aircraft Station	No comparative term
Radionavigation Land Test Station (MTF)	Ramp Check Station
Radionavigation Land Test Station (OTF)	VOR Omnitest (VOT)
Aeronautical Enroute Service	Direct Pilot-Dispatcher Comm. (DPDC)
Aeronautical Enroute Service	Domestic Paid Air/Ground (DPAG)
No comparative term	Flight Inspection Station
No comparative term	Ground Communications
No comparative term	Aircraft Navigational Service
No comparative term	Community Aerodrome Radio Stations (CARS)