Government of Canada
Department of Communications

Gouvernement du Canada
Ministère des Communications

POLICY MANUAL

PM - 1
RADIO LICENSING

PART 5

1. PUBLIC COMMERCIAL SERVICE
2. PUBLIC COMMERCIAL RECEIVING SERVICE
3. PUBLIC COMMERCIAL AUTOMATIC REPEATER SERVICE
4. RESTRICTED PUBLIC COMMERCIAL SERVICE

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TELECOMMUNICATION REGULATORY SERVICE

Notice to Users

This edition of the manuals, has been produced on a computer in preparation for possible future on-line access and to take advantage of computer text editing utilities. The structure has been altered to facilitate computer generation of paragraph numbers, titles and illustration numbers. Computer generated alphabetic and frequency indexes have also been introduced.

There were no amendments made to the contents of this edition except the elimination of outdated sections. Subsequent revisions will contain appropriate amendments. In addition, subject to the availability of resources, we will be undertaking a project to revise the content of the various sections of the Manuals. Consequently, if you have any suggested revisions or if you detect errors, please report these to DOS-P via the proper channels.

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1. PUBLIC COMMERCIAL SERVICE

A service provided by land or mobile stations including stations operated by provincial government agencies, and open for public correspondence with certain other land or mobile stations. (Ref. General Radio Regulations, Part II, Section 2).

1.1. Eligibility

Applications for radio licensing from the following will be considered:

1) Communication Common Carriers who comply with the Radio Act and Regulations; and

2) Other applicants who comply with the Radio Act and Regulations and satisfy the Department concerning their technical competence.

1.2. Temporary Permit for Subscribers to U.S. Common Carrier

American common carriers are issued a fleet licence to cover their mobile stations. Therefore, subscribers who apply for permits should obtain the fleet licence number from the carrier and submit it with their requests. In cases where numbers are not readily available, a temporary permit may be issued for a period of maximum one month, to enable applicant to obtain the fleet licence number.

1.3. Application Guidelines Above 890 MHz

Applications for fixed service frequencies above 890 MHz must be submitted in accordance with procedures outlined in RSP113. Technical requirements for the requested frequency band are outlined in the SRSP applicable to that band.

In addition, the Department has issued radio licensing policies for terrestrial fixed services in certain microwave bands, as follows:

a) Fixed services in the bands 7125-7725 MHz and 7725-8275 MHz - See Appendix A

b) Short haul microwave systems in the band 12.7-12.95 GHz - See Appendix B

c) Short haul microwave systems in the band 14.5-15.35 GHz - See Appendix C

1.4. Caution to Applicant

The Department of Communications does not consider itself bound by financial or commercial commitments made by the applicant before a licence has been granted.

1.5. Priority in Use of Frequencies

Systems considered essential to provide service to the public, e.g., common carrier communication system, are classed as being within the preferred category of service.

In general, separate frequencies for the preferred category of service are made available to applicants for assignments in the area involved, to the extent possible. They are subject to the sharing of assigned frequencies with other similar users where the nature of the operations, frequency congestion and loading of the frequency channels dictates such action for efficient spectrum management.

1.6. Fixed Service Operations

Frequencies are available for fixed service operations in accordance with the Canadian Table of Frequency Allocations. In order to implement the spectrum allocation decisions of the 1979 World Administrative Radio Conference, a new Canadian Table of Frequency Allocations was released in December 1981.

1.7. Technical Requirements

Frequency Band MHz	Emission	Radio Standards Procedure (RSP)	Radio Standards Specification (RSS)
27.41-50.00	Amplitude Modulation DSB	-	RSS140
27.41-470.00	Frequency Modulation FM	-	RSS119 (Notes 1 & 2) RSS120 (AM/FM, 3 watts) RSS121

Note 1: All installations utilizing equipment which was approved for wideband operation and was licensed prior to January 1, 1969, or added to an existing system after that date, shall have been removed from service by December 19, 1981.

Note 2: RSS119 has replaced RSS105, RSS126 and RSS139. Existing equipment approved under RSS105, RSS126 and RSS139 will continue to be licensed during a 10 year amortization period ending December 18, 1990. This includes equipment received by a supplier as a trade-in on newer equipment as well as equipment available for lease on a rotating basis, whether or not it was licensed previously (TRC-44 refers).

2. General Land Mobile Service Frequencies Available

Frequencies available for General Land Mobile Service are as follows:

Base	Mobile	Base	Mobile
35.260 MHz	43.260 MHz	152.480 MHz	157.740 MHz
35.300 MHz	43.300 MHz	152.510 MHz	157.770 MHz
35.340 MHz	43.340 MHz	152.540 MHz	157.800 MHz
35.380 MHz	43.380 MHz	152.570 MHz	157.830 MHz
35.420 MHz	43.420 MHz	152.600 MHz	157.860 MHz
35.460 MHz	43.460 MHz	152.630 MHz	157.890 MHz
35.500 MHz	43.500 MHz	152.660 MHz	157.920 MHz
35.540 MHz	43.540 MHz	152.690 MHz	157.950 MHz
35.620 MHz	43.620 MHz	152.720 MHz	157.980 MHz
35.660 MHz	43.660 MHz	152.750 MHz	158.010 MHz
		152.780 MHz	158.040 MHz
		152.810 MHz	158.070 MHz
		152.840 MHz	158.100 MHz

Base	Mobile	Base	Mobile
420.0125 MHz	409.0125 MHz	420.3375 MHz	409.3375 MHz
420.0375 MHz	409.0375 MHz	420.3625 MHz	409.3625 MHz
420.0625 MHz	409.0625 MHz	420.3875 MHz	409.3875 MHz
420.0875 MHz	409.0875 MHz	420.4125 MHz	409.4125 MHz
420.1125 MHz	409.1125 MHz	420.4375 MHz	409.4375 MHz
420.1375 MHz	409.1375 MHz	420.4625 MHz	409.4625 MHz
420.1625 MHz	409.1625 MHz	420.4875 MHz	409.4875 MHz
420.1875 MHz	409.1875 MHz	420.5125 MHz	409.5125 MHz
420.2125 MHz	409.2125 MHz	420.5375 MHz	409.5375 MHz
420.2375 MHz	409.2375 MHz	420.5625 MHz	409.5625 MHz
420.2625 MHz	409.2625 MHz	420.5875 MHz	409.5875 MHz
420.2875 MHz	409.2875 MHz	420.6125 MHz	409.6125 MHz
420.3125 MHz	409.3125 MHz	420.6375 MHz	409.6375 MHz

Base	Mobile
420.6625 MHz	409.6625 MHz
420.6875 MHz	409.6875 MHz
420.7125 MHz	409.7125 MHz
420.7375 MHz	409.7375 MHz
420.7625 MHz	409.7625 MHz
420.7875 MHz	409.7875 MHz
420.8125 MHz	409.8125 MHz
420.8375 MHz	409.8375 MHz
420.8625 MHz	409.8625 MHz
420.8875 MHz	409.8875 MHz
420.9125 MHz	409.9125 MHz
420.9375 MHz	409.9375 MHz
420.9625 MHz	409.9625 MHz
420.9875 MHz	409.9875 MHz

Base	Mobile
454.400 MHz	459.400 MHz
454.425 MHz	459.425 MHz
454.450 MHz	459.450 MHz
454.475 MHz	459.475 MHz
454.500 MHz	459.500 MHz
454.525 MHz	459.525 MHz
454.550 MHz	459.550 MHz
454.575 MHz	459.575 MHz
454.600 MHz	459.600 MHz
454.625 MHz	459.625 MHz
454.650 MHz	459.650 MHz

Note 1: The frequencies 152.480 and 157.740 MHz are available exclusively for one-way paging transmissions, (see Section 13.2) but Regional Offices may, upon showing of need, assign these channels on a duplex basis to the General Land Mobile Service.

Note 2: The development of the General Land Mobile Service has been mainly in the 150.05-174.0 MHz band. Further development is to be encouraged in the 406.1-430 MHz and 450-470 MHz bands. Frequencies available for General Land Mobile Service in the 30-50 MHz band have been lightly used therefore, applicants should also be encouraged to utilize this band wherever possible.

Note 3: The U.S. has unrestricted geographical use of the frequency 409.625 MHz.

3. Public Commercial Service to Aircraft HF/VHF

This is a duplex radiotelephone communication between aircraft crew members or company executives and points on land through public telephone facilities, on HF/VHF land mobile channels assigned to the telephone company, for the business communications of the aircraft licensee. (See RIM-2-2, Public Air/Ground Frequencies)

3.1. Conditions of Licensing

Applications for licensing of aircraft stations to participate in the HF/VHF Common Carrier Service may be accepted subject to the following conditions:

1) The proposed apparatus shall be of a make and model which has been type-approved or declared technically acceptable by the Department for the purpose intended;

2) If the aircraft is not fitted for operation in the Aeronautical Mobile Service the installation and operation of equipment for non-safety communications shall be covered by a Mobile Station Licence (Private Commercial Service) endorsed "in aircraft C----";

3) If the aircraft is fitted for operation in the Aeronautical Mobile Service the complete radio installation shall be authorized by a Mobile Station Licence (Aeronautical Mobile Service), endorsed to include the appropriate non-safety communications;

4) If the radio equipment installed for safety purposes is capable of being operated on non-safety frequencies there is no need to install separate equipment for the non-safety function; and

5) Aircraft radio equipment which has not passed environmental and interference test procedures under RSS160 and 161 shall be limited, by endorsement of the licence, to operation below 2440 metres (8000 feet) altitude.

4. UHF Public Air/Ground Radiotelephone Service

This is a duplex public radiotelephone service between aircraft passengers, or anyone on board the aircraft, and points on land through public telephone facilities using UHF channels assigned to the telephone company and airborne station for this service.

4.1. Eligibility

Communication common carriers eligible for licences to provide a general land mobile service as an extension of their land telephone wireline service, are also eligible to provide this service.

4.2. Frequencies

Base Station	Working Channel Designator	Mobile Station
454.675 MHz (Signalling)		
454.700 MHz	6	459.700 MHz
454.725 MHz	7	459.725 MHz
454.750 MHz	5	459.750 MHz
454.775 MHz	8	459.775 MHz
454.800 MHz	4	459.800 MHz
454.825 MHz	9	459.825 MHz
454.850 MHz	3	459.850 MHz
454.875 MHz	10	459.875 MHz
454.900 MHz	2	459.900 MHz
454.925 MHz	11	459.925 MHz
454.950 MHz	1	459.950 MHz
454.975 MHz	12	459.975 MHz

These frequencies are in the Canada/United States co-ordinated plan for this service.

4.3. Conditions of Licensing

1) A separate unit of radio equipment shall be employed by an airborne station participating in the UHF Public Air/Ground Radiotelephone Service.

2) The ground and airborne station equipments shall be technically acceptable to the Department for the purpose intended. A maximum of 40 watts ERP and 15 watts ERP will be permitted for the ground and airborne stations respectively.

3) The UHF frequencies employed shall be those in the 450 - 470 MHz band which have been reserved in accordance with the Canada/United States plan for the Public Air/Ground Radiotelephone Service.

4) The ground station location shall be in accordance with the Canada/United States co-ordinated plan.

5) No interference shall be caused by the use of the UHF Public Air/Ground Radiotelephone Service equipment to any of the radio apparatus which is intended for aircraft safety communications or navigational purposes.

6) The use of radio equipment for Public Air/Ground Radiotelephone Service shall not be considered as satisfying any requirement relating to aircraft safety including instrument flight rule operation.

7) The operation of the UHF air/ground aircraft station in the aircraft shall at all times be under the control of the pilot or captain.

8) Licences for the ground station facilities shall be in the name of the communication common carrier and the licences issued in the public commercial service for the aircraft station equipment shall be in the name of the registered owner of the scheduled air carrier aircraft. Licences shall be issued in the Public Commercial Service in both cases.

4.4. General

The status of the UHF public air/ground radiotelephone service as of March 1981 is as follows:

1) An air/ground radiotelephone terminal station was established for a short period in the early 1970's at Hawkesbury, Ontario. Lack of interest at the time is believed to be the result of information being directed primarly to the large commercial carriers and only one terminal station being available;

2) Alberta Government Telephones has terminals (Ch. 1) at Edmonton, (Ch. 5) at DeBolt, (Ch. 7) at Mildred Lake and (Ch. 11) at Red Deer. Saskatchewan Telephones has a terminal (Ch. 6) at Bladworth and Manitoba Telephones has Channel 9 at Poplar Field;

3) The British Columbia Telephone Company is considering the implementation of UHF radiotelephone service to aircraft;

4) UHF aeronautical radiotelephone service has grown in the United States from 2 stations in 1957 to 30 stations in 1975, the latest date for which we have complete data; and

5) Potential terminal sites and frequencies have been selected to provide UHF aeronautical radiotelephone service on a national basis. The installations to date conform to the initial selections. A copy of the national plan is given in Appendix D.

5. Public Commercial Service to Ships

This is a domestic service of radiocommunication between land stations and ship stations limited to non-safety public correspondence.

5.1. Frequencies

Land stations operated by communication common carriers and providing a general land mobile radio service in all areas of Canada except as provided in 5.1.1 and 5.1.2 are authorized to extend such service to ships using frequencies allotted for general land mobile service, or frequencies shared with the Maritime Mobile Service, in accordance with the following table:

Land Station Transmit	Mobile (Ship) Transmit	Area	Remarks
Frequencies in the 150.05-174, 406.1-430 and 450-470 MHz bands allocated to the general land mobile radiotelephone service. (Non-Maritime Mobile)		Assignments will depend on frequency loading in the area involved.	Ship/shore duplex working, on a secondary basis to the land mobile service.
161.75 MHz 161.80 MHz 161.95 MHz (Maritime Mobile)	157.15 MHz 157.20 MHz 157.35 MHz	West Coast and East Coast up to and including Montreal.'	Ship/Shore duplex working only with the Maritime Mobile Service.
161.85 MHz	157.25 MHz	Saltspring Island, B.C.	as above.

Note: Frequencies in the 409-410 MHz band paired with 420-421 MHz are not available on or around the straits of Juan de Fuca.

Land Station Transmit SSB Assigned Frequency	Mobile (Ship) Transmit SSB Assigned Frequency	Area	Remarks
2261.4 kHz	2213.4 kHz	West Coast	Ship/Shore duplex working on a secondary basis to land point-to-point service.
2539.4 kHz	2016.4 kHz	"	Ship/shore duplex working Vancouver.
2559.4 kHz	2143.4 kHz	West Coast	Ship/shore duplex working, Vancouver.
2591.4 kHz	2167.4 kHz	"	Ship/shore duplex working, Prince Rupert.
2061.4 kHz	2799.4 kHz	"	Ship/shore duplex working, Prince Rupert.
2470.4 kHz	2709.4 kHz	"	Ship/shore duplex working, Vancouver.
4411.5 kHz	4117.1 kHz	"	Ship/shore duplex working, general.

5.1.1. Great Lakes Area

On the Great Lakes and St. Lawrence River west of Montreal this category of service is confined to the non-Maritime Mobile VHF/UHF bands listed in 5.1 Authorizations may be granted, on a case-by-case basis, at Regional level.

5.1.2. East Coast Area

On the East Coast and St. Lawrence River from Montreal eastward this category of service is confined to the VHF/UHF bands, non-Maritime Mobile and Maritime Mobile, listed in 5.1.

5.2. Ship Station Using Land Mobile Service

Mobile (Ship) Stations. Any ship station licensed to operate in the Maritime Mobile Service may be authorized by endorsement of that licence to participate in the Public Commercial Service. Ships requiring only commercial services may be licensed under the Radio Act as mobile stations performing a Private Commercial Service.

5.3. Technical Requirements

Frequency Band MHz	Emission	Radio Standards Procedure (RSP)	Specification (RSS)
1.60-26.96	Amplitude Modulation SSB (Note 1)	-	RSS125 (Note 2) RSS180 (10 watts)
27.41-50.00	Amplitude Modulation DSB	-	RSS140
27.41-470.00	Frequency Modulation FM	-	RSS119 (Notes 3 & 4) RSS120 (AM/FM, 3 watts) RSS121 (10 watts)
72.00-76.00	Amplitude Modulation DSB	RSP100	-
	Frequency Modulation	RSP100	

Note 1: Fixed and land mobile services must use suppressed carrier or reduced carrier SSB emissions (no full carrier permitted). After January 1, 1982 this also applies to Maritime Mobile frequencies, except on the distress frequency 2182 kHz where full carrier DSB emissions will continue to be used.

Note 2: RSS125 was implemented April 1, 1978. Equipment approved under RSS122 and RSS123, licensed prior to that date, will continue to be licensed for an amortization period ending March 31, 1983.

Note 3: All installations utilizing equipment which was approved for wideband operation and was licensed prior to January 1, 1969, or added to an existing system after that date, shall have been removed from service by December 19, 1981.

Note 4: RSS119 has replaced RSS105, RSS126 and RSS139. Existing equipment approved under RSS105, RSS126 and RSS139 will continue to be licensed during a 10 year amortization period ending December 18, 1990. This includes equipment received by a supplier as a trade-in on newer equipment as well as equipment available for lease on a rotating basis, whether or not it was licensed previously (TRC-44 refers).

5.3.1. Shared Frequencies (Equipment)

Where public commercial services involve frequencies that are shared with the maritime mobile service the equipment involved shall meet applicable maritime mobile specifications.

6. Radio Relay Systems (Technical Requirements)

Frequency Band MHz	Standard Radio System Plan (SRSP)
406.1 - 430	SRSP 501
450 - 470	SRSP 501
806 - 821	SRSP 502
851 - 866	SRSP 502
890 - 960	SRSP 310
1427 - 1525	SRSP 311
1710 - 1900	SRSP 303
1900 - 2290	SRSP 304
2548 - 2686	SRSP 300
3500 - 4200	SRSP 302
5925 - 6425	SRSP 301
6425 - 6590	SRSP 307
6770 - 6930	SRSP 307
6590 - 6770	SRSP 308
6930 - 7125	SRSP 308
7125 - 7725	SRSP 305
7725 - 8275	SRSP 306
8275 - 8500	SRSP 309
14500 - 15350	Draft SRSP 312

7. Radio Standards Procedures

The following Radio Standards Procedures are applicable in licensing planned radio stations in the terrestrial and Satellite Systems:

1) RSP100 Issue 4, effective July 8, 1981, outlines the method for obtaining type-approval or technical acceptability of any apparatus which emits hertzian waves. It also contains the procedure for submitting equipment for testing at the Telecommunications Engineering Lab. RSP100 Issue 4, therefore, replaces RSP100 Issue 3, and cancels and replaces RSP103 Issue 5 and RSP104 Issue 3;

2) RSP101 indicates the information required in the licensing of radio stations operating in certain bands between 30 MHz and 470 MHz, to be used in the fixed service, or as a base or coast station in the Land Mobile or Maritime Mobile Services respectively;

3) RSP113 provides the application procedures for planned radio stations above 890 MHz in the terrestrial fixed service;

4) RSP114 (Provisional) deals with licence application procedures for planned radio stations, in satellite systems and applies to all categories of applicants eligible to own and operate space stations and earth stations of all kinds, except those covered under RSP116, television receive-only (TVRO); and

5) RSP116 outlines the procedure to be followed when applying for planned television receive-only (TVRO) earth stations in the fixed satellite service.

8. Interconnection with Telephone Networks

The Radio Act and General Radio Regulations neither permit not prohibit the interconnection of mobile radio systems to the landline telephone systems, therefore, the Department is not directly concerned. Such interconnection depends upon the local telephone company and the licensee, arriving at a mutually acceptable arrangement.

The Department is primarily concerned, that the licensee of the radio station maintains control of the facility to the extent required to ensure conformance with the technical and operational provisions of the specific radio station licence involved and those of the Act and Regulations, e.g., power, bandwidth, emission, non-interference, etc.

9. PUBLIC COMMERCIAL RECEIVING SERVICE

"Public Commercial Receiving Service" means a service for the handling of public correspondence provided by land or mobile stations equipped for reception only. (Ref. General Radio Regulations, Part II, Section 2).

10. PUBLIC COMMERCIAL AUTOMATIC REPEATER SERVICE

A service for the handling of public correspondence, provided by land stations operated for the automatic reception and retransmission of radio within a communication system and that does not accept traffic from or deliver traffic to external points by means other than radio.

10.1. Authorization

The General Radio Regulations, Part II defines both Private and Public Automatic Repeater Services and provides for licences to be issued for stations performing such services. While the Department is not, in principle, adverse to the use of automatic repeaters and the multiple frequency assignments required by such systems, applications for authorizations of this nature,

from other than communication common carriers providing land telephone services, are not to be considered as routine but rather as submissions that are designed to meet extraordinary operating needs that may not be satisfied in any other reasonable manner. That is, applicants must demonstrate on technical and/or operational grounds that the operation of an automatic repeater station is necessary to meet their radiocommunication requirements. Generally, automatic repeater facilities are proposed for one or more of the following reasons:

a) to extend mobile to mobile coverage;
b) to extend base to mobile coverage;
c) to provide both point-to-point and land mobile communications through common facilities; or
d) to overcome terrain obstacles.

10.1.1. Licensing Considerations

In examining applications for authority to establish automatic repeater stations within the VHF/UHF Fixed/Mobile bands between 27.41 and 470 MHz it is necessary to consider propagation and frequency utilization in the particular geographical area involved as the use of such facilities under certain conditions could limit the growth of normal single frequency systems or services in the same or adjacent areas.

Generally, equipment limitations, such as the use of very low power transmitters, should not be considered as justification for the use of automatic repeater facilities, particularly where other equipment may be available which would meet the requirement without the necessity of employing an automatic repeater.

The following criteria shall apply in dealing with applications for licences to establish and operate Public Commercial automatic repeater facilities in the radio frequency bands concerned:

All VHF/UHF Fixed/Mobile bands between 30.56 and 470 MHz

1) Outside US/Canada Frequency Coordination Zone

a) Favourable consideration may be given to applications for licences to establish and operate automatic repeater stations where only one such station is involved and where frequency usage makes it possible to assign a second frequency to the system; and

b) Applications proposing the establishment and operation of more than one automatic repeater station or requiring more than two frequencies may be accepted for consideration on a special case basis taking into account the area involved, availability of frequencies and foreseeable expansion of normal single frequency services in the same or adjacent areas.

2) Within US/Canada Frequency Coordination Zone, in those bands listed in the US/Canada Coordination Agreements

a) Applicants shall be encouraged, wherever possible to

i) use multiple base stations operating on a single frequency and connected by wirelines for simultaneous or individual transmissions,

ii) employ frequencies in the 27.41-50, 406.1-430 or 450-470 MHz bands for the complete system rather than frequencies in the range 138-174 MHz, or

iii) employ frequencies as in ii) above, or in appropriate frequency bands, for the automatic repeater portion of the system;

b) Automatic repeater (2 frequency) operation in the 138-174 MHz band will normally be authorized only to Federal, Provincial, Municipal and Communication Common Carrier systems, provided such operation is technically feasible and frequencies are available for this purpose in the area involved.

10.1.2. Licensing Conditions

Applicants for authority to establish and operate automatic repeater radio facilities may be required to indicate the steps they will take to prevent interference to other licensees, particularly in those cases where sharing of frequency assignments with other licensees is a condition of licensing. Such applicants shall be informed that frequencies assigned for this purpose may be withdrawn or changed at the discretion of the Department.

10.1.3. Identification

Where two or more licensees have separate licences for the shared use of a repeater, our requirements will be met if only one call sign is transmitted by the automatic identification unit.

The call sign to be used shall be agreed upon by the separate licensees, and the holder of that call sign shall be responsible for notifying the local DOC office of the selected identifier.

11. RESTRICTED PUBLIC COMMERCIAL SERVICE

A service provided by land stations, including stations operated by provincial government agencies, and open for restricted public correspondence with certain mobile stations. (Ref. General Radio Regulations, Part II, Section 2).

11.1. Purpose

To provide a system under which certain portions of the radio frequency spectrum may be used for communication between certain base and mobile radio stations to enable a greater cross-section of industry and the public in general to obtain the benefits of radiocommunication through the co-ordinated use of common radio frequencies and facilities.

11.1.1. Type of Operation

A Restricted Common Carrier Land Mobile Service (RCCMRS) licensed to perform a Restricted Public Commercial Service provides the following types of operation:

1) Remote Despatch Class of Service to enable a subscriber to communicate directly with his vehicles utilizing a leased wire line or radio link through a common base or repeater station; and

2) A Message Relay Class of Service, to enable a subscriber to pass messages to and from his vehicles through the intermediary of an operator at/or in control of the RCCMRS base or repeater station, or through a link accessed by a repeater.

Note: The Radio Act and General Radio Regulations neither permit nor prohibit the interconnection of mobile radio systems to the landline telephone systems, therefore, the Department is not directly concerned. (See section 7 of PM-1-4)

11.2. Eligibility

Licences for stations to be established in the Restricted Commercial Service may be issued to those persons and companies eligible in accordance with the General Radio Regulations, Part I, Section 5. Such applicants may be requested to satisfy the Department as to their competence through the submission of a Letter-of-Intent, together with complete technical details.

The amount of technical detail required should be determined by consideration of the area involved, the availability of frequencies and the foreseeable expansion in the use of such frequencies in the same or adjacent areas.

No limitation is to be placed on the number of RCCMRS licences issued in respect of any particular area to the extent that technical considerations, especially the availability of frequencies, make this possible.

11.3. Frequencies Bands (150.05-174, 450-470 MHz)

The following discrete frequencies have been allocated for RCCMRS use in the 150.05-174 and 450-470 MHz bands.

Base	Mobile	Base	Mobile
163.470 MHz	167.130 MHz	164.400 MHz	168.420 MHz
163.500 MHz	167.160 MHz	164.430 MHz	168.450 MHz
163.680 MHz	167.460 MHz	164.460 MHz	168.480 MHz
163.710 MHz	167.490 MHz	164.490 MHz	168.510 MHz
163.740 MHz	167.520 MHz	164.520 MHz	168.540 MHz
164.340 MHz	168.360 MHz	164.550 MHz	168.570 MHz
164.370 MHz	168.390 MHz	164.580 MHz	168.600 MHz

Base	Mobile
451.3625 MHz	456.3625 MHz
451.3875 MHz	456.3875 MHz
451.4125 MHz	456.4125 MHz
451.4375 MHz	456.4375 MHz
451.4625 MHz	456.4625 MHz
451.4875 MHz	456.4875 MHz
451.5125 MHz	456.5125 MHz

Note: Frequencies will be set aside in the bands 421-430 MHz, 806-821 MHz and 851-866 MHz in the near future.

1) In certain areas it may not be possible to maintain the normal 5 MHz separation between UHF base and mobile frequencies as specified in SRSP 501. Assignments made prior to the implementation of SRSP 501 authorizing non-standard base station frequencies will continue to be assigned to existing systems. Additions to such systems will also be considered on the basis of non interference to other radio services.

2) Subject to section 13 the above frequencies may also be used by RCCMRS licensees to provide a Common Carrier Service for Radio Paging on a shared secondary basis to the primary service.

3) In exceptional cases, in areas where the discrete frequencies listed above are not available for assignment selections may be made from the land mobile service frequencies in the bands available between 30.56 and 890 MHz subject to the availability of frequencies and non interference to other radio services. Such frequencies must also be coordinated with the U.S. where necessary.

11.4. Frequencies Band (27.41-50 MHz)

A limited number of frequencies are available in the 27.41-50 MHz band on the basis of 20 kHz channelling to the extent that this is technically feasible. Applicants proposing systems in this band are to be made aware of the propagation characteristics associated therewith and that it is not possible to provide protection from sky wave interference.

11.5. Assignment of Frequencies

In certain areas where frequencies in the bands between 138 and 174 MHz are not available applicants are to be urged to consider the provision of service in other appropriate Fixed/Mobile bands between 30.56 and 890 MHz.

Normally, separate frequencies are made available for RCCMRS operations but sharing of assigned frequencies with other similar users may be necessary where loading of the channel dictates such action be taken for efficient spectrum management (See 11.7.2)c).

11.6. Despatch Stations

Proposals to employ a base station as an automatic repeater station controlled by subscribers using radio despatch stations in lieu of leased wire lines may be considered subject to the following conditions:

1) that the despatch station shall be authorized on the mobile frequency of the RCCMRS pair assigned to the system as a whole;

2) that the proposal shall not require the use of frequencies in excess of the pair assigned to the system as a whole;

3) that authority for the operation of the base station as a repeater is to be granted on the understanding that such use shall not result in interference to other radio services; and

4) that the assigned frequencies shall be shared, if necessary, with other RCCMRS licensees and that the authority to use the frequencies involved is subject to withdrawal at the discretion of the Department.

11.7. Renewal of Licences

1) Where existing licensees are providing a satisfactory RCCMRS or undertake to do so, licences may be renewed as required.

2) Where existing licensees have not shown progressive development and reasonable channel loading the licensees shall be asked to show reason why they should not

   a) relinquish the assigned frequency channel;

   b) reduce the number of assigned frequency channels, if more than one in use; or

   c) share the assigned frequency channel(s) with other RCCMRS in the same general area.

11.8. Technical Requirements

Land and Mobile station equipment for use in the RCCMRS shall be type approved under RSS119. See Notes 1 and 2.

Note 1: All installations utilizing equipment which was approved for wideband (50 kHz or 60 kHz channelling) operation and was licensed prior to January 1, 1969, or added to an existing system after that date, shall be removed from service on the next anniversary date for licence renewal after the effective date of RSS119 (Dec. 19, 1980).

Note 2: RSS119, effective December 19, 1980, replaces RSS105, RSS126 and RSS139. Existing equipment approved under RSS105, RSS126 and RSS139 will continue to be licensed during a 10 year amortization period ending December 18, 1990.

11.9. Automatic Identification

Radio stations are required to identify as outlined in General Radio Regulations, Part II, Section 28. Automatic identification of repeater transmissions is the only practical way to satisfy this requirement. Automatic morse code and/or voice identification can be readily incorporated in the station transmitter to modulate it at a lower level than normal transmissions.

The Department will strongly encourage applicants for RCCMRS or City Wide Paging systems, to include the fitting of automatic identification equipment. Existing licensees of such stations will also be strongly encouraged to install automatic identification equipment if they wish their licences to be renewed.

No application or fee is required for the addition of automatic identification equipment. Such addition shall not alter the performance of the radio equipment with respect to the RSS under which it was approved.

12. Extension of Restricted Public Commercial Service to Ships

Land Stations operated by communication common carriers and providing a restricted land mobile (despatch type) radiotelephone service in all areas of Canada may be authorized at Regional level to extend such service to ships using frequencies allocated to the Restricted Common Carrier Land Mobile Service in the appropriate Fixed/Mobile bands between 138 MHz and 890 MHz. Ship/shore duplex working shall be on a secondary basis to the land mobile service. In the Great Lakes and St. Lawrence River west of Montreal, authorizations to extend RCCMRS to ships shall be on a case-by-case basis. Frequencies in the 409-410 MHz band paired with 420-421 MHz are not available on or around the Straits of Juan de Fuca.

Any ship licensed to operate in the Maritime Mobile Service may be authorized by endorsement of that licence to participate in the restricted public commercial service. Ships requiring only commercial service may be licensed under the Radio Act as mobile stations performing a private commercial service.

While land stations performing ship/shore commercial services are licensed to common carriers, this does not preclude the granting of licences for private restricted public commercial service to associations, companies and individuals.

13. City Wide Service for Radio Paging

"City-Wide" service for Radio Paging is defined as a one-way signalling communication service (tone or voice), provided by one or more land (base) stations, the transmissions of which are used to actuate mobile receivers operated by subscribers to such radio paging service.

13.1. Eligibility

Subject to the provisions of the Radio Act, General Radio Regulations and the availability of frequencies; individuals or companies shall satisfy the department as to their technical competence through the submission of a Letter of Intent, together with complete technical details.

13.2. Frequencies

1) Frequencies for exclusive one-way paging transmissions are available as follows:

a) For Communications Common Carriers Providing a Land Telephone Wireline Service

35.22 MHz or 35.58 MHz
43.22 MHz or 43.58 MHz
152.48 MHz
157.74 MHz
454.10 MHz
454.35 MHz

Note: 149.77 MHz has been set aside on a Canada-Wide basis for "Roaming" Radio Paging Service. Assignment of this frequency at some specific locations in Canada may be technically difficult.

b) For all other Communications Common Carriers including Restricted Common Carriers and other applicants

35.58 MHz or 35.22 MHz
43.58 MHz or 43.22 MHz
163.44 MHz
167.10 MHz
459.10 MHz
459.35 MHz

Note 1: See Paragraph 13.4

Note 2: Exclusive one-way paging services have the same priority as other mobile radio services (SRSP 501, para. 3.9 refers).

2) One way paging systems may be permitted in the base portions of the land mobile duplex bands on a secondary, non-interference basis to the primary two-frequency service, as follows:

a) Communication Common carriers now providing a General Land Mobile or Restricted Land Mobile Radio Service may be permitted to provide a radio paging service on frequencies assigned to their respective land mobile two-way systems within the bands between 138 and 470 MHz; and

b) Frequency channels allocated, but not yet assigned to the communications common carriers and restricted common carriers within the bands between 138 and 470 MHz for land mobile two-way radiotelephone service, may be made available for one-way paging transmissions (tone or voice).

13.3. Frequency Assignment

Where any of the discrete frequencies listed above are not available in certain areas other frequencies within the bands between 30.56 MHz and 470 MHz may be selected and co-ordinated with the United States where necessary.

Frequencies for exclusive one-way paging transmissions within the bands between 30.56 and 470 MHz shall be assigned on an area basis and shall not be shared with other similar licensees in the same area unless it can be shown that time sharing on the same frequency in the same area is feasible.

13.4. Technical Requirement

Transmitters

a) Frequency Bands MHz	Radio Standards Specification (RSS)
27.41 - 50	Amplitude Modulation DSB RSS140
27.41 - 470	Frequency Modulation FM RSS119

b) Power - The applicant shall justify the need to use any specific amount of power, especially in multiple transmitter systems, but in no case exceed an effective radiated power of 500 watts.

Receivers approved in accordance with Radio Standards Specification 201 are exempt from licensing.

13.5. General Conditions to Licensing

A station performing a communications Common Carrier Service for Radio Paging shall be licensed as a land station performing a Restricted Public Commercial Service.

Licensees authorized to provide a Communication Common Carrier Service for Radio Paging may, at the discretion of the Regional Director, be required to submit reports for whatever period is considered necessary, indicating the number of subscribers and general information on the system performance. Where the report indicates that progressive development and reasonable channel loading has not been achieved the licensee should be asked to show reason why he should not

1) relinquish the assigned frequency channel;
2) relinquish one or more assigned frequency channels if more than one channel is authorized; or
3) share the assigned frequency channel(s) with other Radio Paging licensees in the same general area.

Where coded tones are used, they shall be selected by licensees and co-ordinated when necessary with other licensees in the same area to ensure compatibility of operation.

When the base station transmitting frequency is shared with other users in the area, the licensee will be required to monitor that channel at all times.

Paging transmissions shall be of short duration and in general must not impede or cause harmful interference to regular two-way land mobile service on any R.F. channel.

A. Policy (7125-7725 and 7725-8275 MHz)

A.1. Intoduction

The Department gave notice in the Canada Gazette, Part I, of June 26, 1976, inviting comments on a proposed licensing policy covering the two bands 7125-7725 MHz and 7725-8275 MHz.

The Department has taken into consideration these comments, and other information made available since that date, and has given notice of a policy for the two bands in the Canada Gazette, Part I, dated July 16, 1977.

Notification has also been made for new Standard Radio System Plans (SRSP's) No. 305 (Issue 2) and No. 306 (Issue 2) covering the two bands and these should be read in conjunction with the following policies.

A.2. Objective

The objective of the policies for the FIXED services in the bands 7125-7725 and 7725-8275 Megahertz is to provide guidance to permit the orderly growth and development of the FIXED services in these bands. (See Note 1 below)

A.3. Policy for the 7 GHz Band (7125-7725 MHz)

The Department recognizes the importance of adequate and suitable microwave spectrum for the control of electrical energy distribution facilities. In view of the growing importance of power in the economy of Canada, a channelling plan, SRSP 305, was developed in the 7 GHz band to suit the requirements of the Power Utilities. Similar requirements for low capacity analogue and digital systems are, however, foreseen for other users and the 7 GHz band will continue to be available to a number of users in any given area, particularly where such systems meet the requirements of SRSP 305.

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(1) There is a band 50 MHz wide within each of the 7 and 8 GHz bands, allocated exclusively to the FIXED-SATELLITE service. It is used by the military for NATO communications. The Department has excluded these bands from plans for the assignment of frequencies for the operation of terrestrial systems.

On the basis of information currently available to the Department, and in view of the protection afforded to Power Utility systems in the 8 GHz band, the Department is confident that the microwave requirements of the Power Utilities can be met without conflicting with existing users of the 7 GHz band up to approximately January 1, 1984. Existing systems not conforming to SRSP 305 (Issue 2) will, therefore, be protected at least up to that date. It is proposed to permit "non-conforming" systems to continue to operate in the band after January 1st, 1984, provided they do now restrict the entry, extension or expansion of a system conforming to SRSP 305. Where such a restriction appears likely, the licensee of the existing system may be subject to notice of no less than one year to vacate the 7 GHz band. Such notice would not, however, be given until other suitable spectrum has been found to ensure continuation of service and until consideration has been given to all the economic implications. It is the view of the Department that serious conflicts after January 1984 can largely be avoided by careful planning-stage coordination between the various users of the band.

New systems, or the extension or expansion systems, which do not conform to SRSP 305 (Issue 2) will continue to be considered for licensing in the 7 GHz band when a conforming system cannot be installed. It is, however, expected that such systems will only be required under exceptional circumstances. Where such systems conflict with existing or planned low capacity analogue or digital systems conforming to the SRSP, the Department will attempt, with the co-operation of the parties concerned, to resolve the conflict in an equitable manner, taking into consideration the technical, economic and operational requirements of all concerned. Such systems will be protected in the same manner as existing "non-conforming" systems as described above.

A.4. Policy for the 8 GHz Band (7725-8275 MHz)

The Department recognizes the importance of providing adequate and suitable microwave spectrum or major trunk routes for medium capacity digital systems to permit Canada to realize the significant cost savings resulting directly from the integrated use of digital switching and transmission systems for voice and data communications. A new channelling plan, SRSP 306, has been developed for the 8 GHz band to suite these requirements which are expected to be met by the Telecommunications Common Carriers. There are other users, primarily the Power Utilities, who already occupy parts of the 8 GHz band with analogue systems and who wish to be able to have access to this band for new analogue or digital systems or to expand existing systems.

On the basis of planning information provided by TCTS, the Department is confident that the plans for the medium capacity digital networks can proceed without conflicting with existing users of the 8 GHz band up to approximately January 1, 1984. Existing systems not conforming to SRSP 306 (Issue 2) will, therefore, be protected at least up to that date. It is proposed to permit existing "non-conforming" systems to continue to operate in the band after January 1st, 1984, provided they do not restrict the entry, extension or expansion of a system conforming to SRSP 306. Where such a restriction appears likely, the licensee of the existing system may be subject to notice of no less than one year to vacate the 8 GHz band. Such notice would not, however, be given until other suitable spectrum, perferably 7 GHz, has been found to ensure continuation of services and until consideration has been given to all the economic implications. It is the view of the Department that serious conflicts, after January 1984, can largely be avoided by careful planning-stage co-ordination between the users of the band (i.e., the Power Utilities and the Telecommunications Common Carriers).

New systems, or the extension or expansion of existing systems which do not conform to SRSP (Issue 2) will continue to be considered for licensing in the 8 GHz band when a conforming system cannot be installed. It is, however, expected that such systems will only be required under exceptional circumstances. Where such systems conflict with an existing or planned medium capacity digital system conforming to the SRSP, the Department will attempt, with the co-operation of the parties concerned, to resolve the conflict in an equitable manner, taking into consideration the technical, economic and operational requirements of all concerned. Such systems will be protected in the same manner as existing "non-conforming" systems as described above.

A.5. Policy Implementation

The Department is satisfied that the course of action outlined above represents the best means for ensuring the effective use of scarce spectrum and for satisfying a wide range of needs for spectrum for point-to-point relay systems in the 7 & 8 GHz bands. It recognizes that the implementation of new policies for the utilization of important bands of the spectrum already in use in certain locations will involve a transition period. The Department will closely monitor the implementation of the policies to ensure consistency of application and to

avoid potential conflicts and will look to those involved to participate in co-ordination procedures aimed at achieving the most equitable resolution of conflicts that might arise.

Where potential conflicts can be foreseen, they should be brought to the attention of the Department as early as possible. The Licensing Policy and the SRSP's (Issue 2) become effective on July 6, 1977.

B. Policy for Short-Haul (12.7-12.95 GHz)

B.1. Definition of Service

Short-haul, one-way, microwave transmission systems, previously designated as Very High Capacity Microwave (VHCM) systems.

Systems operating in the 12.7-12.95 GHz band must normally have the following features:

a) the capacity is limited to a maximum of approximately 20 or 40 television channels or their equivalent, depending on the type of modulation used, and a minimum of four television channels or their equivalent.

b) the range is one-hop and limited to approximately 20 miles. A passive reflector will not be considered to be a repeater, in the context of the number of hops, but any proposal to use such a reflector in a system will be assessed on the basis of potential coordination problems.

The licensees of such systems must accept, as a condition of licence, that they may not be permitted to use this band beyond January 1, 1988. The Department may continue to renew these licences beyond January 1, 1988 only if the continued operation of the systems does not interfere with the establishment and/or operation of long-haul telecommunications systems. Such licence renewals will be only on a yearly basis. The Department expects the Telecommunications Common Carriers to provide, no later than December 31, 1978, an indication, for the purposes of this policy, of the most-probable path of long-haul 12 GHz Digital routes. Based upon this knowledge, the Department will, after June 30, 1979, no longer license new VHCM systems in this band which can be expected to conflict with long haul digital systems.

B.2. Radio Licensing Considerations

B.2.1. General

All systems will be licensed in accordance with the current issue of Radio Standards Procedure 113. In the case of systems associated with broadcasting receiving undertakings, additional considerations will apply as outlined in section 2.2.

B.2.2. Associated with Broadcasting Receiving Undertakings

B.2.2.1. Shared-Use Systems

In the interest of spectrum efficiency, and because a high degree of commonality is expected to exist in the service provided by the systems associated with broadcasting receiving undertakings in a particular area, the Department will give preference to shared-use systems in those areas where there is more than one user of this service. Shared-use systems are those provided:

a) by a telecommunications carrier, or

b) by an incorporated consortium of licensed broadcasting receiving undertakings.

B.2.2.2. Participation in Consortia

Parties to the incorporated consortium under para. 2.2.1 (b) shall be limited to those who will be served by the transmitting station.

B.2.2.3. Licensing Conditions

A transmitting station licence to a consortium for a shared-use system will be subject to such conditions as will ensure that:

a) transmission and reception of signals shall be limited to those signals for which the respective parties to the consortium have authorization from the Canadian Radio-television and Telecommunication Commission.

b) a broadcasting receiving undertaking which requires microwave service and which can be served by the transmitting station shall be allowed fair and reasonable participation in the consortium and,

c) continuity of participation in the consortium shall be assured to all broadcasting receiving undertakings operating within the system. For an area where shared-use systems are contemplated, the Department reserves the right to develop an overall plan, and license in accordance with that plan.

B.2.2.4. Conditions for Single Licence

In those areas where there is only one foreseeable requirement for the service, a single broadcasting receiving undertaking may be authorized to operate a system. Under these circumstances the licence for the transmitting station shall be subject to:

a) the condition that the licensee agrees to the establishment of a shared-use system, if required by the Department, when additional broadcasting receiving undertakings require service within the service area of the transmitting station, and

b) the relevant conditions contained in para. 2.2.3.

B.2.3. Applications for Licence

Licence applications must be made in accordance with the current issue of Radio Standards Procedure 113. In licensing the use of a system for a broadcasting receiving undertaking, due regard will be taken of the Broadcasting Licence from the Canadian Radio-television and Telecommunications Commission and of the requirements to be met in respect of the issuance of the related Technical Construction and Operating Certificate (TCOC).

B.3. Technical Guidelines

Licences will be granted under Guidelines entitled Technical Guidelines For Very High Capacity Microwave (VHCM) CATV Distribution Systems Operating In The 12.7-12.95 GHz Band, released on December 22, 1975, and with effective date January 5, 1976.

B.4. Implementation of this Policy

In general, the licensing of new short-haul systems in the band 12.7-12.95 GHz will be severely restricted after June 30, 1979. All licensees of such systems are specifically reminded that they may not be permitted to continue operation in this band beyond January 1, 1988 and no licence will be issued unless the applicant agrees to vacate the band when requested by the Department. Licensees will be given at least one year's notice of a termination of operation. The Department is announcing a policy for the 14.5-15.35 GHz band which provides an alternative for the operation of short-haul systems.

The Department recognizes the need to provide spectrum for both short-haul microwave systems and long-haul digital systems. To the degree that the two do not conflict, the Department is willing to consider, on an exception basis, the licensing of both systems. To this end, the Department is interested in obtaining information on the possibility of sharing between digital and analogue systems.

C. Policy for Short-Haul (14.5-15.35 GHz)

C.1. Eligibility

Short-haul microwave systems with an initial maximum capacity of approximately 20 or 40 television channels or their equivalent, depending on the type of modulation used and on the nature of service, will be eligible to use frequencies in the band 14.5-15.35 GHz.

Within this band, the initial assignment of frequencies to services requiring the transmission of many video channels, or their equivalent, and including those services associated with broadcasting receiving undertakings, will be made in the band 14.5-14.75 GHz. A further 250 MHz in the band will be considered for this type of application for use as required. The remainder of the band will be used for services requiring a single or small number of R.F. channels, or their equivalent.

The policy is designed to promote the effective utilization of the spectrum, while taking all of the relevant factors into account in a particular case. Some flexibility will, therefore, be exercised with respect to the number of hops, the minimum number of video channels or their equivalent, and the use of two-way operation.(1) However, the short-haul nature of the operations in the band will be recognized. (Short-haul, in the context of this policy, will normally be taken to imply a maximum length of 40 miles).

C.2. Radio Licensing Considerations

C.2.1. General

All systems will be licensed in accordance with the current issue of Radio Standards Procedure 113. In the case of systems associated with broadcasting receiving undertakings, additional considerations will apply as outlined in section 2.2.

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(1) The range and number of hops is subject to review and will, in any event, be considered on a case-by-case basis under RSP-113 procedures.

C.2.2. Systems Associated with Broadcasting Receiving Undertakings

C.2.2.1. Shared-Use Systems

In the interest of spectrum efficiency, and because a high degree of commonality is expected to exist in the services provided by the systems associated with broadcasting receiving undertakings in a particular area, the Department will give preference to shared-use systems, in those areas where there is more than one user of this service. Shared use-systems are those provided -

a) by a telecommunications carrier, or

b) by an incorporated consortium of licensed broadasting receiving undertakings.

C.2.2.2. Participation in Consortia

Parties to the incorporated consortium under section 2.2.1 (b) shall be limited to those who will be served by the transmitting station.

C.2.2.3. Licence Conditions

A transmitting station licence to a consortium for a shared-use system will be subject to such conditions as will ensure that:

a) transmission and reception of signals shall be limited to those signals for which the respective parties to the cooperative arrangement have authorization from the Canadian Radio-television and Telecommunications Commission,

b) a broadcasting receiving undertaking which requires microwave service and which can be served by the transmitting station shall be allowed fair and reasonable participation in the consortium and,

c) continuity of participation in the consortium shall be assured to all broadcasting receiving undertakings operating within the system.

For an area where shared-use systems are contemplated, the Department reserves the right to develop an overall plan, and licence in accordance with that plan.

C.2.2.4. Conditions for Single Licence

In those areas where there is only one foreseeable requirement for the service, a single broadcasting receiving undertaking may be authorized to operate a system. Under these circumstances the licence for transmitting station shall be subject to:

a) the condition that the licensee agrees to the establishment of a shared-use system, if required by the Department when additional broadcasting receiving undertakings require service within the service area of the transmitting station, and

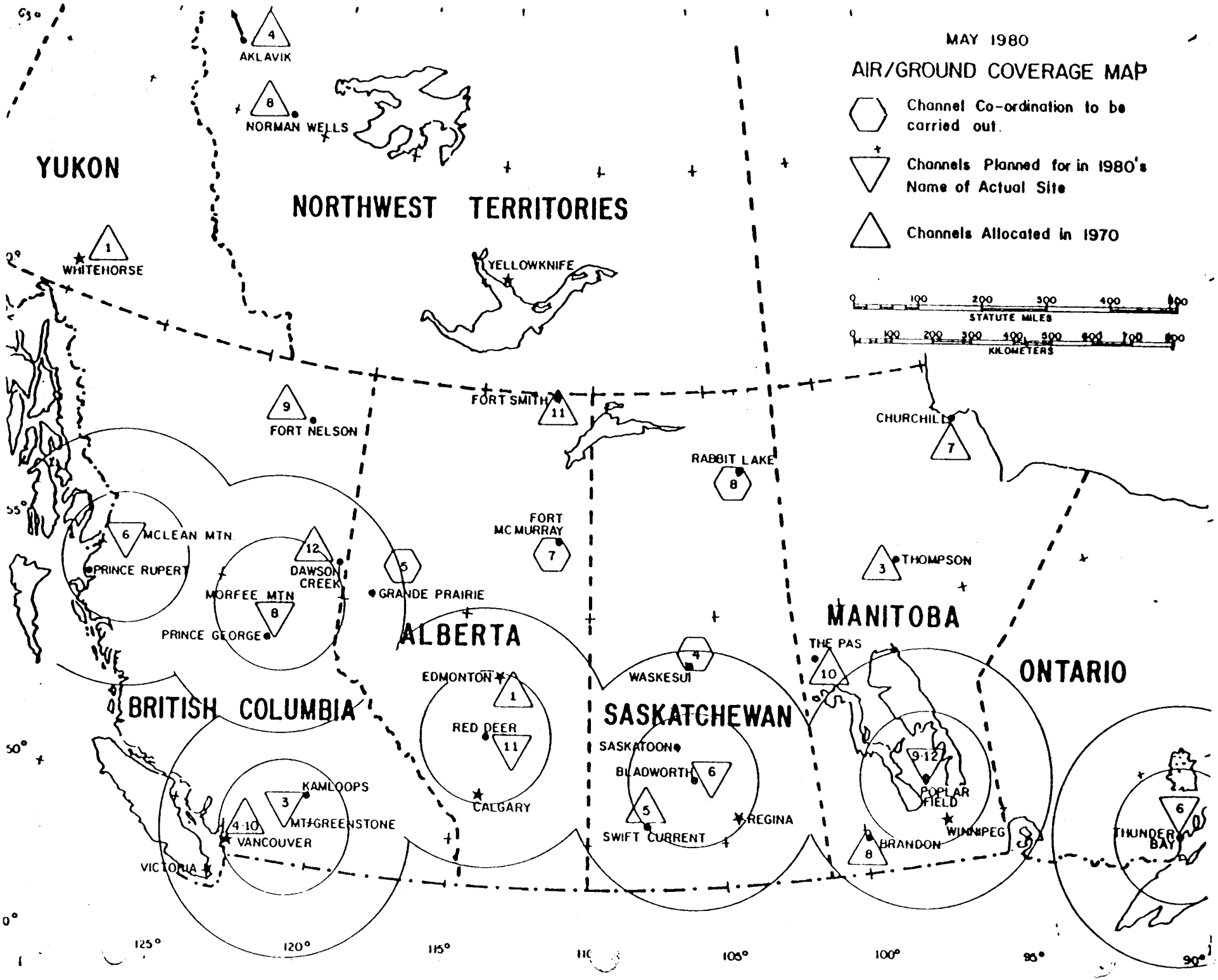
b) the relevant conditions contained in section 2.2.3.

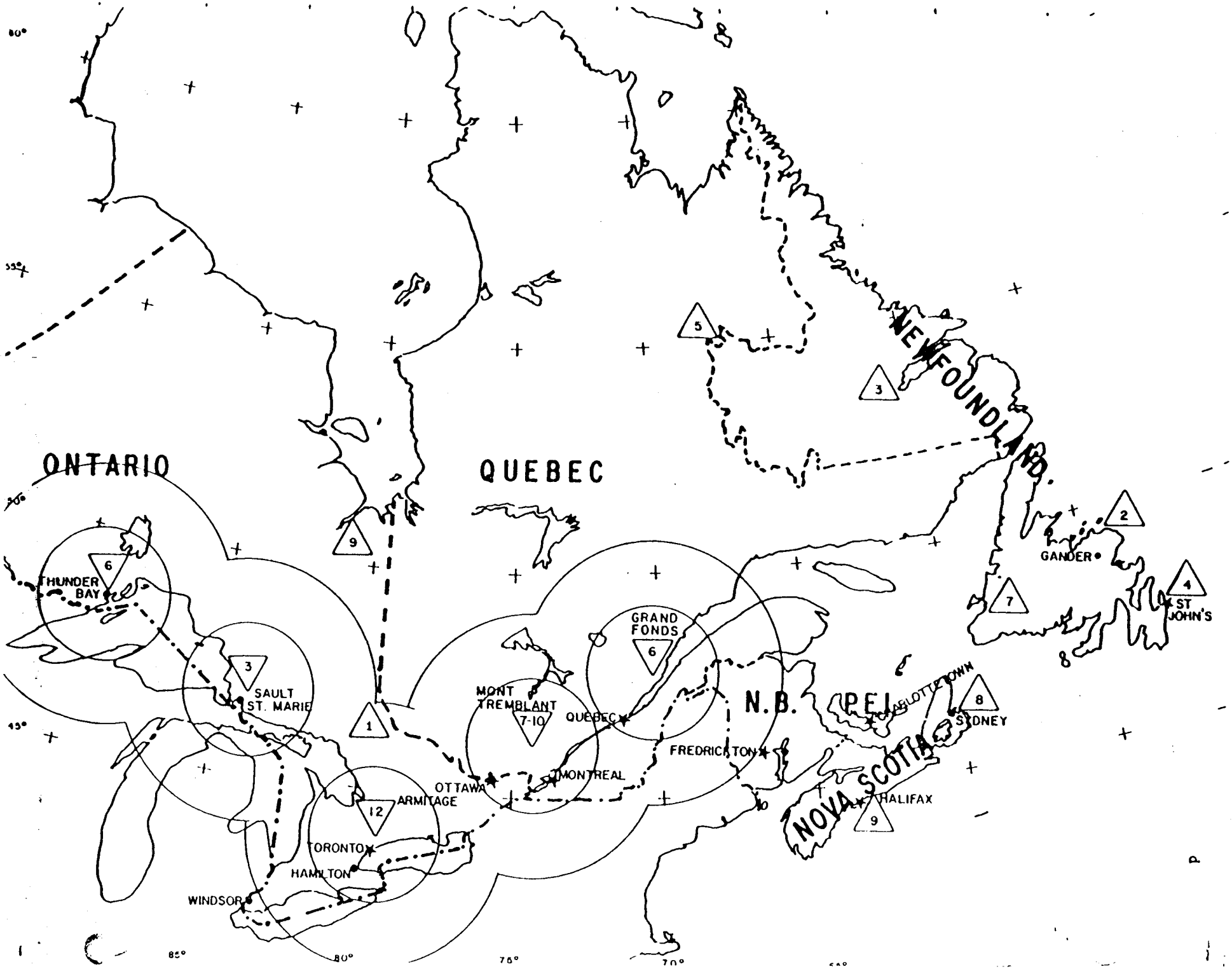
C.2.3. Application for Licence

Licence applications must be made in accordance with the current issue of Radio Standards Procedure 113. In licensing the use of a system for a broadcasting receiving undertakings, due regard will be taken of the Broadcasting Licence from the Canadian Radio-television and Telecommunications Commission and of the requirements to be met in respect of the issuance of the related Technical Construction and Operating Certificate (TCOC).

C.3. Technical Guidelines

Licences will be granted under Technical Guidelines entitled: "Technical Guidelines for Very High Capacity Microwave (VHCM) CATV Distribution Systems Operating in the 14.5-14.75 GHz Band" which are being issued simultaneously with this policy. Applications for licences for systems not covered by these Guidelines will be considered for licensing on an interim basis. A draft Standard Radio System Plan (SRSP) covering the entire band 14.5-15.35 GHz will be issued in 1978.


MAY 1980
AIR/GROUND COVERAGE MAP
Channel Co-ordination to be carried out.
Channels Planned for in 1980's Name of Actual Site
Channels Allocated in 1970
STATUTE MILES
KILOMETERS
YUKON
NORTHWEST TERRITORIES
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
AKLAVIK
NORMAN WELLS
WHITEHORSE
YELLOWKNIFE
FORT NELSON
FORT SMITH
CHURCHILL
RABBIT LAKE
FORT MC MURRAY
THOMPSON
MCLEAN MTN.
PRINCE RUPERT
DAWSON CREEK
MORFEE MTN
PRINCE GEORGE
GRANDE PRAIRIE
EDMONTON
RED DEER
CALGARY
WASKESU
THE PAS
SASKATOON
BLADWORTH
SWIFT CURRENT
REGINA
POPLAR FIELD
BRANDON
WINNIPEG
THUNDER BAY
KAMLOOPS
MT. GREENSTONE
VANCOUVER
VICTORIA
125°
120°
115°
105°
100°
95°
90°
50°
0°


ONTARIO
QUEBEC
NEWFOUNDLAND
N.B.
P.E.I.
NOVA SCOTIA
THUNDER BAY
SAULT ST. MARIE
WINDSOR
HAMILTON
TORONTO
ARMITAGE
OTTAWA
MONTREAL
MONT TREMBLANT
QUEBEC
GRAND FONDS
FREDRICTON
CHARLOTTETOWN
SYDNEY
HALIFAX
GANDER
ST JOHN'S
1
2
3
4
5
6
7
8
9
12
7-10

APPENDIX D

I N D E X

164.550 MHz, 18
164.580 MHz, 18
167.10 MHz, 22
167.130 MHz, 18
167.160 MHz, 18
167.460 MHz, 18
167.490 MHz, 18
167.520 MHz, 18
168.360 MHz, 18
168.390 MHz, 18
168.420 MHz, 18
168.450 MHz, 18
168.480 MHz, 18
168.510 MHz, 18
168.540 MHz, 18
168.570 MHz, 18
168.600 MHz, 18

2
2061.4 kHz, 9
2143.4 kHz, 9
2167.4 kHz, 9
2213.4 kHz, 9
2261.4 kHz, 9
2470.4 kHz, 9
2559.4 kHz, 9
2591.4 kHz, 9
2709.4 kHz, 9
2799.4 kHz, 9

3
35.22 MHz, 22
35.260 MHz, 3
35.300 MHz, 3
35.340 MHz, 3
35.380 MHz, 3
35.420 MHz, 3
35.460 MHz, 3
35.500 MHz, 3
35.540 MHz, 3
35.58 MHz, 22
35.620 MHz, 3
35.660 MHz, 3

4
409.0125 MHz, 3
409.0375 MHz, 3
409.0625 MHz, 3
409.0875 MHz, 3
409.1125 MHz, 3
409.1375 MHz, 3
409.1625 MHz, 3
409.1875 MHz, 3
409.2125 MHz, 3
409.2375 MHz, 3

409.2625 MHz, 3
409.2875 MHz, 3
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409.4625 MHz, 3
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409.5375 MHz, 3
409.5625 MHz, 3
409.5875 MHz, 3
409.6125 MHz, 3
409.625 MHz., 4
409.6375 MHz, 3
409.6625 MHz, 4
409.6875 MHz, 4
409.7125 MHz, 4
409.7375 MHz, 4
409.7625 MHz, 4
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409.9625 MHz, 4
409.9875 MHz, 4
4117.1 kHz, 9
420.0125 MHz, 3
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420.1875 MHz, 3
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420.4875 MHz, 3
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420.5375 MHz, 3
420.5625 MHz, 3

420.5875 MHz, 3
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420.8375 MHz, 4
420.8625 MHz, 4
420.8875 MHz, 4
420.9125 MHz, 4
420.9375 MHz, 4
420.9625 MHz, 4
420.9875 MHz, 4
43.22 MHz, 22
43.260 MHz, 3
43.300 MHz, 3
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43.460 MHz, 3
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43.58 MHz, 22
43.620 MHz, 3
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4411.5 kHz, 9
451.3625 MHz, 18
451.3875 MHz, 18
451.4125 MHz, 18
451.4375 MHz, 18
451.4625 MHz, 18
451.4875 MHz, 18
451.5125 MHz, 18
454.10 MHz, 22
454.35 MHz, 22
454.400 MHz, 4
454.425 MHz, 4
454.450 MHz, 4
454.475 MHz, 4
454.500 MHz, 4
454.525 MHz, 4
454.550 MHz, 4
454.575 MHz, 4
454.600 MHz, 4
454.625 MHz, 4
454.650 MHz, 4
454.675 MHz, 6
454.700 MHz, 6
454.725 MHz, 6
454.750 MHz, 6
454.775 MHz, 6

454.800 MHz, 6
454.825 MHz, 6
454.850 MHz, 6
454.875 MHz, 6
454.900 MHz, 6
454.925 MHz, 6
454.950 MHz, 6
454.975 MHz, 6
456.3625 MHz, 18
456.3875 MHz, 18
456.4125 MHz, 18
456.4375 MHz, 18
456.4625 MHz, 18
456.4875 MHz, 18
456.5125 MHz, 18
459.10 MHz, 22
459.35 MHz, 22
459.400 MHz, 4
459.425 MHz, 4
459.450 MHz, 4
459.475 MHz, 4
459.500 MHz, 4
459.525 MHz, 4
459.550 MHz, 4
459.575 MHz, 4
459.600 MHz, 4
459.625 MHz, 4
459.650 MHz, 4
459.700 MHz, 6
459.725 MHz, 6
459.750 MHz, 6
459.775 MHz, 6
459.800 MHz, 6
459.825 MHz, 6
459.850 MHz, 6
459.875 MHz, 6
459.900 MHz, 6
459.925 MHz, 6
459.950 MHz, 6
459.975 MHz, 6

7
7125-7725 MHz, 1
7725-8275 MHz, 1

A
American common carriers, 1
Automatic identification, 21

C
City Wide Paging, 22