



Government of Canada  
Department of Communications

Gouvernement du Canada  
Ministère des Communications

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## Telecommunications Policy Branch

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### Spectrum Utilization Policy

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1. UTILIZATION OF THE RADIO FREQUENCY SPECTRUM  
IN THE RANGE 30.01-890 MHz

Effective Date :

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## Spectrum and Orbit Policy Directorate

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DISCUSSION PAPER

September 1987

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DEPARTMENT OF COMMUNICATIONS

RADIO ACT

NOTICE NO. DGTP- 010-87

Utilization of the Radio Frequency Spectrum  
in the Range 30.01-890 MHz

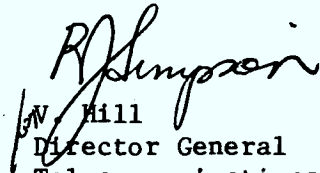
The purpose of this notice is to announce the release of a background paper entitled "Utilization of the Radio Frequency Spectrum in the Range 30.01-890 MHz" for public comment. Copies of the background paper can be obtained from Information Services, Department of Communications, 300 Slater Street, Ottawa, Ontario K1A 0C8, or from the Department's regional offices in Moncton, Montreal, Toronto, Winnipeg and Vancouver.

The Department now invites written submissions from all interested parties on the background paper. Submissions should be addressed to the Director General, Telecommunications Policy Branch, Department of Communications, 300 Slater Street, Ottawa, Ontario, K1A 0C8 and to ensure consideration, must be postmarked on or before February 1, 1988 or received by other means by the same date. All representations must cite the Canada Gazette, Part I, Notice publication date, title and the Notice reference number.

Take note that all written comments received in response to this Notice will be made available for viewing by the public during normal business hours at the Department of Communications Library, in Ottawa, for a period of 1 year from the close of comments and at the Regional Offices of the Department for a period of 6 months from the close of comments.

Also take note that approximately 2 weeks after the close of the comment period, copies of all written comments received in response to this notice will be made available to the public. Copies may be obtained, by mail order or over-the-counter, from Kwik-Kopy Printing, 300 Slater Street, Ottawa, K1P 6A6. Reasonable costs of duplication will be charged.

Dated at Ottawa this 10<sup>th</sup> day of September, 1987.

  
R. Hill  
Director General  
Telecommunications Policy Branch

Utilization of the Radio Frequency Spectrum  
in the Range 30.01-890 MHz

1.0 Intent

In recent years, the Department of Communications has undertaken a number of spectrum policy reviews related to the utilization in Canada of various radio frequency bands. These reviews have been undertaken periodically to examine current and forecast utilization of various bands by users, operational requirements, technological progress and Canadian user needs. Reviews such as these have led to rationalizing use, identifying strategies for the introduction of more efficient utilization techniques, allowing sharing of under-utilized spectrum and, in general, providing a concise policy framework to direct future utilization of the frequency spectrum. This document constitutes the beginning of such a review covering the radio frequency spectrum 30.01-890 MHz. The main body of the paper outlines the terms of the review and poses several theme questions on which the Department seeks comment to assist it in developing feasible proposals. As an aid in answering these questions and in formulating other additional comments, Annex 1 outlines current utilization policy and rules and provides regional frequency assignment statistics by service category on a band-by-band basis. It does not, however, contain any specific proposals.

2.0 Background

Reviews of this nature which have recently been carried out by the Department are, "Policy for the Utilization of the 0.890-10.68 GHz radio spectrum by the fixed service" completed in 1982 and "Proposed Utilization of the Radio Spectrum in the Range 10.68-31 GHz by the Fixed and Fixed-Satellite Services" issued in March 1984. This current review will examine the frequency range between 30.01 and 890 MHz comprising the most heavily used and congested spectrum in Canada. In

so doing, the result will be a spectrum audit having been conducted over a range of radio frequency spectrum (30.01 MHz-31 GHz) serving over 90% of Canadian spectrum users, the outcome of which, when fully implemented, is intended to result in improved utilization of the spectrum as well as a defined plan for achieving this objective in the foreseeable future.

### 3.0 Scope, Objectives Format and Assumptions of the Review

This review will cover all bands and services in the range 30.01-890 MHz. During the review process, decisions will also be required about how best to accommodate the variety of systems and applications, both existing and proposed, of a great diversity of interests and needs.

The review will involve two stages of public consultation with use of the Canada Gazette to formally announce the availability of papers and invite comments:

#### Stage 1: Background Paper

This paper with its associated consultation period, is intended to provide a base of information both statistical and narrative enabling analysis of the current status of each band. This paper also raises for public comment a number of general issues/needs which are covered in a Section called "theme questions". Statistical information presented in the paper has been obtained from the Department's computerized Spectrum Management System (SMS) and reflects the number of authorized frequency assignments in each frequency band portraying an indication of band occupancy. This document also solicits comments for each band taking into account current occupancy, use and trends while considering overall longer term needs and technological innovation.

Stage 2: Policy Proposals Paper

A paper(s) laying out proposed spectrum utilization policies for the bands under consideration for public comment.

Stage 3: A Final Spectrum Utilization Policy Paper

No further comment is solicited at this stage. There would be a corresponding sequence of activities involving associated operational and technical guidelines.

This three stage overall review, of which this background paper represents the initial stage, has a number of objectives which will cover economic, technical and industrial development issues. The main objectives are:

- To review the present usage, in Canada, of the bands in this range. Three key factors will be the degree to which a band is being utilized, the scale of investment in equipment and the applicability and availability of new techniques or new technologies to improve use;
- To identify various developing needs for services, for which this range of spectrum might be considered appropriate;
- To identify overall spectrum management issues that appear to bear most strongly on the development of policies and associated technical standards and channel plans;
- To assess the extent to which the spectrum in this range is adequate to satisfy the needs identified (above) and thus to relate utilization to other services (i.e., to other policies and standards);

- To assess the potential impact on the utilization of this spectrum in Canada of proposals that might be considered in their formative stages in preparation for the next (but as yet unscheduled) International Telecommunication Union (ITU) General World Administrative Radio Conference or other Regional radio service Conference;
- To identify and assess alternative delivery methods for providing a given service; and
- To examine the economic and other bases for projections of growth of services, and the technical and operational factors that might be used to transform these needs into needs for spectrum.

The format of Annex 1 to this background paper is as follows. Each band between 30.01-890 MHz is identified on the basis of the Canadian Table of Frequency Allocations with allocated services and applicable international and Canadian footnotes shown and briefly explained.

The Existing Policy/Rules Section reflects current spectrum, operations or other noteworthy particulars relating to services operating in this band, exclusive of technical details found in other departmental publications. This section also includes a statistical listing of the types and number of assignments in each band on a regional basis and represents the regional "loading" level for each band. For certain bands, the regional overview is further broken down by selected District Office areas in order to depict more clearly the congestion for specific areas. These statistics are as taken from the Department's Spectrum Management database over a period of time spanning July 1986 to mid-1987.



In treating each of the bands individually in this manner, it is anticipated that a cohesive overview of the entire spectrum under consideration will become evident thus leading to suggestions and comments intended to form the basis for policy proposals to accommodate spectrum users into the foreseeable future.

#### Assumptions

This review assumes that each band allocation will remain unchanged until and unless the interest group associated with it can adequately justify a change in its band limits. Proposals for such reallocations generally can only be based on existing use and congestion, and demonstrated progressive use of improved technologies above and beyond the levels used by other radio services in adjacent bands. It is further assumed that the existing ITU radio service definitions encompass all new uses of radio which may come into being. Overall, it appears reasonable to expect all radio users to employ new, more spectrally efficient technologies when they become economically justified and warranted to accommodate user growth. However, reallocations will be considered to provide more spectrum from services with lower growth rates and those which have not made use of available new technologies. Such reallocations will benefit services with higher growth rates where use of improved technologies alone will not suffice to accommodate needs.

#### 4.0 Theme Questions

Theme questions and issues on which the Department seeks discussion and views are, but not necessarily limited to, the following:

#### 4.1 Low Power Devices

Traditionally, provision for the use of low power radio frequency devices in Canada has been achieved through either: a) obtaining an exemption from the requirement for a radio licence issued by the Department based on meeting certain specified technical and/or regulatory pre-conditions or, alternatively, b) complying with the various technical, operational and regulatory requirements necessary to acquire an appropriate licence. In the last few years, however, technological innovation and consumer demand have led to a proliferation of low power devices requiring use of the radio frequency spectrum. To deal effectively with this demand and to accommodate and integrate these devices efficiently into the radio spectrum, the Department seeks comment on these and any other areas:

- a) Should there be a more liberalized use of the bands in the range from 30.01 to 47 MHz for various low power devices? These are bands which are lightly loaded across Canada, offering ample spectrum for innovative uses and possessing little inherent potential for inter-system interference in urban or rural areas. Such spectrum is considered appropriate for low power remote control, local area networking, intra-building computer linking and other similar low-speed data and control signal applications where each transmission is addressed to a specific receiver or set of receivers. Comments are requested on the types of uses feasible for this range of spectrum.
  
- b) Are there other suitable bands than those currently available for these uses, such as the band also designated for ISM (Industrial, Scientific, Medical) purposes.

- c) What restrictions, constraints, etc. should there be on the use of these bands for these services?
- d) What is the degree of need for compatibility in North America for frequency bands and other technical factors for such uses?

#### 4.2 Introduction of New Technologies

The land mobile service is one of the major users of spectrum in the bands between 30-890 MHz. In an effort to increase spectrum utilization efficiencies, the Department requires timed shared use of virtually all frequency assignments among mobile radio users. It has, furthermore, also introduced mobile radio loading criteria, required the use of trunking configurations for larger mobile systems and provided spectrum to allow development of high capacity cellular radiotelephone systems. These measures have all been taken over the past 10-15 years and are in addition to the channel splitting efforts which were taken in the past 40 years which reduced mobile channel bandwidth spacing in successive stages from 120 kHz to 60 kHz and then 30 kHz. Statistical frequency assignment data in the Annex indicates that, in certain bands in the larger urban areas of Canada, spectrum allocated to the mobile service is already heavily used. If the spectrum is to sustain the projected 10% mobile service growth every year, but stay within its currently allocated frequency bands, new and improved technology will, of necessity, have to be adopted and widespread use integrated into the spectrum. In this context, therefore, the Department solicits comment on:

- a) New technologies such as Amplitude Companded Side-Band (ASB), mobile digital radio, narrow-banding techniques and other new techniques for raising the general level of spectrum utilization for mobile radio;

- b) Appropriate bands in which such new technologies should be introduced bearing in mind that the allocation of additional spectrum to the mobile service has not yet been demonstrated as necessary for this purpose.
  
- c) What incentives, if any, could be used to foster the introduction of these techniques? For example, would a substantially reduced level of mobile loading to apply for the first 5 years after new technology is introduced be a reasonable incentive?

#### 4.3 Personal/Business Radio Service

At different intervals in the past several years, the Department has taken under advisement the creation of a new radio service designed to satisfy a need for a personalized type of radio communication service available to the general public. The most recent inquiry examined the feasibility of such a service in the range of 900 MHz and, concluded at the end of the public consultation process that it was not. Such a radio service is conceived as being low cost, capable of operating on a block of pre-assigned frequencies shared with other users in a base/mobile configuration with a mobile to base talk-back range of approximately up to 40 km. Licensing of such systems could be predicated on the basis of a certain degree of operator qualification and competence but would not require any electromagnetic compatibility technical analysis. The operational use of such a system is expected to satisfy those requiring personal or business communications to home or office in urban or rural environments.

Other administrations have recently considered modifications to the use of part of the band 220-225 MHz for various mobile operations. While there are a number of factors to be considered for and against any such proposal, the Department would be interested in comments associated with the use of part of this band to satisfy the above noted personal communications needs. Similarly, Canada proposed a broadening of the current maritime mobile service allocation in the band 216-220 MHz to the mobile service (which includes the land, maritime and aeronautical mobile radio services) at the 1987 Mobile

WARC to be held in September in Geneva. If successful, this band could also be available to satisfy similar needs assuming maritime mobile requirements can be amply satisfied in their current bands. Comments are requested as to the need for and feasibility of such a service taking into consideration the potential for interference to TV channel 13, its operational parameters and an indication as to the optimum spectrum it should occupy.

#### 4.4 Land Mobile & UHF TV Sharing

The use of the UHF TV spectrum for television is limited by the characteristics of the currently available TV receivers. These limitations result in constraints or "taboos" that affect the allocation of TV channels in the UHF TV spectrum. Mobile sharing is premised on the possibility of introducing land mobile assignments on TV channels in an area where such a channel could not be used for TV due to the constraints caused by these receiver related taboos. The obvious advantage of this process is to make spectrum available for mobile systems from a resource that is not and can not be otherwise used. On the other hand, there are several potential drawbacks such as the reduced opportunity in dropping in TV channels especially for low power stations and the need to ensure that interference does not occur between mobile and TV systems. However, perhaps more importantly, there is a need to determine if the introduction of Mobile in the UHF TV spectrum would unduly restrict or perhaps even preclude the implementation of enhancements to the current NTSC (National Television Standard Committee) TV receivers and the recent use of High Definition TV (HDTV) format for studio productions in North America.

Comments on this subject is invited in the following areas:

- a) Should sharing be allowed
- b) Sharing criteria

- c) Restrictions
- d) Timing
- e) Degree and geographical areas of sharing

#### 4.5 UHF Television Broadcasting

The UHF television broadcasting band has been considered by some interests as a prime candidate for future non-broadcast application due to the inefficiency of UHF television receivers which results in a series of "open spaces" at various geographic areas across Canada. As a result, there has been an increasing interest in using this band for applications such as wireless office local area networks, low-power video retransmitters, wireless microphones, multipoint data distribution systems, sound broadcasting by satellite in addition to the previously mentioned land and mobile systems.

Comments are requested on the potential new demands for service in this band or alternative bands which could be used for these applications.

Advanced television systems, comprising enhanced definition and high definition television systems, could require wider (bandwidth) distribution channels in the future than the currently used 6 MHz NTSC standard. The Department has recently released a separate discussion paper on this subject.

For the purposes of this discussion paper, the Department would be interested in views on the future continuing need for over-the-air UHF broadcasting spectrum for television services, or sharing or mixing within the band of non-broadcasting services with broadcasting, or any reallocation of spectrum with an indication of the associated timing which may be involved in each of these activities.

4.6 Strategies for Implementing More Spectrum  
Efficient Systems in Currently Used Spectrum

The matter of introduction of new technologies in the mobile service has already been addressed in this paper. It is clear that there are substantial potential increases in the intensity of spectrum use possible due to the introduction of new technologies. The issue that must still be addressed is the impact that introduction of such new technology will have on the existing deployment of mobile systems and what practical problems need to be resolved to provide for such introductions. This is particularly relevant in the 30-890 MHz Review as most of the mobile spectrum is already in use using current technology in many areas and bands. One consideration in evaluating the introduction of a new technology, or improvement in existing technology, is whether it is forward compatible (i.e. capable of operating in the existing environment) and also backward compatible (ie: capable of supporting the existing equipment). However, many new technologies or improvements may not meet these conditions, and strategies for implementing them within the existing environment will need to be devised. One possible method includes withholding further assignments within a block of frequency spectrum until a new technology or improved systems could be implemented on vacated channels. The Department would consider implementing such a moratorium on licensing in Canada's larger urban areas in any VHF or UHF band designated suitable for this purpose. Comments are invited on this approach and on suitable bands or sub-bands.

Another option would be a cessation of protection from radio interference to existing systems after the passage of a specified period of time. The introduction of overlay techniques such as spread spectrum should also be evaluated in this context. These techniques promise to be forward compatible but not backward compatible. They do

not need implementation strategies such as those mentioned above but they could require substantial R&D. Comment on the feasibility of each or any of these options is invited or on any other suggested options as well.

#### 4.7 Industry Development

Notwithstanding the Department's traditional and "natural" role of manager of the electromagnetic spectrum, there is a strong case for an active participation by the Department in the development of the radio industry through the expansion of existing radio services and through promoting and encouraging the implementation of new services and new technology applications. This mandate has been actively pursued in the area of satellite communications and has resulted in international recognition of Canada's expertise in space applications and significant net economic benefit to Canada. The question of developing a similar strategy for non-space (especially mobile and low capacity fixed) applications is timely as market forces and technology applications are about to rejuvenate the industry. Comments are invited on the role that the Department could and should play and on the radio-communications strategy it should adopt to foster the development of a strong Canadian industry, concentrating on the bands 30-890 MHz. Strategy elements include regulatory actions, technology transfers, participation in R&D activities and upgrading of manufacturing facilities and DOC sponsored trials and demonstrations, among others.

#### 5.0 Procedural

The Department now invites written submissions from all interested parties on the proposed spectrum utilization policies. Submissions should be addressed to the Director General, Telecommunications Policy Branch, Department of Communications,



300 Slater Street, Ottawa, Ontario, K1A 0C8 and to ensure consideration, must be postmarked on or before February 1, 1987 or received by other means by the same date. All representations must cite the Canada Gazette, Part I, Notice publication date, title and the Notice reference number.

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ANNEX 1

## SERVICE SYMBOLS

The following symbols indicate the class of station depicted in the regional statistical table for each band. While most of the station coding residing in the Department's computer system is of the alphabetical type, there are some numerical codes which are described hereunder. Radio station classifications are designated in the statistical tables with either the alphabetical or numerical type of coding.

| <u>Code</u> | <u>Class of Station</u>   |
|-------------|---|
| AL          | Aeronautical radionavigation land station                                   |
| AM          | Aeronautical radionavigation mobile station                                 |
| AT          | Amateur station   |
| AX          | Aeronautical fixed station  |
| BC          | Broadcasting station, sound   |
| BT          | Broadcasting station, television  |
| CA          | Cargo ship  |
| EA          | Space station in the amateur-satellite service                              |
| EB          | Space station in the broadcasting-satellite service<br>(sound broadcasting) |
| EC          | Space station in the fixed-satellite service                                |
| ED          | Space telecommand space station   |
| EG          | Space station in the maritime mobile-satellite service                      |
| EH          | Space research space station  |
| EK          | Space tracking space station  |
| EM          | Meteorological-satellite space station                                      |
| EN          | Radionavigation-satellite space station                                     |
| ER          | Space telemetering space station  |
| EV          | Space station in the broadcasting-satellite service<br>(television)         |
| EX          | Experimental station  |
| FA          | Aeronautical station  |
| FB          | Base station  |
| FC          | Coast station   |
| FL          | Land station  |

| <u>Code</u> | <u>Class of Station</u>   |
|-------------|---|
| FP          | Port station  |
| FR          | Receiving station only, connected with the general network of telecommunications channels |
| FS          | Land station established solely for the safety of life                                    |
| FX          | Fixed station   |
| GS          | Station on board a warship or a military or naval aircraft                                |
| LR          | Radiolocation land station  |
| MA          | Aircraft station  |
| ME          | Space station   |
| ML          | Land mobile station   |
| MO          | Mobile station  |
| MR          | Radiolocation mobile station  |
| MS          | Ship station  |
| NL          | Maritime radionavigation land station   |
| OD          | Oceanographic data station  |
| OE          | Oceanographic data interrogating station  |
| PA          | Passenger ship  |
| RA          | Radio astronomy station   |
| RC          | Non-directional radiobeacon   |
| RD          | Directional radiobeacon   |
| RG          | Radio direction-finding station   |
| RM          | Maritime radionavigation mobile station   |
| RT          | Revolving radiobeacon   |
| SM          | Meteorological aids station   |
| SS          | Standard frequency station  |
| TA          | Space operation earth station in the amateur-satellite service                            |
| TC          | Earth station in the fixed-satellite service  |
| TD          | Space telecommand earth station   |
| TE          | Transmitting earth station  |

| <u>Code</u> | <u>Class of Station</u>   |
|-------------|---|
| TF          | Fixed earth station in the radio determination-satellite service                  |
| TG          | Mobile earth station in the maritime mobile-satellite service                     |
| TH          | Earth station in the space research service                                       |
| TI          | Earth station in the maritime mobile-satellite service at a specified fixed point |
| TK          | Space tracking earth station  |
| TL          | Mobile earth station in the radio determination-satellite service                 |
| TM          | Earth station in the meteorological-satellite service                             |
| TN          | Earth station in the radionavigation-satellite service                            |
| TP          | Receiving earth station   |
| TR          | Space telemetering earth station  |
| TS          | Television, sound channel   |
| TT          | Earth station in the space operation service                                      |
| TV          | Television, vision channel  |

The reference symbol for numerical licence types is as follows:

|   |                  |
|---|------------------|
| 1 | Land station     |
| 2 | Mobile station   |
| 3 | Ship station     |
| 4 | Coast station    |
| 5 | Earth station    |
| 6 | Aircraft station |
| 7 | Space station    |

To obtain the total number of assignments for a given class of service it is necessary to add the alphabetical and numeric codes.

Example: To obtain the total number of mobiles in a band, the "ML" and "2" codes should be added.

ALLOCATION

30.005-30.01 MHz  
MOBILE  
SPACE RESEARCH  
Fixed

EXISTING USAGE POLICY/RULES

A limited number of frequencies are available in the 29.70-30.56 MHz segment of spectrum which includes this band for land mobile and fixed service systems on the basis of 20 kHz channel spacing.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
|                 |         |         |         |        |          |

ALLOCATION

30.01-37.5 MHz  
MOBILE  
Fixed

EXISTING USAGE POLICY/RULES

Certain frequencies in the band 29.70-30.56 and 30.56-50 (37.5) MHz are available for Land Mobile and Fixed service usage. Additionally, frequencies in the 35 MHz range are available to provide a radio paging service. Provision is also made for the operation of Automatic Repeaters in the band 26.41-50 MHz. Mobile channel spacing is typically 20 kHz. This band also contains the 12 base transmit frequencies set aside for GLMRS operation by common carriers

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| AL              |         |         |         | 1      |          |
| EX              | 6       | 4       | 3       | 11     | 1        |
| FA              |         |         | 4       |        |          |
| FB              | 42      | 208     | 299     | 166    | 66       |
| FL              |         |         | 4       | 5      |          |
| FX              | 7       | 17      | 59      | 49     | 14       |
| MA              |         | 12      | 4       | 3      |          |
| ML              | 54      | 3813    | 858     | 607    | 235      |
| RA              |         |         | 3       |        |          |
| FBFX            | 1       | 1       | 35      | 18     |          |
| FC              | 4       |         |         |        |          |
| MO              | 1       |         |         |        |          |
| MS              | 71      |         |         |        |          |
| OD              | 1       |         |         |        |          |

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| 1               | 3       |         | 7       | 1      |          |
| 2               | 90      | 214     | 1057    | 243    | 61       |
| 3               | 69      |         | 2       |        |          |
| 6               |         |         | 2       | 1      |          |

Comment

In the case of the 12 GLMRS channels (set aside for public correspondence radio telephone service), there has been little or no use. Currently, public correspondence is being provided on a more universal basis in the VHF (150 MHz band) and in the 800 MHz cellular band. For this reason, there appears little justification to retain the designation of these 12 channels for this purpose in future. Comments are requested.





ALLOCATION

37.5-38.25 MHz  
MOBILE  
Fixed  
Radio Astronomy

FN 547

EXISTING USAGE POLICY/RULES

Certain frequencies in the band 30.56-50.00 (37.5) MHz are available for Land Mobile and Fixed Service usage. Additionally, frequencies in the 35 MHz range are available to provide a radio paging service. Provision is also made for the operation of Automatic Repeaters in the band 27.41-50 MHz. FN 547 urges Administrations to provide whatever protection from interference is practicable to the radioastronomy service which is allocated on a secondary basis.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FB              |         | 13      | 5       | 15     | 3        |
| FX              | 3       | 4       | 16      | 3      | 3        |
| ML              |         | 40      | 34      | 455    | 10       |
| RA              |         |         | 1       |        |          |
| FBFX            |         |         | 9       | 10     |          |
| 2               |         | 16      | 77      | 262    | 9        |
| 3               |         |         |         | 1      |          |

Comment

As the Algonquin Park Radio Astronomy observatory is being "mothballed", the continued need to protect that site from other radio transmissions in this band is questionable. A three year delay in taking any such decision has, however, been requested by NRC officials prior to making any assignments in proximity to the site until a final determination is made on its future. This waiting period would expire on June 1, 1990. Comments are requested.



ALLOCATION

38.25-39.986 MHz  
MOBILE  
Fixed

EXISTING USAGE POLICY/RULES

Special applications for which frequencies in this band are available are Emergency Traffic Control Systems (38-43.62 MHz) and Remote Control of Fire Alarm Systems. Some Canada-wide assignments have also been accommodated in this band.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| EX              |         |         | 2       |        |          |
| FB              | 3       | 52      | 17      | 20     | 9        |
| FX              | 2       | 6       | 15      | 27     | 4        |
| ML              | 6       | 126     | 49      | 208    |          |
| FBFX            |         | 2       | 1       | 11     |          |
| MS              | 8       |         |         |        |          |
| AL              |         | 1       |         |        |          |
| MA              |         | 4       |         |        |          |
| 2               | 5       | 100     | 57      | 240    | 5        |
| 3               | 11      |         |         | 1      |          |



ALLOCATION

39.986-40.02 MHz  
MOBILE  
Fixed  
Space Research

EXISTING USAGE POLICY/RULES

As in the previous band, special applications for which this band is available are Emergency Traffic Control Systems and the Remote Control of Fire Alarm Systems.  
(38-43.62 MHz)

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FB              |         | 3       | 2       | NIL    | 1        |
| ML              |         | 2       | 6       |        | 1        |
| FX              | 1       | 1       |         |        |          |
| 2               |         | 7       |         |        |          |

ALLOCATION

40.02-40.98 MHz  
MOBILE  
Fixed

FN 548

EXISTING USAGE POLICY/RULES

FN 548 specifies that ISM operations in this band utilize a centre frequency of 40.68 MHz with a lower limit of 40.66 MHz and an upper limit of 40.70 MHz within which limits there is no protection from interference.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FA              |         |         | 2       |        |          |
| FB              |         | 23      | 17      | 46     | 3        |
| FL              |         |         | 1       |        |          |
| FX              | 3       | 5       | 18      | 93     | 1        |
| ML              | 3       | 81      | 48      | 317    | 28       |
| MO              |         |         | 2       |        |          |
| FBFX            |         |         | 3       | 39     |          |
| EX              |         | 1       |         |        |          |
| MA              |         | 3       |         |        |          |
| LR              |         |         |         | 1      |          |
| MS              | 1       |         |         |        |          |
| 2               | 5       | 46      | 92      | 699    | 2        |
| 3               | 12      |         |         |        |          |

ALLOCATION

40.98-41.015 MHz  
MOBILE  
Fixed  
Space Research

EXISTING USAGE POLICY/RULES

Assignments in this band are made with due regard to the potential for interference to the intermediate frequency of older type television receivers.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| ML              | NIL     | 1       | 5       | NIL    | 3        |
| FB              |         | 2       |         |        |          |
| EX              |         |         |         |        | 1        |
| 2               |         | 2       |         |        |          |



ALLOCATION

41.015-47 MHz  
MOBILE  
Fixed

EXISTING USAGE POLICY/RULES

Authorized power is limited in certain geographic areas so as to preclude interference to the I.F. of TV receivers. This band also contains 12 mobile transmit frequencies set aside for GLMRS operation by common carriers paired with the 35 MHz base station frequencies in the band 30.01-37.5 MHz. Some large system operators utilize the band.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| EX              | 8       | 5       | 2       | 1      | 1        |
| FA              | 1       |         | 213     |        |          |
| FB              | 12      | 136     | 1213    | 91     | 69       |
| FL              | 1       |         | 1       |        |          |
| FR              |         |         | 4       |        |          |
| FX              | 15      | 39      | 410     | 105    | 57       |
| MA              | 1       | 2       | 210     | 1      |          |
| ML              | 35      | 522     | 1814    | 238    | 200      |
| MS              | 14      |         | 14      |        |          |
| FBFX            | 1       | 5       | 2353    | 31     | 8        |
| FC              | 1       |         |         |        |          |
| MO              | 1       |         |         |        |          |
| 1               |         |         | 15      |        |          |
| 2               | 27      | 372     | 25257   | 583    | 660      |
| 3               | 24      |         | 115     |        |          |
| 6               |         | 12      | 369     |        |          |

Comment

In the case of the 12 GLMRS channels (set aside for public correspondence radio telephone service), there has been little or no use. Currently, public correspondence is being provided on a more universal basis in the VHF (150 MHz band) and in the 800 MHz cellular band. For this reason, there appears little justification to retain the designation of these 12 channels for this purpose in future. Comments are requested.

41.015 - 47 MHz

|      | H<br>A<br>L<br>I<br>F<br>A<br>X | Q<br>U<br>E<br>B<br>E<br>C | M<br>O<br>N<br>T<br>R<br>E<br>A<br>L | O<br>T<br>T<br>A<br>W<br>A | T<br>O<br>R<br>O<br>N<br>T<br>O | H<br>A<br>M<br>I<br>L<br>T<br>O<br>N | K<br>I<br>T<br>C<br>H<br>E<br>N<br>E<br>R | L<br>O<br>N<br>D<br>O<br>N | W<br>I<br>N<br>N<br>I<br>P<br>E<br>G | C<br>A<br>L<br>G<br>A<br>R<br>Y | E<br>D<br>M<br>O<br>N<br>T<br>O<br>N | V<br>A<br>N<br>C<br>O<br>U<br>V<br>E<br>R | V<br>I<br>C<br>T<br>O<br>R<br>I<br>A |
|------|---------------------------------|----------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------------|---|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|---|--------------------------------------|
| EX   |                                 |                            | 1                                    | 1                          | 1                               |                                      |   |                            |                                      | 2                               | 1                                    | 1   | 7                                    |
| FB   | 7                               | 12                         | 17                                   | 227                        | 281                             | 94                                   | 80  | 119                        | 8                                    | 15                              | 32                                   | 2   | 1                                    |
| FR   |                                 |                            |                                      |                            |                                 |                                      |   | 5                          |                                      |                                 |                                      |   |                                      |
| FX   | 4                               | 6                          | 16                                   | 16                         | 9                               | 7                                    | 20  | 19                         | 3                                    |                                 | 3                                    | 6   | 3                                    |
| MA   |                                 |                            | 37                                   |                            |                                 |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| ML   | 1                               | 10                         | 131                                  | 16                         | 811                             | 65                                   | 151                                       | 111                        | 25                                   | 131                             | 278                                  | 4   | 6                                    |
| MS   |                                 |                            |                                      | 1                          |                                 | 4                                    |   | 4                          |                                      |                                 |                                      | 24  | 5                                    |
| FBFX |                                 | 1                          | 3                                    | 8                          | 9                               | 2                                    | 36  | 28                         | 2                                    | 1                               | 2                                    |   |                                      |
| 1    |                                 |                            |                                      |                            | 2                               |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| 2    | 55                              | 47                         | 133                                  | 450                        | 4019                            | 505                                  | 925                                       | 1105                       | 27                                   | 86                              | 205                                  | 14  |                                      |
| 3    |                                 |                            |                                      | 2                          | 9                               |                                      |   | 33                         |                                      |                                 |                                      | 5   | 4                                    |
| 6    |                                 |                            |                                      |                            | 8                               | 11                                   | 6   | 22                         | 12                                   |                                 |                                      |   |                                      |

ALLOCATION

47-50 MHz  
MOBILE  
Fixed

EXISTING USAGE POLICY/RULES

This is a moderately congested band devoted primarily to land mobile usage with heaviest concentration in a corridor extending 120 km north along the Canada/U.S. border. There is a mix of other uses in this band with some station-to-station linking usage. Cordless telephones operating at 49 MHz are also found in this band.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| EX              | 4       | 10      | 6       | 4      |          |
| FA              |         | 1       | 33      |        |          |
| FB              | 32      | 269     | 598     | 151    | 62       |
| FL              |         |         | 3       | 2      |          |
| FX              | 37      | 121     | 157     | 240    | 40       |
| MA              |         | 1       | 48      |        | 1        |
| ML              | 792     | 2710    | 13936   | 890    | 84       |
| MO              | 1       |         | 12      |        |          |
| FBFX            | 9       | 40      | 37      | 48     | 4        |
| LR              |         | 1       |         | 2      |          |
| FC              | 1       |         |         |        |          |
| MS              | 7       |         |         |        |          |
| 1               | 2       |         | 2       | 1      |          |
| 2               | 677     | 1964    | 38070   | 960    | 1362     |
| 3               | 3       |         | 2       | 1      |          |
| 6               |         | 1       | 214     |        | 10       |

ALLOCATION

50-54 MHz  
AMATEUR  
Fixed

EXISTING USAGE POLICY/RULES

Amateur automatic repeaters and remote control operation are contained in this band.

There are some 23,000 licensed radio amateurs in Canada and approximately 565 licensed amateur repeater stations but only 9 in this band. Radio amateur licensees, by virtue of the authorization given them operate on various frequencies within bands allocated to the service, employing different modes of emission.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| AT              | 4148    | 3732    | 9050    | 4185   | 2530     |
| AT*             |         | 2       | 6       | 1      |          |
| FX              | 1       |         |         |        |          |
| ML              | 2       |         | 1       |        |          |

AT\* denotes Amateur Repeater

Comment

While there are a large number of licensed amateurs in Canada, this band does not appear to be heavily used by them. The Department would be interested in the reason for this. In particular, if there are regulatory or operational impediments which causes this low usage, the Department would be interested in recommendations from existing and potential new amateurs as to how to improve upon this situation.

## ALLOCATION

54-72 MHz]  
76-88 MHz] Broadcasting (VHF)  
174-216 MHz]

## EXISTING USAGE POLICY/RULES

VHF television broadcasting channels are at 6 MHz separation, and are allotted in the following manner:

54-72 MHz - Television Channels 2, 3 and 4  
76-88 MHz - Television Channels 5 and 6  
174-216 MHz - Television Channels 7, 8, 9, 10, 11, 12 and 13

VHF channel assignments are made according to technical criteria translated into protection and coverage rules regarding the separation distances, classes and protection of allotments to their B signal contour.

The allotment and assignment of television channels by Canada and the United States within their respective co-ordination zones are set out in "Working Arrangement for the Allotment and Assignment of VHF and UHF Television Broadcasting Channels Under the Canadian-USA Television Agreement of 1952" and various revisions to the working arrangement.

## BACKGROUND

All regular TV stations are planned, allocated and coordinated by agreement between Canada and the U.S. to prevent interference within the border areas. Low-power stations are assigned to provide service to areas beyond the normal coverage area of existing television stations.

The addition or drop-in of any new regular TV station may require revisions to a number of existing assignments/and or allotments within the local area.

In April 1983, the CRTC requested comments on the use of the VBI (Vertical Blanking Interval) for services. On May 17, 1984, the CRTC issued a notice allowing the use of the VBI for broadcasting and non-broadcasting services on an experimental basis for a two-year period.

In the major population centres in Canada, i.e. southern Ontario, Vancouver and Montreal, all available VHF television channels have been assigned.

Channels are available outside large centres for services to small communities and extension of services.

CLASSES AND MAXIMUM PERMISSIBLE PARAMETERS - VHF

| <u>Class</u> | <u>Maximum Effective Radiated Power (ERP)</u> | <u>Antenna Height Above Average Terrain (EHAAT)</u> |
|--------------|---|---|
| R            | Ch. 2-6, 100 kW<br>Ch. 7-13, 325 kW           | Ch. 2-6, 300 metres.<br>Ch. 7-13, 300 metres.       |
| LP           | 50 watts<br>Transmitter Power                 | Coverage Dependent                                  |
| VLP          | 2 watts<br>Transmitter Power                  | 30 metres   |

USAGE - VHF BROADCASTING

July 3, 1987

| REGION   | PROVINCE           | ASSIGNMENTS |     |     |       | ALLOTMENTS | PROPOSALS<br>(NON ALLOTTED CHANNELS) |    |    |     |
|----------|--------------------|-------------|-----|-----|-------|------------|--------------------------------------|----|----|-----|
|          |                    | R           | LP  | VLP | TOTAL |            | R                                    | R  | LP | VLP |
| PACIFIC  | B.C.<br>Ch. 2-13   | 55          | 237 | 0   | 292   | 12         | 8                                    | 87 | 11 | 106 |
|          | Y.T.<br>Ch. 2-13   | 3           | 16  | 0   | 19    | 7          | 0                                    | 7  | 0  | 7   |
| CENTRAL  | ALTA.<br>Ch. 2-13  | 52          | 69  | 0   | 121   | 1          | 7                                    | 23 | 2  | 32  |
|          | SASK.<br>Ch. 2-13  | 52          | 28  | 2   | 82    | 4          | 6                                    | 29 | 0  | 35  |
|          | MAN.<br>Ch. 2-13   | 35          | 30  | 4   | 69    | 18         | 1                                    | 7  | 1  | 9   |
|          | N.W.T.<br>Ch. 2-13 | 6           | 70  | 1   | 77    | 12         | 0                                    | 24 | 0  | 24  |
| ONTARIO  | ONT.<br>Ch. 2-13   | 75          | 98  | 0   | 173   | 6          | 13                                   | 12 | 0  | 25  |
| QUEBEC   | QUE.<br>Ch. 2-13   | 90          | 88  | 4   | 182   | 18         | 8                                    | 14 | 10 | 32  |
| ATLANTIC | N.B.<br>Ch. 2-13   | 16          | 9   | 0   | 25    | 0          | 0                                    | 0  | 0  | 0   |
|          | N.S.<br>Ch. 2-13   | 27          | 19  | 0   | 46    | 1          | 1                                    | 0  | 0  | 1   |
|          | P.E.I.<br>Ch. 2-13 | 6           | 0   | 0   | 6     | 0          | 0                                    | 0  | 0  | 0   |
|          | NFLD.<br>Ch. 2-13  | 49          | 90  | 0   | 139   | 4          | 2                                    | 4  | 0  | 6   |

ALLOCATION

72-73 MHz  
FIXED  
MOBILE

EXISTING USAGE POLICY/RULES

Assignments are available in this band at 20 kHz channel spacing, at low power for industrial applications involving safety of personnel, control of machinery, wireless microphones etc. Assignments are made so as to preclude interference to TV channels 4 and 5 and to aeronautical navigational facilities in the band 74.5-75.2 MHz.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FB              |         | 7       | 6       | 4      | 14       |
| FX              | 1       | 8       | 2       | 1      | 5        |
| ML              | 252     | 27      | 107     | 58     | 87       |
| MO              |         | 2       | 2       |        |          |
| EX              |         | 3       | 77      | 262    | 9        |
| FA              |         | 4       |         |        |          |
| MA              |         | 2       |         |        |          |
| 2               | 243     | 208     | 77      | 21     | 78       |



ALLOCATION

73-74.6 MHz  
RADIOASTRONOMY

FN 569

EXISTING USAGE POLICY/RULES

The provisions of international FN 569 required clearing the band of all except radioastronomy assignments by 31 December 1985. As a consequence, there are few Canadian assignments made in this band.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| RA              | NIL     | NIL     | 2       | NIL    |          |
| FX              |         |         |         |        | 1        |
| 2               |         |         | 4       |        |          |

Comment

As the Algonquin Park Radio Astronomy observatory is being "mothballed", the continued need to protect that site from other radio transmissions in this band is questionable. A three year delay in taking any such decision has, however, been requested by NRC officials prior to making any assignments in proximity to the site until a final determination is made on its future. This waiting period would expire on June 1, 1990. Comments are requested.

ALLOCATION

74.6-74.8 MHz  
FIXED  
MOBILE

FN 572

EXISTING USAGE POLICY/RULES

International FN 572 requires Canada to minimize allocations in this band so as to protect aeronautical radionavigation facilities operating in the band 74.8-75.2. Assignments of a low power nature in specific geographical areas are, however, available on a case by case basis.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
|                 | NIL     | NIL     | NIL     | NIL    | NIL      |
|                 |         |         |         |        |          |
|                 |         |         |         |        |          |

ALLOCATION

74.8-75.2 MHz  
AERONAUTICAL RADIONAVIGATION

FN 572

EXISTING USAGE POLICY/RULES

International FN 572 provides protection criteria to aeronautical radionavigation facilities.

This band is devoted exclusively on a world-wide basis to aeronautical radionavigation devices such as cone of silence markers, fan markers and marker beacons all of which are located throughout travelled air routes. Assignments in adjacent bands are accordingly made with due caution.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| AL              | 43      | 99      | 62      | 42     | 52       |
| FA              | 4       | 1       |         |        | 24       |
| RC              | 2       |         |         |        |          |
| RD              | 2       |         |         |        |          |
| FB              |         |         |         |        | 1        |
| 1               | 9       | 3       | 1       | 9      |          |
| 6               |         |         | 1       |        |          |
| 2               |         | 1       |         |        |          |

Comment

The worldwide use of this band by aeronautical radio navigation would appear to preclude its use for other services at this time.

ALLOCATION

75.2-76 MHz  
FIXED  
MOBILE

FN 572

EXISTING USAGE POLICY/RULES

International FN 572 requires Canada to minimize allocations in this band so as to protect aeronautical radionavigation facilities operating in the band 74.8-75.2. Assignments of a low power nature in specific geographical areas are, however, available on a case by case basis.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FB              |         | 1       | 3       |        | 6        |
| ML              |         | 4       | 30      | 19     | 11       |
| 2               | 1       | 196     | 27      | 14     | 51       |

ALLOCATION

76-108 MHz  
BROADCASTING

See broadcasting information contained at  
band 54-72 MHz.

ALLOCATION

88-108 MHz Broadcasting - FM

EXISTING USAGE POLICY/RULES

FM broadcasting channels are allotted in the band 88 to 108 MHz and are at 200 kHz separation. Their centre frequencies begin at 88.1 MHz (channel no. 201) and continue in successive steps up to and including 107.9 MHz (channel no. 300).

Frequency assignments are made according to technical criteria translated into distance separations from existing stations, or planned stations (allotments) in order to provide interference protection to co-channel and adjacent channel (first, second, third) frequencies. (Limitations exist on channels 201 to 220 where TV channel 6 is to be used in the same area and on assignments mainly with frequencies above 107 MHz to avoid interference with aeronautical navigation services).

The allotment and assignment of FM Broadcasting Channels by Canada and the United States in the area lying within 320 kilometres of their common border are set out in the Canada-U.S.A. FM Broadcasting Agreement of 1947 and various revisions to the working arrangement made there under.

CLASSES AND MAXIMUM PERMISSIBLE PARAMETERS - FM

| <u>Class</u> | <u>Maximum Effective Radiated Power (ERP)</u> | <u>Antenna Height Above Average Terrain (EHATT)</u> |
|--------------|---|---|
| A            | 3 kW  | 100 metres  |
| B            | 50 kW   | 150 metres  |
| C            | 100 kW  | 600 metres  |
| C1           | 100 kW  | 300 metres  |
| LP           | 50 Watts                                      | 60 metres   |
| VLP          | 10 Watts                                      | 30 metres   |

Comment

Recently, there was a proposal in the U.S. to establish a new FM broadcast radio band in the 225-230 MHz range to provide relief for the current congested state of the FM radio band and room for full-time operation for the main U.S. day time only AM stations (daytimers). While FM radio channels are 200 kHz wide, it must be noted that FM radio "taboos" exist which "waste" three adjacent channels on either side of the assigned FM station plus one image channel and one IF related channel. Therefore, due to FM radio receiver standards (or lack thereof) each 200 kHz assignment to an FM station results in non-use of 1600 kHz. Until this use-to-waste factor can be significantly increased through receiver improvements, or other techniques, it seems unreasonable for the Department to consider reallocation of other non-broadcast bands where perhaps the same inefficiencies would be perpetuated. Comments on this matter are requested.

USAGE - FM BROADCASTING

July 3, 1987

| REGION   | PROVINCE | ASSIGNMENTS |    |    |    |    |     |       | ALLOTMENTS |    |    |     |       | PROPOSALS<br>(NON ALLOTTED CHANNELS) |   |   |    |    |     |       |  |
|----------|----------|-------------|----|----|----|----|-----|-------|------------|----|----|-----|-------|--------------------------------------|---|---|----|----|-----|-------|--|
|          |          | A           | B  | C  | CI | LP | VLP | TOTAL | A          | B  | C  | CI  | TOTAL | A                                    | B | C | CI | LP | VLP | TOTAL |  |
| PACIFIC  | B.C.     |             |    |    |    |    |     |       |            |    |    |     |       |                                      |   |   |    |    |     |       |  |
|          | 201-220  | 10          | 5  | 2  | 0  | 1  | 0   | 18    | 66         | 12 | 7  | 0   | 85    | 0                                    | 0 | 0 | 0  | 1  | 1   | 2     |  |
|          | 221-300  | 51          | 27 | 15 | 0  | 19 | 0   | 112   | 144        | 55 | 9  | 0   | 208   | 13                                   | 8 | 4 | 0  | 9  | 6   | 40    |  |
|          | Y.T.     |             |    |    |    |    |     |       |            |    |    |     |       |                                      |   |   |    |    |     |       |  |
|          | 201-220  | 0           | 0  | 0  | 0  | 1  | 12  | 13    | 0          | 0  | 0  | 0   | 0     | 0                                    | 0 | 0 | 0  | 1  | 3   | 3     |  |
|          | 221-300  | 1           | 0  | 0  | 0  | 3  | 1   | 4     | 0          | 0  | 2  | 0   | 2     | 1                                    | 0 | 0 | 0  | 1  | 1   | 3     |  |
| CENTRAL  | ALTA.    |             |    |    |    |    |     |       |            |    |    |     |       |                                      |   |   |    |    |     |       |  |
|          | 201-220  | 5           | 1  | 3  | 0  | 1  | 0   | 10    | 12         | 10 | 2  | 0   | 24    | 2                                    | 3 | 0 | 0  | 0  | 1   | 6     |  |
|          | 121-300  | 14          | 8  | 23 | 0  | 9  | 0   | 54    | 31         | 30 | 11 | 0   | 72    | 1                                    | 0 | 2 | 0  | 3  | 8   | 14    |  |
|          | SASK.    |             |    |    |    |    |     |       |            |    |    |     |       |                                      |   |   |    |    |     |       |  |
|          | 201-220  | 1           | 1  | 0  | 0  | 0  | 0   | 2     | 28         | 31 | 2  | 0   | 61    | 0                                    | 0 | 0 | 0  | 1  | 2   | 2     |  |
|          | 221-300  | 14          | 7  | 8  | 0  | 1  | 0   | 30    | 23         | 26 | 26 | 0   | 75    | 1                                    | 0 | 1 | 0  | 2  | 0   | 4     |  |
|          | MAN.     |             |    |    |    |    |     |       |            |    |    |     |       |                                      |   |   |    |    |     |       |  |
|          | 201-220  | 2           | 0  | 0  | 0  | 0  | 0   | 2     | 28         | 4  | 1  | 0   | 33    | 0                                    | 0 | 0 | 0  | 0  | 0   | 0     |  |
| 221-300  | 22       | 6           | 9  | 0  | 2  | 1  | 40  | 25    | 10         | 14 | 0  | 49  | 1     | 0                                    | 5 | 0 | 1  | 1  | 7   |       |  |
|          | N.W.T.   |             |    |    |    |    |     |       |            |    |    |     |       |                                      |   |   |    |    |     |       |  |
|          | 201-220  | 0           | 0  | 0  | 0  | 0  | 0   | 0     | 0          | 0  | 0  | 0   | 0     | 0                                    | 0 | 0 | 0  | 0  | 0   | 0     |  |
| 221-300  | 13       | 0           | 0  | 0  | 24 | 0  | 37  | 1     | 0          | 0  | 0  | 1   | 3     | 0                                    | 0 | 0 | 14 | 0  | 17  |       |  |
| ONTARIO  | ONT.     |             |    |    |    |    |     |       |            |    |    |     |       |                                      |   |   |    |    |     |       |  |
|          | 201-220  | 6           | 8  | 0  | 3  | 4  | 11  | 32    | 34         | 34 | 5  | 7   | 90    | 5                                    | 7 | 0 | 1  | 1  | 15  | 29    |  |
| 221-300  | 21       | 46          | 11 | 27 | 5  | 1  | 110 | 51    | 32         | 46 | 2  | 131 | 7     | 15                                   | 1 | 3 | 6  | 2  | 34  |       |  |
| QUEBEC   | QUE.     |             |    |    |    |    |     |       |            |    |    |     |       |                                      |   |   |    |    |     |       |  |
|          | 201-220  | 9           | 8  | 0  | 0  | 1  | 7   | 27    | 31         | 19 | 1  | 1   | 52    | 0                                    | 4 | 0 | 0  | 2  | 0   | 4     |  |
| 221-300  | 61       | 16          | 8  | 19 | 23 | 6  | 133 | 142   | 32         | 14 | 7  | 195 | 13    | 10                                   | 5 | 5 | 11 | 4  | 48  |       |  |
| ATLANTIC | N.B.     |             |    |    |    |    |     |       |            |    |    |     |       |                                      |   |   |    |    |     |       |  |
|          | 201-220  | 1           | 3  | 1  | 0  | 0  | 0   | 5     | 7          | 6  | 2  | 0   | 15    | 0                                    | 0 | 0 | 0  | 0  | 0   | 0     |  |
|          | 221-300  | 2           | 6  | 6  | 0  | 3  | 0   | 17    | 9          | 24 | 5  | 0   | 38    | 3                                    | 3 | 4 | 1  | 0  | 0   | 11    |  |
|          | N.S.     |             |    |    |    |    |     |       |            |    |    |     |       |                                      |   |   |    |    |     |       |  |
|          | 201-220  | 4           | 0  | 1  | 0  | 0  | 0   | 5     | 9          | 1  | 1  | 0   | 11    | 0                                    | 0 | 0 | 0  | 0  | 0   | 0     |  |
|          | 221-300  | 8           | 8  | 12 | 0  | 2  | 0   | 30    | 15         | 28 | 11 | 0   | 54    | 1                                    | 1 | 0 | 0  | 4  | 0   | 6     |  |
|          | P.E.I.   |             |    |    |    |    |     |       |            |    |    |     |       |                                      |   |   |    |    |     |       |  |
|          | 201-220  | 0           | 0  | 1  | 0  | 0  | 0   | 1     | 0          | 1  | 1  | 0   | 2     | 0                                    | 0 | 0 | 0  | 0  | 0   | 0     |  |
| 221-300  | 0        | 1           | 1  | 0  | 0  | 0  | 2   | 2     | 3          | 2  | 0  | 7   | 0     | 0                                    | 0 | 0 | 0  | 0  | 0   |       |  |
|          | NFLD.    |             |    |    |    |    |     |       |            |    |    |     |       |                                      |   |   |    |    |     |       |  |
|          | 201-220  | 4           | 3  | 1  | 0  | 0  | 2   | 10    | 10         | 3  | 3  | 0   | 16    | 0                                    | 0 | 0 | 0  | 0  | 2   | 2     |  |
| 221-300  | 18       | 6           | 8  | 0  | 1  | 1  | 34  | 34    | 30         | 7  | 0  | 71  | 1     | 3                                    | 1 | 0 | 0  | 1  | 6   |       |  |



ALLOCATION

108-117.975 MHz  
AERONAUTICAL RADIONAVIGATION

EXISTING USAGE POLICY/RULES

This band is allocated exclusively on a world-wide basis for aircraft navigational purposes in which facilities such as Instrument Landing Systems Localizers (ILS), VHF Omni-Ranges (VOR's) all operate.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| AL              | 64      | 118     | 71      | 58     | 43       |
| EX              | 2       | 9       | 7       | 2      | 5        |
| FA              | 13      | 6       | 7       | 5      | 25       |
| FX              |         |         | 3       |        |          |
| LR              | 2       | 1       | 2       | 2      |          |
| RC              | 1       |         | 2       |        |          |
| 1               | 7       | 2       | 3       | 10     | 1        |
| 2               | 2       | 2       | 1       | 1      |          |
| RD              | 1       |         |         |        |          |
| FB              |         |         |         |        | 1        |

Comment

The worldwide use of this band for aeronautical radionavigation would appear to preclude its use for other services at this time.

ALLOCATION

117.975-137 MHz  
AERONAUTICAL MOBILE (R)

FN 501, 592, 593, 595

EXISTING USAGE POLICY/RULES

In accordance with ITU FN 595 the band 136-137 MHz is shared on a primary basis with Space Operation, Meteorological-Satellite and Space Research services until January 1, 1990, at which time the Aeronautical Mobile (R) Service will be the sole service in the band. International FN's 501, 592 and 593 deal with aeronautical emergency frequencies within this band in terms of usage and protection criteria.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| AL              |         | 3       | 5       | 8      |          |
| AM              | 1       |         | 3       | 2      |          |
| AX              | 128     | 223     | 154     | 146    | 133      |
| EX              | 2       | 9       | 6       | 14     | 7        |
| FA              | 593     | 1517    | 1136    | 673    | 370      |
| FB              | 2       | 18      | 33      | 10     | 32       |
| FL              |         | 1       | 6       |        |          |
| FX              | 3       | 9       | 11      | 4      |          |
| MA              | 3218    | 5888    | 4378    | 2221   | 634      |
| ML              | 495     | 878     | 270     | 554    | 441      |
| MS              | 14      | 2       | 10      | 6      | 33       |
| RG              |         |         | 6       |        |          |
| TM              |         |         | 1       |        |          |

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| 6               | 120     | 56      | 148     | 141    | 177      |
| MO              | 35      | 10      |         | 1      | 8        |
| FBFX            | 1       |         |         | 2      |          |
| FC              | 4       |         |         |        |          |
| LR              |         | 1       |         |        |          |
| 1               | 3       | 35      | 14      | 18     | 15       |
| 2               | 225     | 336     | 340     | 546    | 287      |
| 3               | 20      | 9       | 18      | 23     | 20       |

Comment

Due to the international nature of use of this band, no changes are currently foreseen.

ALLOCATION

137-138 MHz  
SPACE OPERATION (space-to-Earth)  
METEOROLOGICAL-SATELLITE (space-to-Earth)  
SPACE RESEARCH (space-to-Earth)

EXISTING USAGE POLICY/RULES

These primary allocations are on a world-wide basis.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FL              |         |         | 6       | NIL    |          |
| TM              |         |         | 2       |        |          |
| FB              | 1       |         |         |        |          |
| MA              | 1       |         |         |        |          |
| ML              | 10      | 2       |         |        |          |
| FBFX            | 2       |         |         |        |          |
| EX              |         | 1       |         |        |          |
| FX              |         |         |         |        | 1        |
| 1               | 8       | 5       |         |        |          |
| 2               |         | 2       |         |        |          |

ALLOCATION

138-144 MHz  
FIXED  
LAND MOBILE  
Space Research (space-to-Earth)

EXISTING USAGE POLICY/RULES

This is a heavily utilized band in Canada devoted primarily to simplex and duplex land mobile assignments employing 30 kHz channel spacing; however centre frequencies are often off-set by 15 kHz so that additional assignments can be made. The band is extensively utilized by high capacity province and region-wide systems employing many stations. Usage is heaviest in the 80 mile corridor paralleling the Canada/U.S. border.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| EX              |         | 9       | 3       | 2      | 1        |
| FA              |         | 3       | 4       |        | 3        |
| FB              | 800     | 811     | 1719    | 968    | 198      |
| FC              | 1       |         | 8       | 1      | 1        |
| FL              | 6       | 32      | 9       | 4      | 2        |
| FR              |         |         | 4       |        |          |
| FX              | 531     | 1599    | 532     | 723    | 424      |
| ML              | 39952   | 38750   | 30412   | 20966  | 4259     |
| MO              |         | 57      | 30      | 4      |          |
| MS              | 537     |         | 6       | 202    | 3        |
| FBSX            | 282     | 422     | 460     | 432    | 81       |
| MA              | 59      |         |         | 10     |          |
| OD              | 12      |         |         |        | 12       |
| 1               | 7       | 56      | 11      | 7      | 3        |
| 2               | 14630   | 20926   | 11456   | 14001  | 349      |
| 3               | 50      |         | 1       |        | 1        |
| 6               |         |         |         |        | 5        |

138 - 144 MHz

|      | H<br>A<br>L<br>I<br>F<br>A<br>X | Q<br>U<br>E<br>B<br>E<br>C | M<br>O<br>N<br>T<br>R<br>E<br>A<br>L | O<br>T<br>T<br>A<br>W<br>A | T<br>O<br>R<br>O<br>N<br>T<br>O | H<br>A<br>M<br>I<br>L<br>T<br>O<br>N | K<br>I<br>T<br>C<br>H<br>E<br>N<br>E<br>R | L<br>O<br>N<br>D<br>O<br>N | W<br>I<br>N<br>N<br>I<br>P<br>E<br>G | C<br>A<br>L<br>G<br>A<br>R<br>Y | E<br>D<br>M<br>O<br>N<br>T<br>O<br>N | V<br>A<br>N<br>C<br>O<br>U<br>V<br>E<br>R | V<br>I<br>C<br>T<br>O<br>R<br>I<br>A |
|------|---------------------------------|----------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------------|---|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|---|--------------------------------------|
| EX   | 1                               |                            | 2                                    |                            |                                 |                                      |   |                            | 6                                    |                                 | 1                                    |   |                                      |
| FA   |                                 |                            |                                      | 4                          |                                 |                                      |   |                            |                                      | 2                               |                                      |   |                                      |
| FB   | 112                             | 131                        | 300                                  | 245                        | 392                             | 156                                  | 136                                       | 190                        | 28                                   | 145                             | 302                                  | 223                                       | 140                                  |
| FC   |                                 |                            | 1                                    |                            |                                 |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| FL   |                                 |                            |                                      |                            |                                 |                                      |   | 1                          |                                      |                                 |                                      |   |                                      |
| FR   |                                 |                            |                                      | 2                          |                                 |                                      |   | 29                         |                                      |                                 |                                      |   |                                      |
| FX   | 212                             | 71                         | 109                                  | 21                         | 74                              | 72                                   | 94  | 106                        | 69                                   | 513                             | 516                                  | 66  | 105                                  |
| ML   | 848                             | 2392                       | 3797                                 | 3808                       | 15058                           | 5436                                 | 2171                                      | 3005                       | 550                                  | 13087                           | 7608                                 | 3858                                      | 8403                                 |
| MO   |                                 |                            |                                      |                            |                                 |                                      |   |                            |                                      | 9                               | 10                                   |   |                                      |
| MS   |                                 |                            | 104                                  |                            | 6                               |                                      |   |                            |                                      |                                 |                                      | 528                                       |                                      |
| FBFX | 51                              | 41                         | 52                                   | 23                         | 132                             | 29                                   | 52  | 131                        | 41                                   | 94                              | 144                                  | 60  | 35                                   |
| MA   |                                 |                            | 93                                   |                            |                                 |                                      |   |                            |                                      |                                 |                                      |   | 56                                   |
| 1    | 5                               | 4                          | 1                                    | 1                          | 4                               |                                      | 2   |                            | 12                                   | 6                               | 2                                    |   |                                      |
| 2    | 330                             | 1109                       | 7863                                 | 114                        | 5925                            | 1458                                 | 155                                       | 3641                       | 25                                   | 78                              | 12023                                | 13326                                     | 388                                  |
| 3    |                                 |                            |                                      |                            |                                 |                                      |   |                            |                                      |                                 |                                      | 14  |                                      |
| 6    |                                 |                            |                                      |                            |                                 | 1                                    |   |                            |                                      |                                 |                                      |   |                                      |

ALLOCATION

144-146 MHz  
AMATEUR 510  
AMATEUR-SATELLITE

EXISTING USAGE POLICY/RULES

There are some 23,000 licensed radio amateurs in Canada. Radio Amateur licensees, by virtue of the authorization given them operate on various frequencies within bands allocated to the service, employing different modes of emission.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| AT              | 4148    | 3732    | 9050    | 4158   | 2530     |
| AT*             | 7       |         | 11      |        |          |
| FX              | 1       |         |         | 1      |          |
| MA              | 1       |         |         |        |          |
| OD              | 5       |         |         |        | 5        |
| FBFX            | 9       |         |         |        |          |
| 1               | 1       |         |         |        |          |
| 2               |         |         | 1       |        |          |

AT\* Denotes Amateur Repeater

ALLOCATION

146-148 MHz  
AMATEUR

EXISTING USAGE POLICY/RULES

There are some 23,000 licensed radio amateurs in Canada. Radio Amateur licensees, by virtue of the authorization given them operate on various frequencies within bands allocated to the service, employing different modes of emission.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| AT              | 4148    | 3732    | 9050    | 4158   | 2530     |
| AT*             | 55      | 98      | 122     | 115    | 55       |
| AX              | 6       |         |         |        |          |
| FX              |         |         |         | 2      |          |
| 1               | 4       |         | 1       | 1      |          |
| FB              | 9       |         |         |        |          |
| ML              | 22      |         |         |        |          |
| OD              | 6       |         |         |        | 6        |
| FBFX            | 40      |         |         |        |          |

AT\* Denotes Amateur Repeater



ALLOCATION

148-149.9 MHz  
FIXED  
LAND MOBILE

FN 608

EXISTING USAGE POLICY/RULES

International FN 608 provides for operation in this band of the Space Operation Service (Earth-to-space) subject to certain conditions. As in the 138-144 MHz band, this spectrum in which frequencies are assigned on the basis of established national plans, is heavily utilized by the fixed and land mobile services with significant occupancy by provincial government radio systems.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| AL              |         |         | 1       |        |          |
| EX              | 16      | 17      | 5       | 15     | 1        |
| FA              |         | 16      | 3       | 3      |          |
| FB              | 698     | 686     | 1188    | 862    | 214      |
| FL              |         |         | 7       | 1      |          |
| FR              |         |         | 1       |        |          |
| FX              | 943     | 629     | 1422    | 831    | 290      |
| MA              | 1       | 17      | 3       | 2      |          |
| ML              | 15277   | 4952    | 15552   | 6362   | 1820     |
| MO              | 8       | 10      | 2       | 1      | 1        |
| FBFX            | 62      | 15      | 254     | 94     | 2        |
| LR              |         |         |         | 1      |          |
| MS              | 370     |         |         | 2      | 1        |
| TC              |         |         |         | 2      |          |
| FC              | 3       |         |         |        | 1        |

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| OD              | 5       |         |         |        | 5        |
| PA              | 4       |         |         |        |          |
| TE              | 1       |         |         |        |          |
| MR              |         |         |         |        | 1        |
| 1               |         | 5       | 7       | 9      |          |
| 2               | 11974   | 3083    | 8413    | 1055   | 2683     |
| 3               | 26      |         |         | 5      | 12       |
| 6               |         | 4       |         |        |          |

Comment

In spite of the fact that both the fixed and land mobile services are allocated on a primary co-equal basis, it appears ill-advised to continue to licence fixed service links in what is usually regarded as prime mobile spectrum. If fixed service assignments are warranted, then, at the very least, a more specterally efficient mode of operation, rather than 30 kHz FM channelling should be considered.

148 - 149.9 MHz

|      | H<br>A<br>L<br>I<br>F<br>A<br>X | Q<br>U<br>E<br>B<br>E<br>C | M<br>O<br>N<br>T<br>R<br>E<br>A<br>L | O<br>T<br>T<br>A<br>W<br>A | T<br>O<br>R<br>O<br>N<br>T<br>O | H<br>A<br>M<br>I<br>L<br>T<br>O<br>N | K<br>I<br>T<br>C<br>H<br>E<br>N<br>E<br>R | L<br>O<br>N<br>D<br>O<br>N | W<br>I<br>N<br>N<br>I<br>P<br>E<br>G | C<br>A<br>L<br>G<br>A<br>R<br>Y | E<br>D<br>M<br>O<br>N<br>T<br>O<br>N | V<br>A<br>N<br>C<br>O<br>U<br>V<br>E<br>R | V<br>I<br>C<br>T<br>O<br>R<br>I<br>A |
|------|---------------------------------|----------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------------|---|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|---|--------------------------------------|
| EX   |                                 |                            | 1                                    |                            | 1                               | 3                                    |   |                            |                                      |                                 |                                      |   |                                      |
| FA   |                                 |                            |                                      | 1                          |                                 |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| FB   | 47                              | 143                        | 284                                  | 139                        | 204                             | 181                                  | 95  | 224                        | 197                                  | 101                             | 121                                  | 135                                       | 99                                   |
| FL   |                                 |                            | 1                                    |                            |                                 |                                      |   | 6                          |                                      |                                 |                                      |   |                                      |
| FR   |                                 |                            | 1                                    |                            |                                 |                                      |   | 1                          |                                      |                                 |                                      |   |                                      |
| FX   | 114                             | 115                        | 167                                  | 118                        | 266                             | 174                                  | 139                                       | 139                        | 83                                   | 113                             | 210                                  | 119                                       | 169                                  |
| MA   |                                 |                            |                                      | 1                          |                                 |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| ML   | 952                             | 1270                       | 2492                                 | 1322                       | 6298                            | 1889                                 | 663                                       | 1475                       | 862                                  | 176                             | 516                                  | 8022                                      | 1629                                 |
| MO   |                                 |                            |                                      |                            |                                 |                                      |   |                            |                                      | 1                               |                                      |   |                                      |
| FBFX | 1                               | 3                          | 8                                    | 12                         | 24                              | 12                                   | 17  | 56                         | 3                                    | 1                               | 9                                    | 28  | 4                                    |
| LR   |                                 |                            |                                      |                            |                                 |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| MS   |                                 | 1                          |                                      |                            |                                 |                                      |   |                            |                                      |                                 |                                      | 314                                       | 416                                  |
| PA   |                                 |                            |                                      |                            |                                 |                                      |   |                            |                                      |                                 |                                      |   | 4                                    |
| 1    |                                 |                            | 6                                    | 2                          | 1                               | 3                                    |   |                            |                                      |                                 | 1                                    |   |                                      |
| 2    | 1664                            | 76                         | 450                                  | 268                        | 1867                            | 118                                  | 702                                       | 1096                       | 147                                  | 1017                            | 1555                                 | 1407                                      | 3245                                 |
| 3    |                                 | 3                          | 2                                    |                            |                                 |                                      |   |                            |                                      |                                 |                                      | 11  |                                      |
| 6    |                                 |                            |                                      |                            |                                 |                                      |   |                            |                                      | 4                               |                                      |   |                                      |

ALLOCATION

149.9-150.05 MHz  
RADIONAVIGATION-SATELLITE

FN 609

EXISTING USAGE POLICY/RULES

International FN 609 deals with reception of radionavigation-satellite emissions. This band is assigned to the radionavigation-satellite service on a world-wide basis. There are virtually no other Canadian uses of the band.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| 6               |         |         | 1       |        |          |
| FB              | 3       | 3       |         |        | 1        |
| ML              | 170     | 1       |         |        | 30       |
| EX              |         | 1       |         |        |          |
| FX              |         | 1       |         |        |          |
| 1               |         | 1       |         | 1      |          |
| 2               |         | 15      |         |        | 2        |

ALLOCATION

150.05-156.7625 MHz  
MOBILE  
Fixed

FN 613, 613A

EXISTING USAGE POLICY/RULES

International FN's 613 and 613A arise from the 1983 Mobile WARC and deal with the use of world-wide maritime mobile frequencies in this band. This band constitutes some of the most heavily congested spectrum in Canada with a mix of users from private to public sector licensees. Included also are nation-wide assignments to Canadian railways in a coordinated Canada/U.S. arrangement. Some major metropolitan areas have reached assignment saturation.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| EX              | 97      | 11      | 12      | 15     | 14       |
| FA              | 3       | 10      | 43      |        | 1        |
| FB              | 2257    | 5261    | 3237    | 1748   | 1743     |
| FC              | 313     | 35      | 177     | 180    | 2439     |
| FL              |         |         | 9       | 120    |          |
| FP              |         |         | 10      | 2      |          |
| FR              |         |         | 2       |        |          |
| FX              | 656     | 1875    | 943     | 487    | 1640     |
| MA              | 60      | 80      | 17      | 6      | 9        |
| ML              | 65141   | 53480   | 35221   | 136784 | 29293    |
| MO              | 3       | 125     | 49      | 1      | 3        |
| MS*             | 15824*  | 573     | 14429   | 4459   | 4615     |
| NL              |         |         | 3       |        |          |
| RA              |         |         | 1       |        |          |
| FBFX            | 14358   | 2499    | 537     | 185    | 373      |

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| TC              |         |         |         | 1      |          |
| MR              | 6       |         |         |        |          |
| OD              | 16      |         |         |        | 17       |
| RC              | 6       |         |         |        |          |
| 1               | 15      | 40      | 40      | 22     | 81       |
| 2               | 14358   | 288770  | 11269   | 8949   | 10351    |
| 3               | 298     | 193     | 46      | 73     | 89       |
| 4               |         |         | 1       |        | 1        |
| 6               | 82      |         | 40      | 16     | 19       |

MS\* denotes Canadian ship stations authorized to operate on world-wide Appendix 18 Maritime Mobile frequencies spanning the band 156.025-162.025 MHz. They are therefore repeated in the bands 156.7625-156.8375 MHz and 156.8375-174 MHz.

Comment

As this band is allocated to the fixed service on a secondary basis, there appears to be little reason to continue to protect existing fixed service assignments if doing so would deny mobile users new assignments.

150.05 - 156.7625 MHz

|      | H<br>A<br>L<br>I<br>F<br>A<br>X | Q<br>U<br>E<br>B<br>E<br>C | M<br>O<br>N<br>T<br>R<br>E<br>A<br>L | O<br>T<br>T<br>A<br>W<br>A | T<br>O<br>R<br>O<br>N<br>T<br>O | H<br>A<br>M<br>I<br>L<br>T<br>O<br>N | K<br>I<br>T<br>C<br>H<br>E<br>N<br>E<br>R | L<br>O<br>N<br>D<br>O<br>N | W<br>I<br>N<br>N<br>I<br>P<br>E<br>G | C<br>A<br>L<br>G<br>A<br>R<br>Y | E<br>D<br>M<br>O<br>N<br>T<br>O<br>N | V<br>A<br>N<br>C<br>O<br>U<br>V<br>E<br>R | V<br>I<br>C<br>T<br>O<br>R<br>I<br>A |
|------|---------------------------------|----------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------------|---|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|---|--------------------------------------|
| EX   | 6                               |                            | 3                                    |                            | 7                               | 1                                    |   | 1                          | 4                                    | 1                               | 2                                    | 15  | 17                                   |
| FA   |                                 |                            |                                      | 40                         |                                 |                                      |   |                            |                                      | 2                               |                                      |   |                                      |
| FB   | 796                             | 248                        | 615                                  | 390                        | 601                             | 354                                  | 410                                       | 591                        | 1007                                 | 1047                            | 1469                                 | 393                                       | 355                                  |
| FC   | 1153                            | 17                         | 64                                   | 7                          | 15                              | 36                                   | 11  | 35                         | 3                                    |                                 | 1                                    | 129                                       | 116                                  |
| FL   |                                 | 1                          | 109                                  |                            | 1                               |                                      |   | 2                          |                                      |                                 |                                      |   |                                      |
| FP   |                                 |                            | 2                                    |                            |                                 |                                      |   | 4                          |                                      |                                 |                                      |   |                                      |
| FR   |                                 |                            |                                      |                            |                                 | 1                                    |   | 9                          |                                      |                                 |                                      |   |                                      |
| FX   | 1173                            | 53                         | 40                                   | 94                         | 139                             | 48                                   | 92  | 39                         | 372                                  | 378                             | 594                                  | 81  | 53                                   |
| MA   |                                 |                            | 44                                   | 8                          |                                 |                                      |   |                            | 2                                    | 19                              | 10                                   | 2   | 52                                   |
| ML   | 15605                           | 9820                       | 71929                                | 11123                      | 18326                           | 2243                                 | 2320                                      | 2664                       | 15308                                | 12094                           | 9799                                 | 4541                                      | 6458                                 |
| MO   |                                 |                            |                                      |                            | 3                               |                                      |   |                            |                                      |                                 | 3                                    |   | 1                                    |
| NL   |                                 |                            |                                      |                            | 3                               |                                      |   |                            |                                      |                                 |                                      |   | 56                                   |
| RA   |                                 |                            |                                      | 1                          |                                 |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| FBFX | 144                             | 42                         | 6                                    | 33                         | 72                              | 48                                   | 76  | 66                         | 78                                   | 576                             | 794                                  | 66  | 108                                  |
| 1    | 199                             | 1                          | 5                                    | 7                          | 10                              | 43                                   | 4   | 15                         | 4                                    |                                 | 6                                    |   |                                      |
| 2    | 3060                            | 1114                       | 2625                                 | 2615                       | 3629                            | 930                                  | 728                                       | 1111                       | 1039                                 | 4345                            | 14310                                | 1651                                      | 1872                                 |
| 3    | 18                              |                            | 51                                   | 3                          | 14                              |                                      |   | 5                          | 106                                  |                                 | 29                                   | 164                                       | 93                                   |
| 4    | 1                               |                            |                                      |                            |                                 |                                      |   |                            |                                      |                                 |                                      | 1   |                                      |
| 6    |                                 |                            | 3                                    | 36                         | 2                               | 9                                    | 2   |                            |                                      | 8                               | 75                                   | 21  | 42                                   |

ALLOCATION

156.7625-156.8375 MHz  
 MARITIME MOBILE (distress and calling)

FN 501, 613, 613A

EXISTING USAGE POLICY/RULES

This band is set aside world-wide for maritime mobile distress and calling purposes for ships of all nations. As a result other uses are authorized on a limited geographical basis and with extreme caution.

International FN's 501, 613 and 613A deal with the use of the maritime international distress, safety and calling frequency, including the new designation of Channel 70 as a digital selective calling frequency for distress and safety.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FA              |         |         | 1       |        |          |
| FB              | 16      | 17      | 5       | 15     | 1        |
| FC              |         | 16      | 3       | 3      |          |
| FL              | 698     | 686     | 1188    | 862    | 214      |
| FP              |         |         | 7       | 1      |          |
| FX              |         |         | 1       |        |          |
| MA              | 943     | 629     | 1422    | 831    | 290      |
| ML              | 1       | 17      | 3       | 2      |          |
| NL              | 15277   | 4952    | 15552   | 6362   | 1820     |
| MO              |         | 4       |         |        |          |
| EX              |         |         |         | 1      |          |
| MS*             | 15824   | 573     | 14429   | 4459   | 4615     |
| FBFX            |         |         |         |        |          |

MS\* denotes Canadian ship stations authorized to operate on world-wide Appendix 18 Maritime Mobile frequencies spanning the band 156.025-162.025 MHz. They are therefore repeated in the band 150.05-156.7625 MHz and 156.8375-174 MHz.



| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| 1               | 8       | 10      | 2       | 1      | 1        |
| 2               | 62      | 15      | 254     | 94     | 2        |
| 3               |         | 5       | 7       | 9      |          |
| 4               | 11974   | 3083    | 8413    | 1055   | 2683     |
| 6               | 26      |         |         | 5      | 12       |



ALLOCATION

156.8375-174 MHz  
MOBILE  
Fixed

FN 613

EXISTING USAGE POLICY/RULES

International FN 613 deals with the use of the maritime international distress, safety and calling frequency.

A companion band to 150.05-156.7625 MHz this spectrum is extremely congested in the 80 mile corridor paralleling the Canada/U.S. border. Some major metropolitan areas have reached assignment saturation. The band contains a mix of users with assignments between 172-174 MHz somewhat inhibited because of the potential for interference to TV Channel 7.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| EX              | 97      |         | 9       | 14     | 5        |
| FA              |         | 20      | 7       |        | 6        |
| FB              | 5444    | 16165   | 8127    | 4365   | 2813     |
| FC              | 286     | 15      | 201     | 141    | 245      |
| FL              |         |         | 7       | 5      |          |
| FX              | 4184    | 7039    | 3703    | 2788   | 2218     |
| MA              | 506     | 78      | 10      | 17     | 32       |
| ML              | 114248  | 154496  | 70162   | 45578  | 19756    |
| MO              | 34      | 168     | 84      | 5      | 30       |
| MS*             | 15824   | 573     | 14429   | 4459   | 4615     |
| NL              | 1       | 1       | 1       | 1      |          |
| PA              |         |         | 4       |        |          |
| FBFX            | 834     | 1762    | 900     | 681    | 349      |

MS\* denotes Canadian ship stations authorized to operate on world-wide Appendix 18 Maritime Mobile frequencies spanning the band 156.025-162.025 MHz. They are therefore repeated in the band 150.05-156.7625 MHz and 156.7624-156.8375 MHz

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FP              |         |         |         | 2      | 1        |
| LR              |         |         |         | 1      | 19       |
| TC              |         |         |         | 3      |          |
| OD              | 46      |         |         |        | 45       |
| SM              | 2       |         |         |        |          |
| 1               | 15      | 125     | 85      | 26     | 14       |
| 2               | 64296   | 63270   | 59443   | 61843  | 24899    |
| 3               | 363     | 224     | 50      | 86     | 199      |
| 4               |         |         | 2       | 2      |          |
| 5               |         |         | 11      |        |          |
| 6               | 117     | 230     |         | 22     | 15       |

156.8375 - 174 MHz

|      | H<br>A<br>L<br>I<br>F<br>A<br>X | Q<br>U<br>E<br>B<br>E<br>C | M<br>O<br>N<br>T<br>R<br>E<br>A<br>L | O<br>T<br>T<br>A<br>W<br>A | T<br>O<br>R<br>O<br>N<br>T<br>O | H<br>A<br>M<br>I<br>L<br>T<br>O<br>N | K<br>I<br>T<br>C<br>H<br>E<br>N<br>E<br>R | L<br>O<br>N<br>D<br>O<br>N | W<br>I<br>N<br>N<br>I<br>P<br>E<br>G | C<br>A<br>L<br>G<br>A<br>R<br>Y | E<br>D<br>M<br>O<br>N<br>T<br>O<br>N | V<br>A<br>N<br>C<br>O<br>U<br>V<br>E<br>R | V<br>I<br>C<br>T<br>O<br>R<br>I<br>A |
|------|---------------------------------|----------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------------|---|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|---|--------------------------------------|
| EX   | 5                               |                            | 1                                    |                            | 1                               | 6                                    | 5   |                            |                                      |                                 |                                      | 57  | 24                                   |
| FA   |                                 |                            |                                      | 5                          |                                 |                                      |   |                            | 7                                    |                                 | 1                                    |   | 2                                    |
| FB   | 910                             | 528                        | 1451                                 | 898                        | 1352                            | 809                                  | 1128                                      | 1732                       | 3533                                 | 2497                            | 3349                                 | 1078                                      | 121                                  |
| FC   | 93                              | 14                         | 29                                   | 14                         | 6                               | 19                                   | 20  | 19                         | 5                                    |                                 |                                      | 95  | 122                                  |
| FL   |                                 |                            | 4                                    | 2                          |                                 |                                      |   | 5                          | 1                                    |                                 |                                      |   |                                      |
| FX   | 650                             | 350                        | 356                                  | 435                        | 472                             | 230                                  | 407                                       | 419                        | 704                                  | 1343                            | 2365                                 | 528                                       | 438                                  |
| MA   |                                 |                            |                                      | 5                          |                                 | 1                                    |   |                            | 91                                   | 55                              | 2                                    | 25  | 236                                  |
| ML   | 4607                            | 4600                       | 22524                                | 8609                       | 29680                           | 3838                                 | 6028                                      | 8885                       | 36899                                | 33866                           | 36670                                | 21031                                     | 953                                  |
| MO   | 6                               | 2                          |                                      |                            |                                 |                                      |   |                            | 4                                    |                                 | 156                                  |   | 3                                    |
| NL   |                                 |                            | 1                                    |                            | 1                               |                                      |   |                            |                                      |                                 |                                      |   | 1                                    |
| PA   |                                 |                            |                                      |                            | 4                               |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| FBFX | 113                             | 63                         | 83                                   | 78                         | 102                             | 52                                   | 114                                       | 103                        | 457                                  | 261                             | 506                                  | 87  | 82                                   |
| FP   |                                 |                            | 2                                    |                            |                                 |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| SM   |                                 |                            |                                      |                            |                                 |                                      |   |                            |                                      |                                 |                                      | 1   | 1                                    |
| 1    | 19                              | 6                          |                                      | 2                          | 67                              | 4                                    |   | 10                         | 14                                   | 1                               | 18                                   | 1   |                                      |
| 2    | 6356                            | 7703                       | 24697                                | 7528                       | 20965                           | 3558                                 | 2802                                      | 5750                       | 4308                                 | 14432                           | 20599                                | 16285                                     | 10454                                |
| 3    | 113                             | 9                          | 50                                   | 3                          | 4                               | 8                                    | 3   | 8                          | 71                                   |                                 | 13                                   | 213                                       | 79                                   |
| 4    |                                 |                            |                                      | 1                          | 1                               |                                      |   |                            |                                      |                                 |                                      | 1   |                                      |
| 5    |                                 |                            |                                      |                            |                                 |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| 6    | 7                               | 16                         | 7                                    | 16                         | 6                               | 7                                    | 5   |                            |                                      | 8                               | 51                                   | 27  | 15                                   |

ALLOCATION

174-216 MHz

BROADCASTING

See broadcasting information contained at band  
54-72 MHz.

ALLOCATION

216-220 MHz  
FIXED  
MARITIME MOBILE

EXISTING USAGE POLICY/RULES

Fixed system radio linking is permitted in areas at least 170 km from navigable waterways where the Canadian Coast Guard may eventually elect to establish maritime mobile services in this band. Some separation between fixed assignments and TV Channel 13 is also required to protect TV reception. Additionally, adjacent allocations are an inhibiting consideration in frequency assignment procedures.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| 2               | NIL     | 2       | 3       | 1      | NIL      |
| ML              |         |         |         | 2      | 6        |
| EX              |         | 17      |         |        |          |
| FB              |         | 1       |         |        |          |
| FX              |         | 2       |         |        |          |

Comment

At the 1987 World Administrative Radio Conference for Mobile Services, Canada will propose to add a land mobile allocation to this band by means of a footnote in order to provide for additional mobile spectrum. Prior to any decision to implement land mobile operations on a wide scale basis in this band, a public consultation will be held to assess the needs of the land mobile service vis-a-vis those of the maritime mobile service. Comments on the future use of the three services (i.e. Fixed, Maritime Mobile and Land Mobile) likely to share this band are invited.

ALLOCATION

220-225 MHz  
AMATEUR

EXISTING USAGE POLICY/RULES

There are some 23,000 licensed radio amateurs in Canada. Radio amateur licensees, by virtue of the authorization given them operate on various frequencies within bands allocated to the service, employing different modes of emission.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| AT              | 4148    | 3732    | 9050    | 4158   | 2530     |
| AT*             | 3       | 1       | 14      | 1      |          |
| BT              |         |         | 1       |        |          |
| FA              |         |         | 2       |        |          |
| FX              | 1       | 1       |         |        |          |
| FBFX            | 2       |         |         |        |          |
| 6               |         |         | 1       |        |          |

AT\* denotes Amateur Repeater



## ALLOCATION

225-235 MHz FIXED, MOBILE C5

235-328.6 MHz FIXED, MOBILE 501,592,642,C5,C7,C8

The bands 225-235 MHz, 235-328.6 MHz and 335.4-399.9 MHz are subject to Canadian Footnote C5 designating them exclusively for the Government of Canada. Similar to its use in other NATO member countries, this range of spectrum is used in Canada for National Defence purposes. The use is not presented in detail in this review.

In this range of spectrum the fixed and mobile and satellite services are used almost exclusively by the Department of National Defence, by the land, sea and air arms. The band use can be described as dynamic even though it is congested, since changes in frequency assignment usage are much easier to make than in the civil arena. The band is common to US, and other North Atlantic Treaty Organization (NATO) countries and it is essential to maintain this range of spectrum restricted to Government of Canada use to allow for ease of inter-operability of equipment used by Canadian forces and those of our allies while in training exercises here. While there are some very low power civil operations in various portions of this band today and certain others could be considered on a case by case basis, the treaty commitment to provide for inter-operability, of NATO guest forces in Canada and reciprocally of our forces in other NATO countries would seem to mitigate against any major changes in use of this range of spectrum at this time.

International FN 501,592 and 642 deal with the designation of 243 MHz as a frequency to be used during search and rescue operations and other safety related functions. Canadian FN C7 deals with use of segments of the band for mobile-satellite purposes. FN C8 offers protection to radio astronomy operations in the band 322-328.6 MHz to the extent possible.

ALLOCATION

328.6-335.4 MHz  
AERONAUTICAL RADIONAVIGATION

FN 645

EXISTING USAGE POLICY/RULES

This band is allocated to the aeronautical radionavigation service on a world-wide basis and is used for Instrument Landing Systems (glide paths) at airports around the world in accordance with an international treaty and as stipulated by International FN 645.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| AL              | 19      | 32      | 26      | 16     | 22       |
| FA              | 2       |         | 1       |        | 10       |
| FX              |         |         | 1       |        |          |
| LR              | 3       |         | 1       | 2      |          |
| RC              |         |         | 1       |        |          |
| 1               | 3       | 1       | 1       | 3      | 6        |
| 6               |         |         | 1       |        |          |
| RD              | 1       |         |         |        |          |
| 2               | 1       | 1       |         |        |          |

Comment

The worldwide use of this band by aeronautical radio navigation would appear to preclude its use by other services.

ALLOCATION

335.4 - 339.9 MHz FIXED, MOBILE C5,C7

See band 225-235 MHz.

ALLOCATION

399.9-400.05 MHz  
RADIONAVIGATION-SATELLITE

FN 609

EXISTING USAGE POLICY/RULES

Allocation of this band to the radionavigation-satellite service is on a worldwide basis. International FN 609 deals with the reception of radionavigation-satellite emissions.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
|                 | NIL     | NIL     | NIL     | NIL    | NIL      |
|                 |         |         |         |        |          |
|                 |         |         |         |        |          |

ALLOCATION

400.05-400.15 MHz  
STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz)

FN 646

EXISTING USAGE POLICY/RULES

This band is allocated to the standard frequency and time-signal satellite band on a worldwide basis. International FN 646 establishes deviation parameters for emissions.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
|                 | NIL     | NIL     | NIL     | NIL    | NIL      |
|                 |         |         |         |        |          |
|                 |         |         |         |        |          |

ALLOCATION

400.15-401 MHz  
METEROROLOGICAL AIDS  
METEROROLOGICAL-SATELLITE (space-to-Earth)  
SPACE RESEARCH (space-to-Earth)  
SPACE OPERATIONS (space-to-Earth)

EXISTING USAGE POLICY/RULES

The above are worldwide service allocations for this band with Canadian operations in the meteorological-satellite service and fixed-satellite service.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FB              |         |         | 1       | 2      |          |
| TC              |         |         | 23      |        |          |
| TM              | 36      | 182     | 12      | 11     | 18       |
| SM              |         | 11      |         |        |          |

ALLOCATION

401-402 MHz  
METEOROLOGICAL AIDS  
SPACE OPERATION (space-to-Earth)  
Earth Exploration-Satellite (Earth-to-space)  
Fixed  
Mobile except aeronautical mobile

EXISTING USAGE POLICY/RULES

Canadian usage of this band is primarily by earth stations operating in the meteorological satellite service and including government operations for remote data collection.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FB              |         |         | 1       | 2      |          |
| FX              |         |         | 1       | 2      | 6        |
| TC              | 41      | 59      | 47      | 3      | 15       |
| TM              | 92      | 12      | 15      | 63     | 30       |
| RC              |         |         |         | 2      |          |
| TE              |         |         |         | 3      | 1        |
| TR              | 14      |         |         |        |          |
| EX              |         | 2       |         |        | 2        |
| 1               |         | 1       |         |        |          |
| 5               |         | 15      |         |        |          |
| 2               |         |         |         |        | 8        |

ALLOCATION

402-403 MHz  
METEOROLOGICAL AIDS  
EARTH EXPLORATION SATELLITE (Earth-to-space)  
Fixed  
Mobile except aeronautical mobile

EXISTING USAGE POLICY/RULES

Meteorological systems such as weather balloons are employed in this band.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| EX              |         | 2       |         |        |          |
| FX              |         | 1       |         |        | 2        |
| MO              |         | 1       |         |        |          |
| SM              |         | 3       |         |        |          |



ALLOCATION

403-406 MHz  
METEOROLOGICAL AIDS  
MOBILE SATELLITE except aeronautical mobile satellite  
(Earth-to-space) C9  
Fixed  
Mobile except aeronautical mobile

EXISTING USAGE POLICY/RULES

Spectrum in this band is also available for in-hospital telemetry on a non-interference basis to the indicated primary services.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FB              |         |         |         | 8      |          |
| FX              | 6       | 19      |         |        |          |
| SM              | 2       | 8       |         |        |          |
| EX              |         | 2       |         |        |          |
| LR              |         | 8       |         |        |          |

ALLOCATION

406-406.1 MHz  
MOBILE-SATELLITE (Earth-to-space)

FN 649 (Mob-83)

EXISTING USAGE POLICY/RULES

International FN 649 limits the use of this band to low power satellite emergency position-indicating radio beacons (EPIRB's) with such beacons operating in conjunction with the COSPAS/SARSAT satellite system in which Canada participates.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
|                 | NIL     | NIL     | NIL     | NIL    | NIL      |
|                 |         |         |         |        |          |
|                 |         |         |         |        |          |

ALLOCATION

406.1-410 MHz  
RADIO ASTRONOMY  
MOBILE except aeronautical mobile  
MOBILE-SATELLITE except aeronautical mobile-satellite  
(Earth-to-space) C9  
Fixed

FN 650

EXISTING USAGE POLICY/RULES

International FN 650 specifies that administrations afford whatever interference protection possible to radioastronomy operations in the band. Also included in this band are transmit frequencies at 409-410 MHz previously set aside for General Land Mobile Radio Service (GLMRS) purposes of which the Alberta government Telephones "Aurora" system is the best known. Large portions of the band are also used by municipal government safety-oriented services in a simplex or duplex configuration.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FB              | 26      | 13      | 16      | 59     | 23       |
| FX              | 6       | 157     | 4       | 60     | 23       |
| ML              | 566     | 5361    | 1879    | 537    | 1016     |
| FBFX            | 2       | 6       | 1       |        |          |
| FL              |         |         |         | 1      |          |
| 1               |         |         | 3       |        |          |
| 2               | 1       | 190     |         |        |          |

406.1 - 410 MHz

|      | H<br>A<br>L<br>I<br>F<br>A<br>X | Q<br>U<br>E<br>B<br>E<br>C | M<br>O<br>N<br>T<br>R<br>E<br>A<br>L | O<br>T<br>T<br>A<br>W<br>A | T<br>O<br>R<br>O<br>N<br>T<br>O | H<br>A<br>M<br>I<br>L<br>T<br>O<br>N | K<br>I<br>T<br>C<br>H<br>E<br>N<br>E<br>R | L<br>O<br>N<br>D<br>O<br>N | W<br>I<br>N<br>N<br>I<br>P<br>E<br>G | C<br>A<br>L<br>G<br>A<br>R<br>Y | E<br>D<br>M<br>O<br>N<br>T<br>O<br>N | V<br>A<br>N<br>C<br>O<br>U<br>V<br>E<br>R | V<br>I<br>C<br>T<br>O<br>R<br>I<br>A |
|------|---------------------------------|----------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------------|---|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|---|--------------------------------------|
| FB   |                                 |                            | 51                                   |                            | 12                              |                                      |   | 5                          | 2                                    |                                 | 2                                    | 20  | 4                                    |
| FX   | 1                               |                            | 38                                   |                            |                                 | 2                                    |   |                            |                                      | 55                              | 59                                   |   |                                      |
| ML   | 2                               |                            | 165                                  | 3                          | 2346                            | 24                                   | 20  | 73                         | 370                                  | 1909                            | 2096                                 | 523                                       | 20                                   |
| FBFX |                                 |                            |                                      |                            |                                 | 1                                    |   |                            |                                      |                                 | 1                                    | 2   |                                      |
| FL   |                                 |                            | 1                                    |                            |                                 |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| 1    |                                 |                            |                                      |                            | 3                               |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| 2    |                                 |                            |                                      |                            |                                 |                                      |   |                            |                                      | 27                              | 138                                  |   |                                      |

ALLOCATION

410-414 MHz  
MOBILE except aeronautical mobile  
Fixed

EXISTING USAGE POLICY/RULES

Frequencies in this band are assigned in accordance with a 25 kHz spacing channelling plan, utilizing duplex assignments in a pairing with 415-419 MHz. Typical users include provincial high-capacity systems with some useage also by municipal systems.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| EX              |         | 2       | 1       |        |          |
| FB              | 59      | 289     | 378     | 366    | 77       |
| FX              | 97      | 187     | 117     | 128    | 94       |
| ML              | 320     | 5569    | 4607    | 5551   | 1491     |
| MO              |         |         | 10      |        |          |
| FBFX            | 21      | 220     | 192     | 136    | 187      |
| FR              |         | 1       |         |        |          |
| 1               |         |         | 7       | 6      |          |
| 2               | 34      | 3630    | 1260    | 228    | 36       |
| 6               |         |         | 1       |        |          |



ALLOCATION

414-415 MHz  
FIXED  
Mobile except aeronautical mobile

EXISTING USAGE POLICY/RULES

Frequencies in this band are assigned in accordance with a 25 kHz spacing channelling plan, employing point-to-point duplex links paired with 419-420 MHz. The need to protect the primary service precludes more extensive mobile use.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FB              | 2       | 2       | 8       |        | 6        |
| FC              |         |         | 1       |        |          |
| FX              | 594     | 709     | 680     | 391    | 195      |
| ML              |         |         | 59      | 2      | 6        |
| FBFX            | 3       |         | 19      | 2      | 1        |
| 1               |         | 1       | 1       |        |          |
| 2               |         |         | 113     |        |          |

Comment

There have been calls from some quarters for additional fixed service spectrum to meet current demand. While fixed service needs can be accommodated by non-radio alternatives and by radio in higher frequency bands, the mobile needs can currently only be accommodated in spectrum below 1 GHz. Comment is invited as to how fixed needs can be accommodated more spectrum efficiently so that such needs will better fit their existing allocations.

414 - 415 MHz

|      | H<br>A<br>L<br>I<br>F<br>A<br>X | Q<br>U<br>E<br>B<br>E<br>C | M<br>O<br>N<br>T<br>R<br>E<br>A<br>L | O<br>T<br>T<br>A<br>W<br>A | T<br>O<br>R<br>O<br>N<br>T<br>O | H<br>A<br>M<br>I<br>L<br>T<br>O<br>N | K<br>I<br>T<br>C<br>H<br>E<br>N<br>E<br>R | L<br>O<br>N<br>D<br>O<br>N | W<br>I<br>N<br>N<br>I<br>P<br>E<br>G | C<br>A<br>L<br>G<br>A<br>R<br>Y | E<br>D<br>M<br>O<br>N<br>T<br>O<br>N | V<br>A<br>N<br>C<br>O<br>U<br>V<br>E<br>R | V<br>I<br>C<br>T<br>O<br>R<br>I<br>A |
|------|---------------------------------|----------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------------|---|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|---|--------------------------------------|
| FB   | 6                               |                            |                                      |                            | 3                               |                                      | 1   | 2                          |                                      | 1                               | 1                                    |   | 2                                    |
| FC   |                                 |                            |                                      |                            |                                 | 1                                    |   |                            |                                      |                                 |                                      |   |                                      |
| FX   | 49                              | 48                         | 125                                  | 112                        | 149                             | 47                                   | 91  | 125                        | 39                                   | 116                             | 344                                  | 141                                       | 82                                   |
| ML   | 1                               | 2                          |                                      |                            |                                 |                                      |   | 15                         |                                      |                                 |                                      |   |                                      |
| FBFX | 1                               |                            | 1                                    | 1                          | 7                               |                                      | 1   |                            |                                      |                                 |                                      |   | 3                                    |
| 1    |                                 |                            |                                      |                            |                                 |                                      |   | 1                          |                                      |                                 | 1                                    |   |                                      |
| 2    |                                 |                            |                                      |                            |                                 |                                      |   | 2                          |                                      |                                 |                                      |   |                                      |



ALLOCATION

415-419 MHz  
MOBILE except aeronautical mobile  
Fixed

EXISTING USAGE POLICY/RULES

Frequencies in this band are assigned in accordance with a 25 kHz spacing channelling plan. The band is paired with 410-414 MHz with predominant use by provincial government high-capacity mobile systems.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| EX              |         | 2       | 1       |        |          |
| FB              | 8       | 171     | 105     | 171    | 23       |
| FC              |         |         | 1       |        |          |
| FX              | 131     | 653     | 582     | 500    | 428      |
| ML              | 1777    | 33173   | 17440   | 25352  | 11282    |
| FBFX            | 2       | 93      | 122     | 9      | 12       |
| MO              |         | 8       |         |        |          |
| FL              |         |         |         | 1      |          |
| FR              |         |         |         | 2      |          |
| 1               |         | 1       | 2       | 1      |          |
| 2               | 16      | 5899    | 4794    | 72     | 14       |

415 - 419 MHz

|      | H<br>A<br>L<br>I<br>F<br>A<br>X | Q<br>U<br>E<br>B<br>E<br>C | M<br>O<br>N<br>T<br>R<br>E<br>A<br>L | O<br>T<br>T<br>A<br>W<br>A | T<br>O<br>R<br>O<br>N<br>T<br>O | H<br>A<br>M<br>I<br>L<br>T<br>O<br>N | K<br>I<br>T<br>C<br>H<br>E<br>N<br>E<br>R | L<br>O<br>N<br>D<br>O<br>N | W<br>I<br>N<br>N<br>I<br>P<br>E<br>G | C<br>A<br>L<br>G<br>A<br>R<br>Y | E<br>D<br>M<br>O<br>N<br>T<br>O<br>N | V<br>A<br>N<br>C<br>O<br>U<br>V<br>E<br>R | V<br>I<br>C<br>T<br>O<br>R<br>I<br>A |
|------|---------------------------------|----------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------------|---|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|---|--------------------------------------|
| FB   | 17                              | 4                          | 129                                  | 7                          | 16                              | 13                                   | 30  | 22                         | 101                                  | 42                              | 13                                   | 8   |                                      |
| FX   | 30                              | 51                         | 476                                  | 142                        | 273                             | 74                                   | 18  | 29                         | 8                                    | 129                             | 434                                  | 86  | 10                                   |
| ML   | 401                             | 4086                       | 7817                                 | 5697                       | 9112                            | 1684                                 | 850                                       | 704                        | 2692                                 | 15433                           | 10948                                | 777                                       | 1                                    |
| FBFX | 1                               | 2                          | 6                                    | 3                          | 109                             | 2                                    | 2   | 2                          |                                      |                                 | 68                                   |   |                                      |
| MO   |                                 |                            |                                      |                            |                                 |                                      |   |                            |                                      |                                 | 8                                    |   |                                      |
| FL   |                                 |                            | 4                                    |                            |                                 |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| FR   |                                 |                            |                                      | 2                          |                                 |                                      |   |                            |                                      |                                 | 3                                    |   |                                      |
| 1    | 10                              | 1                          |                                      | 2                          |                                 |                                      |   |                            |                                      |                                 | 1                                    |   |                                      |
| 2    |                                 | 3                          | 55                                   | 151                        | 1448                            | 13                                   | 2636                                      | 244                        | 25                                   | 2370                            | 2267                                 | 16  |                                      |

ALLOCATION

419-420 MHz  
FIXED  
Mobile except aeronautical mobile

EXISTING USAGE POLICY/RULES

Frequencies in this band are assigned in accordance with a 25 kHz spacing channelling plan in a pairing arrangement with 414-415 MHz for point-to-point systems.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FB              |         | 9       | 10      |        | 4        |
| FC              |         |         | 2       |        |          |
| FX              | 606     | 873     | 654     | 365    | 161      |
| ML              |         |         | 76      | 29     | 4        |
| FBFX            |         |         | 3       | 2      | 4        |
| EX              |         | 3       |         |        |          |
| 1               |         |         |         | 1      |          |
| 2               |         |         | 65      |        |          |

419 - 420 MHz

|      | H<br>A<br>L<br>I<br>F<br>A<br>X | Q<br>U<br>E<br>B<br>E<br>C | M<br>O<br>N<br>T<br>R<br>E<br>A<br>L | O<br>T<br>T<br>A<br>W<br>A | T<br>O<br>R<br>O<br>N<br>T<br>O | H<br>A<br>M<br>I<br>L<br>T<br>O<br>N | K<br>I<br>T<br>C<br>H<br>E<br>N<br>E<br>R | L<br>O<br>N<br>D<br>O<br>N | W<br>I<br>N<br>N<br>I<br>P<br>E<br>G | C<br>A<br>L<br>G<br>A<br>R<br>Y | E<br>D<br>M<br>O<br>N<br>T<br>O<br>N | V<br>A<br>N<br>C<br>O<br>U<br>V<br>E<br>R | V<br>I<br>C<br>T<br>O<br>R<br>I<br>A |
|------|---------------------------------|----------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------------|---|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|---|--------------------------------------|
| FB   | 4                               |                            |                                      | 1                          | 5                               | 2                                    |   | 3                          |                                      | 4                               | 6                                    |   |                                      |
| FC   |                                 |                            |                                      |                            |                                 |                                      |   | 1                          |                                      |                                 |                                      |   |                                      |
| FX   | 30                              | 70                         | 100                                  | 130                        | 157                             | 53                                   | 29  | 102                        | 38                                   | 211                             | 338                                  | 151                                       | 69                                   |
| ML   | 401                             |                            |                                      |                            |                                 |                                      |   | 1                          |                                      |                                 |                                      |   |                                      |
| FBFX | 1                               | 2                          |                                      | 1                          |                                 |                                      |   | 2                          |                                      |                                 |                                      |   |                                      |
| EX   |                                 |                            |                                      |                            |                                 |                                      |   |                            |                                      | 3                               |                                      |   |                                      |
| 1    |                                 |                            |                                      |                            |                                 |                                      | 1   |                            |                                      |                                 |                                      |   |                                      |
| 2    | 1                               |                            |                                      |                            | 58                              |                                      |   | 2                          |                                      |                                 |                                      |   |                                      |

ALLOCATION

420-430 MHz  
MOBILE except aeronautical mobile  
Fixed

FN C10

EXISTING USAGE POLICY/RULES

Canadian FN C10 permits the operation of radiolocation stations on a case by case basis subject to non-interference where such operation cannot be accommodated in the band 430-450 MHz. Frequencies in this band are assigned in accordance with a 25 kHz spacing channelling plan and in accordance with a Canada/U.S. sharing agreement. Also included in this band between 420-421 MHz are base transmit frequencies used in conjunction with mobile transmit frequencies at 409-410 MHz for GLMRS operations. The entire 420-430 MHz band is subject to interference from U.S. radiolocation operations during periods of emergency. Trunked duplex mobile radio systems operations are also located in this band (see DOC document RP 003). Saturation has or will soon occur in the large metropolitan areas.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FB              | 69      | 350     | 1319    | 10     | 2        |
| FX              | 63      | 94      | 456     | 156    | 7        |
| MA              |         |         | 1       |        |          |
| ML              | 1740    | 131     | 27238   | 4630   | 4        |
| FBFX            | 91      | 617     | 302     | 76     |          |
| FL              |         |         |         | 1      |          |
| EX              |         | 10      |         |        |          |
| MO              |         | 2       |         |        |          |
| NL              |         | 17      |         |        |          |
| LR              |         |         |         |        | 3        |
| 1               |         | 1       | 4       |        |          |
| 2               |         |         | 17      | 43     |          |

420 - 430 MHz

|      | H<br>A<br>L<br>L<br>I<br>F<br>A<br>X | Q<br>U<br>E<br>B<br>E<br>C | M<br>O<br>N<br>T<br>R<br>E<br>A<br>L | O<br>T<br>T<br>A<br>W<br>A | T<br>O<br>R<br>O<br>N<br>T<br>O | H<br>A<br>M<br>I<br>L<br>T<br>O<br>N | K<br>I<br>T<br>C<br>H<br>E<br>N<br>E<br>R | L<br>O<br>N<br>D<br>O<br>N | W<br>I<br>N<br>N<br>I<br>P<br>E<br>G | C<br>A<br>L<br>G<br>A<br>R<br>Y | E<br>D<br>M<br>O<br>N<br>T<br>O<br>N | V<br>A<br>N<br>C<br>O<br>U<br>V<br>E<br>R | V<br>I<br>C<br>T<br>O<br>R<br>I<br>A |
|------|--------------------------------------|----------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------------|---|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|---|--------------------------------------|
| FB   | 1                                    | 1                          | 20                                   | 1013                       | 34                              | 38                                   | 27  | 144                        | 18                                   | 29                              | 310                                  | 60  |                                      |
| FX   | 7                                    |                            | 186                                  | 25                         | 268                             | 65                                   | 105                                       |                            |                                      | 9                               | 71                                   | 58  |                                      |
| ML   | 4                                    |                            | 4908                                 | 5223                       | 21119                           | 52                                   | 416                                       | 31                         |                                      | 42                              |                                      | 410                                       | 1                                    |
| FBFX |                                      | 14                         | 49                                   | 25                         | 140                             | 26                                   | 86  | 5                          | 13                                   | 240                             | 155                                  | 19  |                                      |
| FL   |                                      |                            | 1                                    |                            |                                 |                                      |   |                            |                                      |                                 |                                      |   |                                      |
| EX   |                                      |                            |                                      |                            |                                 |                                      |   |                            |                                      | 10                              |                                      |   |                                      |
| MO   |                                      |                            |                                      |                            |                                 |                                      |   |                            |                                      | 1                               | 1                                    |   |                                      |
| 1    |                                      |                            |                                      |                            |                                 |                                      | 3   |                            | 1                                    |                                 |                                      |   |                                      |
| 2    |                                      |                            | 48                                   |                            | 4                               | 13                                   |   |                            |                                      |                                 |                                      |   |                                      |

ALLOCATION

430-450 MHz  
RADIOLOCATION  
Amateur

FN 664, 668

EXISTING USAGE POLICY/RULES

International FN's 664 and 668 permit the operation of amateur-satellites and space research stations subject to certain conditions. Radiolocation activity is geographically dispersed but relatively heavy in those areas.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FB              | 2       |         |         | 1      | 8        |
| FL              |         |         |         | 6      |          |
| FX              | 3       | 13      |         | 2      |          |
| LR              |         | 3       |         | 4      | 10       |
| ML              |         | 4       |         | 4      | 12       |
| MS              |         | 1       |         | 2      |          |
| EX              | 1       | 1       |         |        |          |
| NL              | 2       | 17      |         |        |          |
| FBFX            | 8       |         |         |        |          |
| MR              |         |         |         |        | 2        |
| RM              |         |         |         |        | 1        |
| AT              |         |         |         |        |          |
| AT*             | 11      | 2       | 38      | 9      | 3        |
| 2               | 1       |         |         | 7      |          |
| 3               |         | 1       |         |        |          |
| 6               |         |         | 1       |        |          |

AT\* denotes Amateur Repeater

ALLOCATION

450-470 MHz  
MOBILE 669 670  
Fixed

FN 668

EXISTING USAGE POLICY/RULES

International FN's 669 and 670 assigned to the mobile service specify certain frequencies for maritime mobile on-board communications. FN 668 allows operation of the space research service on a non-interference basis. Existing operations in this band in support of broadcasting operations are subject to the provisions of DOC document SP 300.4. Remainder of users employ a duplex/simplex mix.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| AL              |         |         |         | 1      |          |
| AM              |         | 1       |         |        |          |
| CA              |         |         | 2       |        |          |
| EX              | 13      | 15      | 11      | 19     | 3        |
| FA              |         | 1       | 19      | 4      |          |
| FB              | 742     | 1827    | 1065    | 939    | 392      |
| FC              | 4       |         | 1       |        | 1        |
| FL              |         |         | 4       |        |          |
| FR              |         | 8       | 3       |        |          |
| FX              | 1517    | 2067    | 2181    | 1215   | 506      |
| MA              | 8       | 56      | 21      | 30     |          |
| ML              | 17111   | 46212   | 35023   | 16228  | 4337     |
| MO              | 4       | 22      | 35      |        | 1        |
| MS              | 2       |         | 13      | 6      | 8        |
| TC              |         |         | 4       |        |          |



| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| FBFX            | 214     | 340     | 657     | 417    | 63       |
| TM              |         | 3       |         |        | 1        |
| 1               | 7       | 26      | 37      | 7      | 1        |
| 2               | 6542    | 14165   | 14148   | 8635   | 2361     |
| 3               |         | 4       | 9       | 6      | 2        |
| 6               |         | 50      | 9       | 4      | 2        |

450 - 470 MHz

|      | H<br>A<br>L<br>L<br>I<br>F<br>A<br>X | Q<br>U<br>E<br>B<br>E<br>C | M<br>O<br>N<br>T<br>R<br>E<br>A<br>L | O<br>T<br>T<br>A<br>W<br>A | T<br>O<br>R<br>O<br>N<br>T<br>O | H<br>A<br>M<br>I<br>L<br>T<br>O<br>N | K<br>I<br>T<br>C<br>H<br>E<br>N<br>E<br>R | L<br>O<br>N<br>D<br>O<br>N | W<br>I<br>N<br>N<br>I<br>P<br>E<br>G | C<br>A<br>L<br>G<br>A<br>R<br>Y | E<br>D<br>M<br>O<br>N<br>T<br>O<br>N | V<br>A<br>N<br>C<br>O<br>U<br>V<br>E<br>R | V<br>I<br>C<br>T<br>O<br>R<br>I<br>A |
|------|--------------------------------------|----------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------------|---|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|---|--------------------------------------|
| EX   | 3                                    |                            | 5                                    | 2                          | 5                               | 2                                    | 1   | 2                          | 4                                    | 6                               | 4                                    | 6   |                                      |
| FA   |                                      | 2                          | 2                                    | 8                          | 10                              |                                      |   |                            | 1                                    | 1                               |                                      |   |                                      |
| FB   | 228                                  | 102                        | 632                                  | 105                        | 471                             | 211                                  | 40  | 155                        | 418                                  | 415                             | 622                                  | 453                                       | 84                                   |
| FC   |                                      |                            |                                      | 1                          |                                 |                                      |   |                            |                                      |                                 |                                      | 4   |                                      |
| FL   |                                      |                            | 8                                    |                            |                                 | 2                                    | 1   | 1                          |                                      |                                 |                                      |   |                                      |
| FR   |                                      |                            |                                      |                            |                                 |                                      |   | 2                          |                                      |                                 |                                      |   |                                      |
| FX   | 188                                  | 105                        | 644                                  | 531                        | 893                             | 385                                  | 99  | 189                        | 187                                  | 516                             | 688                                  | 557                                       | 212                                  |
| MA   |                                      | 4                          | 28                                   |                            | 1                               |                                      |   |                            | 2                                    | 24                              | 2                                    | 2   | 51                                   |
| ML   | 1995                                 | 1895                       | 11211                                | 4015                       | 26171                           | 2622                                 | 571                                       | 2516                       | 3313                                 | 17034                           | 21225                                | 6524                                      | 897                                  |
| MO   |                                      |                            |                                      |                            | 1                               |                                      |   |                            | 18                                   |                                 | 2                                    |   | 2                                    |
| MS   |                                      | 1                          | 3                                    |                            |                                 |                                      |   |                            |                                      |                                 |                                      | 1   |                                      |
| TC   |                                      |                            |                                      |                            |                                 |                                      | 4   |                            |                                      |                                 |                                      |   |                                      |
| FBFX | 22                                   | 46                         | 251                                  | 140                        | 314                             | 97                                   | 28  | 51                         | 23                                   | 99                              | 127                                  | 110                                       | 36                                   |
| 1    | 8                                    | 2                          | 5                                    | 1                          | 32                              | 5                                    |   | 2                          | 3                                    |                                 | 13                                   | 4   |                                      |
| 2    | 1464                                 | 502                        | 6409                                 | 1161                       | 6094                            | 3358                                 | 209                                       | 1978                       | 644                                  | 2488                            | 9949                                 | 3696                                      | 826                                  |
| 3    |                                      | 2                          | 4                                    |                            | 4                               | 2                                    |   |                            |                                      |                                 |                                      | 8   |                                      |
| 6    |                                      |                            | 4                                    |                            | 6                               |                                      |   |                            | 1                                    | 40                              | 7                                    | 4   |                                      |

## ALLOCATION

470-608 MHz ] Broadcasting (UHF)  
614-806 MHz ] - Television

## EXISTING USAGE POLICY/RULES

The present UHF television broadcasting band is divided into 6 MHz channels beginning with channel 14 (starting at 470 MHz) and ending with channel 69 (upper limit at 806 MHz). Throughout Canada, broadcasting assignments are made taking into account distance separations, class of station, interference protection requirements and also bilateral coordination requirements as set out in the 1952 Canada/U.S.A. Television Agreement (including the Working Arrangement as amended).

In 1979, the UHF spectrum available for broadcasting purposes was reduced to the band 470 to 806 MHz in the Government's "Spectrum Allocation Policy for the Band 406 to 960 MHz" based on the reallocation of channels 70 to 83 from broadcasting to mobile usage in Canada. This was done to meet increasing demands for spectrum by mobile use and to provide for the development of new innovative and spectrum efficient mobile systems.

In spite of this reduction in the UHF broadcast band in the late 1970's, the UHF-TV band continues to be considered by some as a prime candidate for potential new non-broadcast type applications because of the inefficiency of UHF television receivers in using the available spectrum. (The assignment of one UHF TV channel renders up to 18 other UHF TV channels unuseable over various geographic areas in the proximity of the assignment. For domestic assignments and allotments, the number of unuseable channels is reduced to 14.) This poor receiver design and inefficiency also results in "open spaces" (unused and unuseable spectrum) in a given area, due to these UHF "taboos". Receiver improvements could assist in improving the availability of channels for use but such spectrum efficiencies are not marketable improvements in that they provide no readily apparent improvements to picture or audio quality. While spectrum utilization improvements could be mandated by the Department, with the high level of off-shore manufacturing of these products, higher costs and perhaps lack of product meeting Canadian standards might result.

The use of UHF TV channels for broadcasting has increased dramatically since it first started fifteen years ago. Implementation is dependent on the demand by applicants for additional TV outlets and the licensing decisions taken by the CRTC based on a number of inputs including public hearings.

In heavily populated areas of Canada such as Southern Ontario, very few channels still are available in the UHF Allotment Plan. The demand for low power stations to rebroadcast CANCOM satellite signals as well as those of TV Ontario has increased the demand for channels in recent years in many rural communities.

CLASSES AND MAXIMUM PERMISSIBLE PARAMETERS - UHF

| <u>Class</u>          | <u>Maximum Effective<br/>Radiated Power<br/>(ERP)</u> | <u>Antenna Height Above<br/>Average Terrain<br/>(EHATT)</u> |
|-----------------------|---|---|
| A                     | 10 kW   | 100 metres  |
| B                     | 100 kW  | 150 metres  |
| C                     | 1000 kW   | 300 metres  |
| D (Super Power) up to | 5000 kW   | up to 600 metres  |
| LP                    | 500 Watts<br>Transmitter Power                        | Coverage Dependent  |
| VLP                   | 10 Watt<br>Transmitter Power                          | 30 metres   |

USAGE - TV (UHF) BROADCASTING

July 3, 1987

| REGION   | PROVINCE            | ASSIGNMENTS |    |    |   |     |     |       | ALLOTMENTS |    |    |   |       | PROPOSALS<br>(NON ALLOTTED CHANNELS) |   |    |   |     |     |       |
|----------|---------------------|-------------|----|----|---|-----|-----|-------|------------|----|----|---|-------|--------------------------------------|---|----|---|-----|-----|-------|
|          |                     | A           | B  | C  | D | LP  | VLP | TOTAL | A          | B  | C  | D | TOTAL | A                                    | B | C  | D | LP  | VLP | TOTAL |
| PACIFIC  | B.C.<br>Ch. 14-69   | 3           | 7  | 1  | 0 | 28  | 0   | 39    | 6          | 68 | 20 | 0 | 94    | 3                                    | 1 | 0  | 0 | 43  | 13  | 60    |
|          | Y.T.<br>Ch. 14-69   | 0           | 0  | 0  | 0 | 0   | 0   | 0     | 0          | 6  | 4  | 0 | 10    | 0                                    | 0 | 0  | 0 | 0   | 0   | 0     |
| CENTRAL  | ALTA.<br>Ch. 14-69  | 2           | 6  | 1  | 0 | 18  | 7   | 34    | 38         | 48 | 12 | 0 | 98    | 0                                    | 0 | 0  | 0 | 93  | 15  | 108   |
|          | SASK.<br>Ch. 14-69  | 2           | 8  | 0  | 0 | 18  | 0   | 28    | 22         | 44 | 13 | 0 | 79    | 0                                    | 0 | 0  | 0 | 11  | 2   | 10    |
|          | MAN.<br>Ch. 14-69   | 2           | 2  | 1  | 0 | 0   | 0   | 5     | 10         | 69 | 6  | 0 | 85    | 0                                    | 0 | 0  | 0 | 87  | 1   | 88    |
|          | N.W.T.<br>Ch. 14-69 | 0           | 0  | 0  | 0 | 0   | 0   | 0     | 0          | 0  | 1  | 0 | 1     | 0                                    | 0 | 0  | 0 | 0   | 0   | 0     |
| ONTARIO  | ONT.<br>Ch. 14-69   | 2           | 15 | 16 | 6 | 109 | 0   | 148   | 19         | 53 | 40 | 0 | 112   | 3                                    | 4 | 13 | 5 | 9   | 0   | 34    |
| QUEBEC   | QUE.<br>Ch. 14-69   | 7           | 18 | 9  | 7 | 5   | 0   | 46    | 25         | 84 | 25 | 0 | 134   | 8                                    | 2 | 1  | 1 | 1   | 0   | 12    |
| ATLANTIC | N.B.<br>Ch. 14-69   | 0           | 0  | 2  | 0 | 10  | 0   | 11    | 6          | 24 | 18 | 0 | 48    | 0                                    | 0 | 0  | 0 | 27  | 0   | 30    |
|          | N.S.<br>Ch. 14-69   | 0           | 5  | 1  | 0 | 21  | 0   | 27    | 10         | 24 | 12 | 0 | 46    | 0                                    | 0 | 0  | 0 | 129 | 0   | 130   |
|          | P.E.I.<br>Ch. 14-69 | 0           | 0  | 1  | 0 | 0   | 0   | 1     | 0          | 3  | 3  | 0 | 6     | 0                                    | 0 | 0  | 0 | 52  | 0   | 52    |
|          | NFLD.<br>Ch. 14-69  | 0           | 1  | 0  | 0 | 3   | 0   | 4     | 24         | 29 | 12 | 0 | 65    | 0                                    | 0 | 0  | 0 | 0   | 0   | 0     |

ALLOCATION

608-614 MHz  
RADIO ASTRONOMY  
Mobile-Satellite except aeronautical mobile-satellite  
(Earth-to-space)

EXISTING USAGE POLICY/RULES

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
|                 | NIL     | NIL     | NIL     | NIL    | NIL      |
|                 |         |         |         |        |          |
|                 |         |         |         |        |          |

Comment

This band was formally established at the 1979 World Administrative Radio Conference in ITU Region 2 (the Americas) and, while it has not yet been implemented for radio astronomy observations, it is one of only a few bands where such research can proceed in future in this lower range of spectrum. No changes to this use are suggested at this time.

ALLOCATION

614-806 MHz  
BROADCASTING

See broadcasting information contained in band  
470-608 MHz

ALLOCATION

806-890 MHz  
MOBILE  
Fixed

FN 700 C11

EXISTING USAGE POLICY/RULES

International FN 700 permits the operation of mobile-satellite stations under certain conditions. Canadian FN C11 describes the conditions for continuing operation of TV broadcasting stations on channels 70-83. North American compatible cellular operations are contained in this band as are trunked operations. Conventional and trunked land mobile radio systems are normally authorized in accordance with a 25 kHz established channelling plan while cellular system channel spacing is 30 kHz. Both types of systems employ 45 MHz duplex spacing.

| TYPE OF SERVICE | REGION  |         |         |        |          |
|-----------------|---------|---------|---------|--------|----------|
|                 | PACIFIC | CENTRAL | ONTARIO | QUEBEC | ATLANTIC |
| BT              | 9       | 2       | 2       |        |          |
| EX              | 2       | 92      | 2       | 60     | 2        |
| FB              | 195     | 30      | 1055    | 613    |          |
| FX              | 229     | 289     | 1281    | 606    | 15       |
| ML              | 4468    | 2989    | 26680   | 13780  | 106      |
| FBFX            | 27      | 66      | 198     | 78     | 14       |
| 1               |         | 2       |         |        |          |
| 2               |         | 61      | 140     | 358    |          |

Comment

In order to provide for enhanced flexibility in development of the Telesat Canada mobile satellite service (MSAT), Canada is proposing an upward extension for FN 700 to 896 MHz at the 1987 World Administrative Radio Conference.



806 - 890 MHz

|      | H<br>A<br>L<br>I<br>F<br>A<br>X | Q<br>U<br>E<br>B<br>E<br>C | M<br>O<br>N<br>T<br>R<br>E<br>A<br>L | O<br>T<br>T<br>A<br>W<br>A | T<br>O<br>R<br>O<br>N<br>T<br>O | H<br>A<br>M<br>I<br>L<br>T<br>O<br>N | K<br>I<br>T<br>C<br>H<br>E<br>N<br>E<br>R | L<br>O<br>N<br>D<br>O<br>N | W<br>I<br>N<br>N<br>I<br>P<br>E<br>G | C<br>A<br>L<br>G<br>A<br>R<br>Y | E<br>D<br>M<br>O<br>N<br>T<br>O<br>N | V<br>A<br>N<br>C<br>O<br>U<br>V<br>E<br>R | V<br>I<br>C<br>T<br>O<br>R<br>I<br>A |
|------|---------------------------------|----------------------------|--------------------------------------|----------------------------|---------------------------------|--------------------------------------|---|----------------------------|--------------------------------------|---------------------------------|--------------------------------------|---|--------------------------------------|
| EX   | 2                               |                            | 64                                   |                            | 4                               |                                      |   |                            | 2                                    | 90                              |                                      | 2   |                                      |
| FB   |                                 | 57                         | 729                                  | 85                         | 1058                            | 133                                  | 64  | 129                        |                                      |                                 | 24                                   | 257                                       | 32                                   |
| FX   | 15                              | 114                        | 477                                  | 54                         | 837                             | 255                                  | 25  | 82                         | 8                                    | 95                              | 140                                  | 266                                       |                                      |
| ML   | 79                              | 1224                       | 3953                                 | 1035                       | 11034                           | 2607                                 | 660                                       | 764                        | 193                                  | 476                             | 1975                                 | 2815                                      | 117                                  |
| FBFX | 5                               | 15                         | 61                                   | 20                         | 124                             | 20                                   | 15  | 29                         | 14                                   | 15                              | 28                                   | 22  | 5                                    |
| 1    |                                 |                            | 1                                    |                            |                                 |                                      |   |                            | 2                                    |                                 | 4                                    |   |                                      |
| 2    |                                 |                            | 5                                    |                            | 80                              | 52                                   |   | 5                          | 32                                   |                                 | 23                                   |   |                                      |