

APPENDIX 1 TO  
ARRANGEMENT BRADIONAVIGATION SERVICE - AERONAUTICAL

ILS-LOC, 108-112 Mc/s; ILS-GP, 328.6-335.4 Mc/s; VOR, 108-117.975 Mc/s; DME, 960-1215 Mc/s.

TECHNICAL DATA REQUIRED FOR COORDINATION

- (a) Frequency
- (b) Location name and geographical coordinates to the nearest second
- (c) Class of emission and necessary bandwidth
- (d) Transmitter mean power output (Peak for DME)
- (e) Antenna azimuth and gain in the event of a directional antenna array
- (f) Facility service volume in terms of altitude and radius protected

COORDINATION ZONES

The coordination zones shall be based on the geographical distance from the US/Canadian borders as follows:

ILS                    100 NM of U.S./Canadian borders  
VOR/DME - 300 NM of U.S./Canadian borders

- Note 1: DOT/FAA agree to exchange recapitulative records of assignments at intervals of 3 months.
- Note 2: DME channels 1 through 16 and 60 through 69 are excluded from coordination between the DOT and FAA.
- Note 3: The SSR frequencies 1030 and 1090 Mc/s are excluded from coordination between the DOT and FAA.
- Note 4: When the possibility exists that assignments outside of the normal coordination zones might result in harmful interference to the radio services of the other country due to their peculiar circumstances i.e., antenna height, power, directive arrays, abnormal service volumes, etc., the assignment of the frequencies involved may, to the extent practicable, be the subject of special coordination by the DOT and FAA.
- Note 5: Coordination of airborne assignments is not required when use is an integral part of the Common Navigation System.

**APPENDIX 2 TO  
ARRANGEMENT B**

**AERONAUTICAL MOBILE (R) SERVICE - AIR TRAFFIC CONTROL**

117.975-121.975 Mc/s; 123.575-128.825 Mc/s; 132.025-135.0 Mc/s.

**TECHNICAL DATA REQUIRED FOR COORDINATION**

- (a) Frequency
- (b) Location name and geographical coordinates
- (c) Class of emission and necessary bandwidth
- (d) Transmitter mean power output
- (e) Antenna gain and azimuth in the event of a directional antenna array
- (f) Facility service volume and function, e.g., typical function service volumes:

Precision Approach Radar	30 NM up to 5000 ft.
Helicopter control	30 NM up to 5000 ft.
Local control and VFR Radar Advisory	30 NM up to 20,000 ft.
Approach control including radar	60 NM up to 25,000 ft.
Departure control including radar	60 NM up to 20,000 ft.
Low Altitude Enroute (United States)	60 NM up to 18,000 ft.
Low Altitude Enroute (Canada)	100 NM up to 23,000 ft.
High Altitude Enroute	150 NM up to 45,000 ft.

**COORDINATION ZONES**

The coordination zones for terminal and low altitude facilities are within 400 NM of the borders. The coordination zones for high altitude facilities are within 600 NM of the borders. This is predicated upon the terminal assignments being placed between 117.975-126.975 Mc/s and the enroute assignments between 126.975-135.0 Mc/s. Exceptions should be handled in accordance with Note 7.

Note 1: DOT and FAA agree to exchange recapitulative records of assignments at intervals of three months.

Note 2: The frequency 121.5 Mc/s is excluded from coordination when used for emergency or distress and for SAR and scene of action functions. The frequency 121.6 Mc/s is excluded from coordination when used for SAR and scene of action functions.

Note 3: Coordination of airborne assignments is not required when use is an integral part of the Air Traffic Control Service.

Note 4: Protection is provided for the following fixed assignments in British Columbia:

133.65 Mc/s ± 75 kc/s  
133.77 Mc/s ± 75 kc/s  
134.43 Mc/s ± 150 kc/s

- Note 5: The frequencies 134.05 and 134.15 Mc/s will not be assigned in order to provide protection to operations on the frequency 134.10 Mc/s.
- Note 6: The frequencies 126.90, 127.10, 127.30 and 128.50 Mc/s will continue to be used by Canada for enroute operational control.
- Note 7: When the possibility exists that assignments outside of the normal coordination zones might result in harmful interference to the radio services of the other country due to their peculiar circumstances, i.e., satellite relay stations, antenna height, power, directive arrays, abnormal service volumes, etc., the assignment of the frequencies involved may, to the extent practicable, be the subject of special coordination by the DOT and FAA.

**APPENDIX 8 TO  
ARRANGEMENT B****AERONAUTICAL MOBILE (R) SERVICE - ENROUTE OPERATIONAL  
CONTROL**

128.825-132.025 Mc/s

**TECHNICAL DATA REQUIRED FOR COORDINATION**

- (a) Frequency
- (b) Location name and geographical coordinates
- (c) Class of emission and necessary bandwidth
- (d) Transmitter mean power output
- (e) Antenna gain and azimuth in the event of a directional antenna array
- (f) Level of operations:
  - Low-Level (LL)-below 15,000 feet
  - Medium-Level (ML)-15,000 to 24,000 feet
  - High-Level (HL)-above 24,000 feet

**COORDINATION ZONES**

The coordination zones are within 400 NM of the borders for Low-Level (LL) and Medium-Level (ML) operations and 600 NM of the borders for High-Level (HL) operations, respectively. Exceptions should be handled in accordance with the provisions of Note 3.

**FREQUENCY ALLOTMENT PLANS**

The frequency allotment plan for the Aeronautical Mobile (R)/ (Enroute) service in the band 128.825-132.025 Mc/s is shown for the United States in Attachment 1 hereto, and for Canada in Attachment 2. Case by case coordination effected subsequent to November 28, 1960, between the FCC and the DOT is a part of the attached plans.

- Note 1: DOT/FCC agree to exchange recapitulative records of assignments essentially within the zones specified at intervals of three months.
- Note 2: Coordination of airborne assignments is not required for enroute operational control communication assignments made in accordance with applicable rules and treaties.
- Note 3: When the possibility exists that assignments outside the normal coordination zones might result in harmful interference to the radio service of the other country due to their peculiar circumstances, i.e., satellite relay stations, antenna height, power, directive antenna arrays, etc., the assignments of the frequencies involved may, to the extent practicable, be the subject of special coordination between the DOT and the FCC.

APPENDIX 4 TO  
ARRANGEMENT BAERONAUTICAL MOBILE (R) SERVICE - ENROUTE OPERATIONAL  
CONTROL AND AIR TRAFFIC CONTROL

135.0-136.0 Mc/s.

TECHNICAL DATA REQUIRED FOR COORDINATION

- (a) Frequency
- (b) Location name and geographical coordinates
- (c) Class of emission and necessary bandwidth
- (d) Transmitter mean power output
- (e) Antenna gain and azimuth in the event of a directional antenna array
- (f) For air traffic control facilities the service volume and function, e.g., typical function service volume:

Precision Approach Radar	30 NM up to 5,000 ft.
Helicopter control	30 NM up to 5,000 ft.
Local control and VFR Radar Advisory	30 NM up to 20,000 ft.
Approach control including radar	60 NM up to 25,000 ft.
Departure control including radar	60 NM up to 20,000 ft.
Low Altitude Enroute (United States)	60 NM up to 18,000 ft.
Low Altitude Enroute (Canada)	100 NM up to 23,000 ft.
High Altitude Enroute	150 NM up to 45,000 ft.

For enroute operational control functions the level of operations:

- Low-Level (LL)—below 15,000 feet
- Medium-Level (ML)—15,000 to 24,000 feet
- High-Level (HL)—above 24,000 feet

**COORDINATION ZONES**

The coordination zone is within 600 nautical miles of the borders. Exceptions should be handled in accordance with the provisions of Note 4.

Note 1: DOT and FAA agree to exchange recapitulative records of assignments at intervals of three months.

Note 2: Coordination of airborne assignments is not required when use is an integral part of the Air Traffic Control Service.

Note 3: Protection is provided temporarily for the existing fixed assignments on 136.03 Mc/s in British Columbia.

Note 4: When the possibility exists that assignments outside of the normal coordination zones might result in harmful interference to the radio services of the other country due to their peculiar circumstances, i.e., satellite relay stations, antenna height, power, directive arrays, abnormal service volumes, etc., the assignment of the frequencies involved may, to the extent practicable, be the subject of special coordination by the DOT and FAA.

**ARRANGEMENT C**  
**ARRANGEMENT FOR FREQUENCY COORDINATION OF FIXED**  
**INSTALLATION RADARS**

(Adopted Ottawa, March, 1962 and revised Washington, D.C.,  
October, 1964)

It is agreed that:

1. Coordination shall be effected in those frequency bands used by fixed installation radars, some of which are essential to the defence of North America, whenever there is considered to be a likelihood of harmful interference. For this purpose information will be exchanged through the authorized coordination agencies, as follows:
  - (a) All relevant existing assignments as of the effective date of this arrangement, as soon as practicable.
  - (b) Current editions of the information in (a), as requested.
  - (c) Proposed or planned assignments as far in advance as practicable.
2. The authorized agencies responsible for taking action on the coordinations are specified in the Index to the Technical Annex. In the case of US military coordinations, the coordination data will be transmitted via the established coordination channel. The Canadian military will coordinate as necessary with the DOT who will be responsible for the technical examination and completion of Canadian coordination in conjunction with cognizant Canadian military agencies. In the case of Canadian originated military coordinations, after internal coordination with the DOT, the data will be passed to the US via the established coordination channel. Non-military coordinations, after complete internal coordination, will be transmitted direct between the authorized non-military coordination agencies shown in the Index for each particular band.
3. Detailed characteristics of transmitting and receiving equipment, for both radar and any relevant non-radar equipment, will be exchanged in advance of the coordination referred to above. The minimum desirable information is as follows:
  - (a) Frequency band or operating frequencies
  - (b) Location name and geographical coordinates

- (c) Site elevation above mean sea level and antenna height above ground
  - (d) Class of emission and necessary bandwidth
  - (e) Power (peak) delivered to the antenna
  - (f) Function
  - (g) Antenna gain and orientation
4. Until the bands covered by this arrangement have been cleared of potential conflicts, at installations where there is a possibility of harmful interference, evaluation testing of radar installations will be carried out at the time of activation and maximum cooperation will be extended in obtaining the best engineering solution to any harmful interference problems. It is recognized that special problems exist in bands presently in use for non-radar purposes. These problems require continuous further study as regards both the procedures and the necessity of allocation adjustments so as to accommodate radars essential to the defence of North America.
  5. Radar assignments in use on the effective date of this arrangement are not subject to further coordination by virtue of this arrangement.

6. Military assignments not subject to this arrangement

**ARRANGEMENT D****ARRANGEMENT BETWEEN THE DEPARTMENT OF TRANSPORT AND THE INTERDEPARTMENT RADIO ADVISORY COMMITTEE FOR THE EXCHANGE OF FREQUENCY ASSIGNMENT INFORMATION AND ENGINEERING COMMENTS ON PROPOSED ASSIGNMENTS ALONG THE CANADA-UNITED STATES BORDERS IN CERTAIN FREQUENCY BANDS ABOVE 30 MC/S**

(Adopted Washington, D.C., June, 1956; revised Ottawa, March, 1962, and Washington, D.C., October, 1964)

1. This arrangement provides for the exchange of frequency assignment information and engineering comments on proposed assignments in the following frequency bands:

(a)	<u>Mc/s</u>	<u>Mc/s</u>	<u>Mc/s</u>
	32.00 - 33.00	40.00 - 42.00	1710.00 - 1850.00
	34.00 - 35.00	148.00 - 149.90	2200.00 - 2290.00
	36.00 - 37.00	150.05 - 150.80	4400.00 - 4990.00
	38.00 - 39.00	162.00 - 174.00	7125.00 - 7250.00
			7750.00 - 7900.00

(b)	<u>Mc/s</u>
	2110.00 - 2120.00
	7250.00 - 7750.00
	7900.00 - 8400.00

2. (a) For the bands below 1000 Mc/s, the areas involved are those bounded by:

Line A - Begins at Aberdeen, Wash. running by great circle arc to the intersection of 48° N., 120° W., thence along parallel 48° N., to the intersection of 95° W., thence by great circle arc through the southernmost point of Duluth, Minn., thence by great circle arc to 45° N., 85° W., thence southward along meridian 85° W., to its intersection with parallel 41° N., thence along parallel 41° N., to its intersection with meridian 82° W., thence by great circle arc through the southernmost point of Bangor, Me., thence by great circle arc through the southernmost point of Searsport, Me., at which point it terminates; and

Line B - Begins at Tofino, B.C., running by great circle arc to the intersection of 50° N., 125° W., thence along parallel 50° N., to the intersection of 90° W., thence by great circle arc to the intersection of 45° N., 79° 30' W., thence by great circle arc through the northernmost point of Drummondville, Quebec (Lat: 45° 52' N., Long: 72° 30' W.), thence by great circle arc to 48° 30' N., 70° W., thence by great circle arc through the northernmost point of Campbellton, N.B., thence by great circle arc through the northernmost point of Liverpool, N.S., at which point it terminates.

Line C - Begins at the intersection of 70° N., 144° W., thence by great circle arc to the intersection of 60° N., 143° W., thence by great circle arc so as to include all of the Alaskan Panhandle; and

Line D - Begins at the intersection of 70° N., 138° W., thence by great circle arc to the intersection of 61° 20' N., 139° W. (Burwash Landing), thence by great circle arc to the intersection of 60° 45' N., 135° W., thence by great circle arc to the intersection of 56° N., 128° W., thence south along 128° meridian to Lat. 55° N., thence by great circle arc to the intersection of 54° N., 130° W., thence by great circle arc to Port Clements, thence to the Pacific Ocean where it ends.

- (b) For any station of a terrestrial service using a band above 1000 Mc/s, the areas involved are as follows:
- (1) For a station the antenna of which looks within the 200° sector toward the Canada-United States borders, that area in each country within 35 miles of the borders;
  - (2) For a station the antenna of which looks within the 160° sector away from the Canada-United States borders, that area in each country within 5 miles of the borders; and,
  - (3) The area in either country within the coordination distance (paragraph 8) of a receiving earth station in the other country which uses the same band.
- (c) For bands above 1000 Mc/s, coordination of an earth station is required if any portion of the Canada-United States borders lies within the coordination distance (paragraph 8) of the earth station.
3. Current records of frequency assignments in the frequency bands listed in paragraph 1 will be exchanged as required.
4. (a) Before either Agency takes final action on any proposal for the use of any frequency, other than for military tactical and training operations in the bands listed in paragraph 1(a), in the areas stipulated in paragraph 2:

- (1) in the bands below 1000 Mc/s, listed in paragraph 1, involving power in excess of 5 watts; or,
  - (2) in the bands above 1000 Mc/s, listed in paragraph 1;
- it will refer the pertinent particulars of the proposed assignment (see Appendix 1, 2 or 3, as appropriate) to the other Agency for comment on whether the granting of an authorization will be liable to result in the causing of harmful interference to any existing radio operations of the Agency whose views are sought, or, in the case of a receiving earth station, whether harmful interference would be caused to reception at the earth station by any existing radio operations of the Agency whose views are sought.
- (b) If adverse comment is not received within 30 calendar days from the date of the receipt of the proposal, the initiating Agency may go ahead with the operation after having notified the other Agency. In an emergency, coordination may be effected after the assignment is put into operation.
  - (c) Neither the Interdepartment Radio Advisory Committee nor the Department of Transport shall be bound to act in accordance with the views of the other. However, to keep such instances to a minimum, each Agency should cooperate to the fullest extent practicable with the other by furnishing such additional data as may be required.
5. In cases where the information available makes it difficult to determine whether harmful interference would be created by the granting of a particular authorization, arrangements may be made for actual on-the-air tests to be observed by representatives of each Agency and further exchanges of engineering comments following such tests.
  6. In the interest of planned use of the spectrum, information about future expansions and adjustments of the services allocated the use of the bands listed in paragraph 1, in the areas stipulated herein, may be exchanged to the maximum extent practicable.
  7. Where a previously coordinated frequency assignment is in use and an additional assignment is proposed for the same frequency in the same area, the additional assignment must also be coordinated, attention being drawn to the previous coordination. This does not apply to the addition of mobile units to a previously coordinated land mobile system.
  8. Coordination distance shall be the distance, calculated for any station, according to Recommendation 1A of the Final Acts of the EARC, Geneva, 1963.

**APPENDIX 1 TO  
ARRANGEMENT D****BASIC DATA REQUIRED FOR THE COORDINATION OF TERRESTRIAL STATIONS IN THE BANDS BELOW 1000 M/CS**

- a. Class of station
- b. Number of stations (including, when available, number of mobile stations)
- c. Location and coordinates
- d. Frequency
- e. Power (mean) delivered to the antenna
- f. Class of emission and necessary bandwidth
- g. Antenna gain (db) and azimuth, when available
- h. Antenna elevation in ft. above mean sea level (MSL), when available

**APPENDIX 2 TO  
ARRANGEMENT D****BASIC DATA REQUIRED FOR THE COORDINATION OF TERRESTRIAL STATIONS IN THE BANDS ABOVE 1000 MC/S**

- a. Class of station
- b. Number of stations (including, when available, number of mobile stations)
- c. Location and coordinates
- d. Frequency
- e. Power (mean) delivered to the antenna
- f. Class of emission and necessary bandwidth
- g. Antenna gain (db), azimuth and, when available, elevation angle
- h. Antenna elevation in ft. above mean sea level (MSL)
- i. Polarization of transmitted wave
- j. Topographic map of territory between stations at fixed locations and the Canada-United States borders (required only for stations within the coordination distance of a previously coordinated receiving earth station which uses the same band)

**APPENDIX 3 TO  
ARRANGEMENT D****BASIC DATA REQUIRED FOR THE COORDINATION OF EARTH  
STATIONS IN THE SPACE SERVICE**

- a. Class of station
- b. Frequencies
- c. Location and coordinates
- d. Azimuthal and elevation coverage of celestial hemisphere as defined by main axis of antenna
- e. Class of emission and necessary bandwidth
- f. Power (mean) delivered to the antenna and, where applicable, estimated terminal coupling losses
- g. Maximum gain of antenna in the horizontal plane as a function of azimuth
- h. Maximum gain of antenna (referred to isotropic)
- i. Antenna elevation in ft. above mean sea level (MSL)
- j. Polarization of transmitted wave
- k. Topographic map of territory between earth station and Canada-U.S. borders in the sector wherein the coordination distance exceeds the distance to the border
- l. Numerical values of terrain shielding in the pertinent directions

*The Canadian Secretary of State for External Affairs to the American Ambassador*

DEPARTMENT OF EXTERNAL  
AFFAIRS

CANADA

MINISTÈRE DES AFFAIRES  
EXTÉRIEURES

No. 77

OTTAWA, *June 24, 1965.*

**EXCELLENCY:**

I have the honour to refer to your Note No. 264 of June 16, 1965 proposing that certain amendments be made in the technical annex to the Agreement of October 24, 1962 between the Governments of Canada and the United States on the subject of "Co-ordination and Use of Radio Frequencies Above Thirty Megacycles per Second".

The proposed amendments are acceptable to the Government of Canada. I have the honour, therefore, to concur in your proposal that your Note and this reply shall constitute an Agreement between our two Governments to replace the technical annex of the 1962 Agreement by the revised annex attached to your Note.

Accept, Excellency, the renewed assurances of my highest consideration.

**PAUL MARTIN**  
*Secretary of State for External Affairs.*

His Excellency W. WALTON BUTTERWORTH,  
*Ambassador,*  
*Embassy of the United States of America,*  
*Ottawa.*

RECEIVED

SEP 14 1992

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

TELECOMMUNICATION

Coordination and Use of Radio Frequencies  
Above 30 Megacycles per Second

Agreement Between the  
UNITED STATES OF AMERICA  
and CANADA

Effected by Exchange of Notes  
Signed at Ottawa October 24, 1962

FEB 5 1963



92-160

# CANADA

## Telecommunication: Coordination and Use of Radio Frequencies Above 30 Megacycles per Second

*Agreement effected by exchange of notes  
Signed at Ottawa October 24, 1962;  
Entered into force October 24, 1962. ✓*

*The American Chargé d'Affaires ad interim to the Canadian Secretary  
of State for External Affairs*

EMBASSY OF THE  
UNITED STATES OF AMERICA  
*Ottawa, October 24, 1962.*

No. 107

DEAR SIR:

I have the honour to refer to discussions which have taken place between representatives of the Government of Canada and the Government of the United States of America relating to the coordination and use of radio frequencies above thirty megacycles per second. In the course of these discussions, the sovereign right of each country to regulate its use of radio frequencies was acknowledged. Also, the desirability of providing for adequate spectrum space to meet equitably the requirements of the radio services of both Canada and the United States, now and in the future, was recognized. In addition, the representatives recognized that it was to the mutual advantage of both countries to avoid harmful interference to each other's radio services and they noted the major developments that have taken place and are taking place in both countries in that part of the radio frequency spectrum allocated internationally by the International Telecommunication Union from thirty megacycles per second (30 Mc/s) up to forty gigacycles per second (40 Gc/s).

In the interest of efficient spectrum management the representatives have made the following proposals and drafted the attached Technical Annex which constitutes a part of them:

- (1) The two countries will continue to recognize those frequency arrangements already in effect for bands above 30 Mc/s as described in the Technical Annex;
- (2) They will establish, where mutually determined as being feasible and desirable, arrangements for the coordination of

DEPARTMENT OF STATE

[Literal print]

radio frequency assignments in those bands above 30 Mc/s for which there are no existing procedures;

- (3) Where mutually determined as being feasible and desirable, and in order to facilitate development in both countries, joint frequency allotment plans should be developed by Canada and the United States for particular frequency bands and radio services above 30 Mc/s;
- (4) The arrangements referred to in sub-paragraphs (2) and (3) above shall be as specified in the Technical Annex;
- (5) Additional frequency bands, in which frequency coordination procedures should be developed or in which frequency allotment plans should be developed, may be added from time to time to the Technical Annex by listing them in the Index thereto, together with the designation of the Agencies responsible for such development;
- (6) (a) The procedure to be followed in amending the Index to the Technical Annex as envisaged in sub-paragraph (5) would be that specified in sub-paragraph (12)(a) below;
- (b) The modification of frequency coordination procedures or joint frequency allotment plans in a particular band shall be the responsibility of the Agencies specified in the Index to the Technical Annex;
- (7) (a) Radio broadcasting shall continue to be the subject of separate agreements and therefore is excluded from the provisions of this Note;
- (b) The coordination and use of frequencies by the amateur radio service are excluded from the provisions of this Note;
- (8) In those bands where frequency coordination procedures have been established, when it is considered that the use of frequencies at locations not included in such procedures might result in harmful interference to the radio services of the other country, the assignment of the frequencies involved may, to the extent practicable, be the subject of special coordination by the Agencies authorized by the two Governments as specified in the Technical Annex;
- (9) The authorized Agencies shall be responsible in their respective countries for the implementation of the frequency coordination procedures and joint frequency allotment plans provided for in this Note, as specified in the Technical Annex;
- (10) It is recognized that existing coordination channels are adequate and nothing in this Note is intended to be construed as indicating a need for change in such channels unless and until such change is considered desirable by both parties hereto;

- (11) This Note shall not be deemed to affect or supersede any other international agreements in the field of telecommunications in force for either country;
- (12) (a) This Note may be amended by an Exchange of Notes between authorized representatives of the two Governments;
- (b) Any amendments or modifications to the Technical Annex other than those provided for in sub-paragraph (5) will be effected administratively by the Agencies specified either in the Technical Annex or in the Exchange of Notes provided for under sub-paragraph (6)(a);
- (c) All amendments or modifications made pursuant to sub-paragraph (12)(b) above shall be notified to the Department of External Affairs of Canada and the Department of State of the United States of America by the respective Agencies of each country.

Accordingly, I propose that this Note, with the Technical Annex and your reply shall constitute an Agreement for the coordination and use of radio frequencies above thirty megacycles per second between our two Governments, effective from the date of your reply. Furthermore, because of its nature, I propose that, if you concur, this Agreement may only be terminated by either country giving twelve months' notice, in writing, of its intention to terminate the Agreement.

Accept, Sir, the renewed assurances of my highest consideration.

IVAN B. WHITE

Ivan B. White

*Charge d'Affaires ad interim*

The Honorable

HOWARD C. GREEN, P.C., Q.C., M.P.,  
*Secretary of State for External Affairs,*  
*Ottawa.*

TECHNICAL ANNEX  
TO THE

EXCHANGE OF NOTES BETWEEN THE GOVERNMENT OF CANADA AND THE GOVERNMENT OF THE UNITED STATES OF AMERICA CONSTITUTING AN AGREEMENT FOR RADIO FREQUENCY COORDINATION AND USE OF RADIO FREQUENCIES ABOVE THIRTY MEGACYCLES PER SECOND.

INDEX TO THE TECHNICAL ANNEX  
LISTING

FREQUENCY BANDS, AUTHORIZED COORDINATION AGENCIES OR CHANNELS, AND ARRANGEMENTS

Item	Frequency Bands Mc/s	Authorized Coordination Agencies or Channels		Coordination Arrangements and Remarks
		U.S.	Canada	
1	30.56-32.0	FCC	DOT	Arrangement A
2	33.0-34.0	FCC	DOT	Arrangement A
3	35.0-36.0	FCC	DOT	Arrangement A
4	37.0-38.0	FCC	DOT	Arrangement A
5	39.0-40.0	FCC	DOT	Arrangement A
6	42.0-46.6	FCC	DOT	Arrangement A
7	46.6-47.0	IRAC	DOT	ITU RR 228
8	47.0-49.6	FCC	DOT	Arrangement A
9	49.6-50.0	IRAC	DOT	ITU RR 228
10	72.0-74.6	FCC	DOT	Arrangement A
11	74.6-75.4	FAA	DOT	Arrangement B
12	75.4-76.0	FCC	DOT	Arrangement A
13	108.0-117.975	FAA	DOT	Arrangement B
14	117.975-121.975	FAA	DOT	Arrangement B
15	121.975-123.075	FCC	DOT	Arrangement B
16	123.075-123.575	FCC	DOT	Arrangement B
7	123.575-128.825	FAA	DOT	Arrangement B
18	128.825-132.025	FCC	DOT	Arrangement B
19	132.025-136.0	FAA	DOT	Arrangement B
20	137.0-144.0	JCS	CCS*	Arrangement C
21	150.8-174.0	FCC	DOT	Arrangement A
22	162.0-174.0	IRAC	DOT	Arrangement D
23	216.0-225.0	JCS	CCS*	Arrangement C
24	328.6-335.4	FAA	DOT	Arrangement B
25	420.0-450.0	JCS	CCS*	Arrangement C
26	450.0-470.0	FCC	DOT	Arrangement A
27	890.0-942.0	JCS	CCS*	Arrangement C
28	942.0-960.0	FCC	DOT	Arrangement A
29	960.0-1215.0	FAA	DOT	Arrangement B
30	1215.0-1400.0	JCS	CCS*	Arrangement C
31	1300.0-1350.0	FAA	DOT	Arrangement C
32	1400.0-1427.0			Coordination not required
33	1535.0-1660.0			Coordination not required at this time

\*Authorized coordination channel only.

INDEX TO THE TECHNICAL ANNEX

Item	Frequency Band Mc/s	Authorized Coordination Agencies or Channels		Coordination Arrangements and Remarks
		U.S.	Canada	
34	1850.0-2200.0	FCC	DOT	Arrangement A
35	2300.0-2450.0	JCS	CCS*	Arrangement C
36	2450.0-2700.0			Coordination not required at this time
37	2700.0-2900.0	FAA	DOT	Arrangement C
38	2700.0-3700.0	JCS	CCS*	Arrangement C
39	2900.0-3100.0	IRAC	DOT	Arrangement C
40	3700.0-4200.0	FCC	DOT	Arrangement A
41	4200.0-4400.0			Coordination not required at this time
42	5000.0-5250.0			Coordination not required at this time
43	5250.0-5925.0	JCS	CCS*	Arrangement C
44	5460.0-5650.0	IRAC	DOT	Arrangement C
45	5925.0-7125.0	FCC	DOT	Arrangement A
46	8400.0-8500.0			Coordination not required at this time
47	8500.0-10500.0	JCS	CCS*	Arrangement C
48	9000.0-9200.0	FAA	DOT	Arrangement C
49	9300.0-9500.0	IRAC	DOT	Arrangement C
	<u>Gc/s</u>			
50	10.55-13.25	FCC	DOT	Arrangement A
51	13.25-13.4			Coordination not required at this time
52	13.4-14.0	JCS	CCS*	Arrangement C
53	14.0-15.7			Coordination not required at this time
54	15.7-17.7	JCS	CCS*	Arrangement C
55	17.7-23.0			Coordination not required at this time
56	23.0-24.25	JCS	CCS*	Arrangement C
57	24.25-33.4			Coordination not required at this time
58	33.4-36.0	JCS	CCS*	Arrangement C
59	36.0 and above			Coordination not required at this time

\*Authorized coordination channel only.

ARRANGEMENT A

ARRANGEMENT BETWEEN THE DEPARTMENT OF TRANSPORT AND THE FEDERAL COMMUNICATIONS COMMISSION FOR THE EXCHANGE OF FREQUENCY ASSIGNMENT INFORMATION AND ENGINEERING COMMENTS ON PROPOSED ASSIGNMENTS ALONG THE CANADA-UNITED STATES BORDERS IN CERTAIN BANDS ABOVE 30 MC/S

(Adopted by correspondence May, 1950; Revised Ottawa March, 1962)

1. (a) This arrangement involves assignments in the following frequency bands, except as provided in sub-paragraphs (b), (c) and (d) below:

<u>Mc/s</u>	<u>Mc/s</u>
30. 56-32. 00	75. 40-76. 00
33. 00-34. 00	150. 80-174. 00
35. 00-36. 00	450. 00-464. 725
37. 00-38. 00	465. 275-470. 00
39. 00-40. 00	942. 00-960. 00
42. 00-46. 60	1850. 0-2200. 0
47. 00-49. 60	3700. 0-4200. 0
72. 00-74. 60	5925. 0-7125. 0

Gc/s

10. 55-13. 25

- (b) The following frequencies are not involved in this arrangement because of the nature of the services:

<u>Mc/s</u>	<u>Mc/s</u>
156. 3	156. 7
156. 35	156. 8
156. 4	156. 9
156. 45	156. 95
156. 5	157. 0 and 161. 6
156. 55	✓ 157. 05
156. 6	157. 1
156. 65	157. 15

- (c) Assignments proposed in accordance with the railroad industry radio frequency allotment plan along the United States-Canada border utilized by the Federal Communications Commission and the Department of Transport, respectively, may be excepted from this arrangement at the discretion of the referring Agency.
- (d) Assignments proposed in any radio service in frequency bands below 470 Mc/s appropriate to this arrangement, other than those for stations in the Domestic Public (land mobile or fixed) category, may be excepted from this arrangement at

ARRANGEMENT A

the discretion of the referring Agency if a base station assignment has been made previously under the terms of this arrangement or prior to its adoption in the same radio service and on the same frequency and in the local area, and provided the basic characteristics of the additional station are sufficiently similar technically to the original assignment to preclude harmful interference to existing stations across the border.

2. (a) For Bands below 470 Mc/s, the areas which are involved lie between Lines A and B and between Lines C and D, as follows:

Line A—Begins at Aberdeen, Wash. running by great circle arc to the intersection of 48° N., 120° W., thence along parallel 48° N., to the intersection of 95° W., thence by great circle arc through the southernmost point of Duluth, Min., thence by great circle arc to 45° N., 85° W., thence southward along meridian 85° W., to its intersection with parallel 41° N., thence along parallel 41° N., to its intersection with meridian 82° W., thence by great circle arc through the southernmost point of Bangor, Me., thence by great circle arc through the southernmost point of Searsport, Me., at which point it terminates; and

Line B—Begins at Tofino, B.C., running by great circle arc to the intersection of 50° N., 125° W., thence along parallel 50° N., to the intersection of 90° W., thence by great circle arc to the intersection of 45° N., 79°30' W., thence by great circle arc through the northernmost point of Drummondville, Quebec (Lat: 45°52' N., Long: 72°30' W.), thence by great circle arc to 48°30' N., 70° W., thence by great circle arc through the northernmost point of Campbellton, N.B., thence by great circle arc through the northernmost point of Liverpool, N.S., at which point it terminates.

Line C—Begins at the intersection of 70° N., 144° W., thence by great circle arc to the intersection of 60° N., 143° W., thence by great circle arc so as to include all of the Alaskan Panhandle; and

Line D—Begins at the intersection of 70° N., 138° W., thence by great circle arc to the intersection of 61°20' N., 139° W. (Burwash Landing), thence by great circle arc to the intersection of 60°45' N., 135° W., thence by great circle arc to the intersection of 56° N., 128° W., thence south along 128° meridian to Lat. 55° N., thence by great circle arc to the intersection of 54° N., 130° W., thence by great circle arc to Port Clements, thence to the Pacific Ocean where it ends.

ARRANGEMENT A

- (b) For bands above 470 Mc/s, the areas which are involved are as follows:
- (1) For a station the antenna of which looks within the 200° sector toward the Canada-United States borders, that area in each country within 35 miles of the borders; and;
  - (2) For a station the antenna of which looks within the 160° sector away from the Canada-United States borders, that area in each country within 5 miles of the borders.
3. (a) Each Agency shall furnish the other by July, 1962, with a complete frequency assignment record, including, among the basic characteristics reported, the date of first usage of each frequency by each of the stations shown regardless of the class of service, which were in actual operation on October 1, 1960, and located in the areas indicated in 2. (a) above for the frequency bands below 470 Mc/s, and located in the areas indicated in 2. (b) above for the frequency bands above 470 Mc/s. For the purpose of the revised arrangement, such record shall constitute, together with the 6th Edition of the Radio Frequency Record (Volume III), the master frequency assignment records for the two Agencies upon acceptance by the other Agency. Accordingly, in implementing the Geneva (1959) Radio Regulations,<sup>[1]</sup> each Agency shall use these frequency records, in lieu of subsequent I.T.U. records, in matters leading to the resolution of pertinent cases of harmful interference involving stations authorized by the two Agencies.
- (b) Each Agency shall keep its frequency assignment data in the aforementioned records current through the submission to the other Agency of its recapitulative master frequency assignment records at intervals of three months.
4. (a) Before the Federal Communications Commission takes final action on any application for the use of any frequency in the bands herein, in the areas stipulated above involving an effective radiated power in excess of five watts, or if protection is desired for an operation involving a power of five watts, or less, it will refer the pertinent particulars of the proposed assignment (see Appendix 3 or 4 as appropriate), in the form shown in Appendix 1 hereof, to the Department of Transport for comment as to whether the granting of an authorization will be likely to result in the causing of harmful interference to any existing Canadian assignments authorized by the Department.

ARRANGEMENT A

- (b) Before the Department of Transport takes final action on any application for the use of any frequency in the bands herein, in the areas stipulated above involving an effective radiated power in excess of five watts, or if protection is desired for an operation involving power of five watts, or less, it will refer the pertinent particulars of the proposed assignment (see Appendix 3 or 4 as appropriate), in the form shown in Appendix 2 hereof, to the Federal Communications Commission for comment as to whether the granting of an authorization will be likely to result in the causing of harmful interference to any existing United States assignments authorized by the Commission.
- (c) Neither the Federal Communications Commission nor the Department of Transport shall be bound to act in accordance with the views of the other. However, to keep such instances to a minimum, each Agency should cooperate to the fullest extent practicable with the other by furnishing such additional data as may be required.
5. Whenever differences of opinion concerning the probability of harmful interference exist, which cannot be resolved otherwise, or in cases where the information available makes it difficult to determine whether harmful interference would be created by the granting of a particular authorization, arrangement should be made for actual on-the-air tests to be observed by representatives of both the Federal Communications Commission and the Department of Transport. Should harmful interference be caused to the existing station, the Agency having jurisdiction over the proposed station should be notified promptly so that the transmissions of the interfering station may be halted. In the absence of a complaint of harmful interference, the authorization may not be granted until a lapse of 30 calendar days following the test period to allow sufficient time for the exchange, if desired, of engineering or other comments indicating an objection to the assignment.
6. In the interest of planned use of the spectrum, information concerning future expansions and adjustments of the several services allocated to use the above bands, in the areas stipulated above, shall be exchanged to the maximum extent practicable.

<sup>1</sup> TIAS 4893; 12 UST 2377.

APPENDIX 1 TO  
ARRANGEMENT A

FEDERAL COMMUNICATIONS COMMISSION  
Washington 25, D.C.

Director, Telecommunications and Electronics Branch  
OTTAWA, Ontario

AIRMAIL

In reply refer to  
6150-

Sir: Serial \_\_\_\_\_

Date: \_\_\_\_\_

This office has received an application for radio communication facilities containing the following technical details of operation. Your comments regarding the use of the frequencies indicated below would be appreciated.

Name of applicant \_\_\_\_\_

File No. \_\_\_\_\_ Service: \_\_\_\_\_

CLASS OF STATION	NUMBER OF STATIONS	LOCATION		FREQ. (MC/S)	MEAN POWER TO ANTENNA (WATTS)	EMIS- SION	ANTENNA GAIN & AZIMUTH	ANTENNA HEIGHT ABOVE M.S.L.
		LAT. N.	LONG. W.					

Additional Information:

Secretary  
FEDERAL COMMUNICATIONS COMMISSION

COMMENTS with regard to application:

DIRECTOR, TELECOMMUNICATIONS and  
ELECTRONICS BRANCH

APPENDIX 2 TO  
ARRANGEMENT A

AIR SERVICES  
TELECOMMUNICATIONS AND  
ELECTRONICS BRANCH

DEPARTMENT OF TRANSPORT  
OTTAWA

Federal Communications Commission  
Washington 25, D.C.

Serial \_\_\_\_\_

Date: \_\_\_\_\_

Sirs:

This office has received an application for radio communication facilities containing the following technical details of operation. Your comments regarding the use of the frequencies indicated below would be appreciated.

Name of applicant: \_\_\_\_\_

File No: \_\_\_\_\_

Service: \_\_\_\_\_

CLASS OF STATION	NUMBER OF STATIONS	LOCATION		FREQ. (MC/S)	MEAN POWER TO ANTENNA (WATTS)	EMIS- SION	ANTENNA GAIN & AZIMUTH	ANTENNA HEIGHT ABOVE M.S.L.
		LAT. N.	LONG. W.					

Additional Information:

Director, Telecommunications and  
Electronics Branch

Comments with regard to application:

AIRMAIL

Secretary  
Federal Communications Commission

APPENDIX 3 TO  
ARRANGEMENT A

**BASIC DATA REQUIRED FOR COORDINATION IN  
THE FIXED SERVICE AND LAND MOBILE SERVICE  
BANDS BELOW 470 Mc/s (EXCLUDING IONOSPHERIC  
SCATTER)**

- a. Operating agency
- b. Class of station
- c. Number of stations—Base & Mobile
- d. Frequency
- e. Location and coordinates
- f. Locality or area of reception
- g. Class of emission and necessary bandwidth
- h. Power (mean) delivered to the antenna
- i. Antenna gain (db) and azimuth, when available
- j. Antenna elevation above M.S.L.

APPENDIX 4 TO  
ARRANGEMENT A

**BASIC DATA REQUIRED FOR COORDINATION IN  
THE FIXED SERVICE AND MOBILE SERVICE BANDS  
ABOVE 470 Mc/s (EXCLUDING TROPOSPHERIC SCATTER)**

- a. Operating agency
- b. Class of station
- c. Number of stations—Base and Mobile
- d. Frequency
- e. Location and Coordinates
- f. Locality or area of reception, including coordinates of fixed service receiving station
- g. Class of emission and necessary bandwidth
- h. Power (mean) delivered to the antenna
- i. Antenna gain (db) and azimuth, when available
- j. Antenna elevation above M.S.L.
- k. Polarization of transmitted wave

ARRANGEMENT B

DEPARTMENT OF TRANSPORT/FEDERAL  
COMMUNICATIONS COMMISSION/FEDERAL AVIATION AGENCY  
ARRANGEMENT FOR THE EXCHANGE OF FREQUENCY  
ASSIGNMENT INFORMATION AND ENGINEERING COMMENTS ON  
PROPOSED ASSIGNMENTS ALONG THE CANADA/UNITED STATES  
BORDERS IN CERTAIN AVIATION BANDS

(Ottawa March 1962)

1. This arrangement involves assignments in the frequency bands set forth in paragraph 7 hereof.
2. In the interest of the planned use of the spectrum, information concerning future expansions and adjustments of the services allocated these bands, in the coordination zones stipulated in the Appendices attached hereto, shall be exchanged to the maximum extent practicable.
3. The Agency proposing to establish a new station, or to modify the basic characteristics of an existing station, shall furnish to the appropriate Agency the technical data necessary to complete coordination, in accordance with the attached Appendices.
4. The Agency responsible for coordination shall examine the information provided and shall reply as soon as practicable advising whether or not a conflict is anticipated. If so, the detail of the conflict and the particulars of the station likely to experience interference shall be supplied. New proposals or discussions may be initiated with the object of resolving the problem.
5. Whenever differences of opinion concerning the probability of harmful interference exist, which cannot be resolved otherwise, or in cases where the information available makes it difficult to determine whether harmful interference would be created by the proposed operation, mutual arrangement should be made for actual on-the-air tests to be observed by representatives of both the Federal Aviation Agency/Federal Communications Commission and the Department of Transport. Should harmful interference be caused to the existing station, the Agency having jurisdiction over the proposed operation should be notified promptly so that the transmissions of the interfering station may be halted.
6. Neither the Federal Aviation Agency/Federal Communications Commission nor the Department of Transport shall be bound to act in accordance with the views of the other. However, to keep such instances to a minimum, each Agency should cooperate to the fullest extent practicable with the other by furnishing such additional data as may be required.
7. The bands treated and the agreed action on each are as follows:

## ARRANGEMENT B

FREQUENCY BAND Mc/s	AUTHORIZED COOR- DINATION AGENCIES		REMARKS
	U.S.	CANADA	
74.60-75.40	FAA	DOT	Coordination not required at this time
108.0-117.975	FAA	DOT	SEE APPENDIX 1
117.975-121.975	FAA	DOT	SEE APPENDIX 2
121.975-123.075	FCC	DOT	Coordination not required at this time
123.075-123.575	FCC	DOT	Coordination not required at this time
123.575-128.825	FAA	DOT	SEE APPENDIX 2
128.825-132.025	FCC	DOT	SEE APPENDIX 3
132.025-135.0	FAA	DOT	SEE APPENDIX 2
135.0-136.0	DOS	DOT	SEE APPENDIX 4
328.6-335.4	FAA	DOT	SEE APPENDIX 1
960.0-1215.0	FAA	DOT	SEE APPENDIX 1

**NOTE:** "Coordination not required at this time" in the Remarks column indicates that the present use of these frequencies does not cause conflict in their application, either in the United States or Canada. However, authorized agencies are designated to coordinate any future use which may be capable of causing harmful interference.

APPENDIX 1 TO  
ARRANGEMENT BRADIONAVIGATION SERVICE—AERONAUTICAL

ILS-LOC, 108-112 Mc/s; ILS-GP, 328.6-335.4 Mc/s; VOR, 108-117.975 Mc/s; DME, 960-1215 Mc/s.

TECHNICAL DATA REQUIRED FOR COORDINATION

- (a) Frequency
- (b) Location name and geographical coordinates
- (c) Class of emission and necessary bandwidth
- (d) Transmitter mean power output (Peak for DME)
- (e) Antenna azimuth and gain in the event of a directional antenna array
- (f) Facility service volume in terms of altitude and radius protected

COORDINATION ZONES

The coordination zones shall be based on the geographical separation between facilities as follows:

ILS—100 NM of U.S./Canadian Border  
 VOR/DME up to 15000'—200 NM of U.S./Canadian Border  
 VOR/DME up to 30000'—300 NM of U.S./Canadian Border  
 VOR/DME up to 75000'—450 NM of U.S./Canadian Border

- Note 1: DOT/FAA agree to exchange recapitulative records of assignments at intervals of 3 months beginning June 1, 1962.
- Note 2: DME channels 1 through 16 and 60 through 69 are excluded from coordination between the DOT and FAA.
- Note 3: The SSR frequencies 1030 and 1090 Mc/s are excluded from coordination between the DOT and FAA.
- Note 4: When the possibility exists that assignments outside of the normal coordination zones might result in harmful interference to the radio services of the other country due to their peculiar circumstances i.e., antenna height, power, directive arrays, abnormal service volumes, etc., the assignment of the frequencies involved may, to the extent practicable, be the subject of special coordination by the DOT and FAA.
- Note 5: Coordination of airborne assignments is not required when use is an integral part of the Common Navigation System.

APPENDIX 2 TO  
ARRANGEMENT B

AERONAUTICAL MOBILE (R) SERVICE—AIR TRAFFIC CONTROL

117.975–121.975 Mc/s; 123.575–128.825 Mc/s; 132.025–135.0 Mc/s.

TECHNICAL DATA REQUIRED FOR COORDINATION

- (a) Frequency
- (b) Location name and geographical coordinates
- (c) Class of emission and necessary bandwidth
- (d) Transmitter mean power output
- (e) Antenna gain and azimuth in the event of a directional antenna array
- (f) Facility service volume and function, e.g., typical function service volumes:

Helicopter control	30 NM up to 5000 ft.
Local control and VFR Radar	30 NM up to 20000 ft.
Advisory.	
Approach control including radar	60 NM up to 25000 ft.
Departure control including radar	60 NM up to 20000 ft.
Basic altitude enroute	100 NM up to 15000 ft.
Intermediate altitude enroute	100 NM up to 24000 ft.
High altitude enroute	200 NM up to 75000 ft.

COORDINATION ZONES

The coordination zones for low-level and high-level operations are within 400 NM and 600 NM of the border, respectively, and are predicated upon the terminal assignments being placed between 117.975–126.975 Mc/s and the enroute assignments between 126.975–135.0 Mc/s. Exceptions should be handled in accordance with Note 7.

- Note 1: DOT and FAA agree to exchange recapitulative records of assignments at intervals of three months commencing June 1, 1962.
- Note 2: The frequencies 121.5 Mc/s and 121.6 Mc/s are excluded from coordination when used for SAR and scene-of-action functions respectively.
- Note 3: Coordination of airborne assignments is not required when use is an integral part of the Air Traffic Control Service.
- Note 4: Protection is provided for the following fixed assignments in British Columbia:
  - 133.65 Mc/s  $\pm$  75 kc/s
  - 133.77 Mc/s  $\pm$  75 kc/s
  - 134.43 Mc/s  $\pm$  150 kc/s

Note 5: Adjacent channel protection is provided for assignments on the frequency 134.10 Mc/s  $\pm$  100 kc/s.

APPENDIX 2 TO  
ARRANGEMENT B

Note 6: The frequencies 126.90, 127.10, 127.30 and 128.50 Mc/s will continue to be used by Canada for enroute operational control.

Note 7: When the possibility exists that assignments outside of the normal coordination zones might result in harmful interference to the radio services of the other country due to their peculiar circumstances, i.e., antenna height, power, directive arrays, abnormal service volumes, etc., the assignment of the frequencies involved may, to the extent practicable, be the subject of special coordination by the DOT and FAA.

**APPENDIX 3 TO  
ARRANGEMENT B**

**AERONAUTICAL MOBILE (R) SERVICE—ENROUTE OPERATIONAL  
CONTROL**

128.825–132.025 Mc/s

**TECHNICAL DATA REQUIRED FOR COORDINATION**

- (a) Frequency  
 (b) Location name and geographical coordinates  
 (c) Class of emission and necessary bandwidth  
 (d) Transmitter mean power output  
 (e) Antenna gain and azimuth in the event of a directional antenna array  
 (f) Level of operations:  
     Low-Level (LL)—below 15,000 feet  
     Medium-Level (ML)—15,000 to 24,000 feet  
     High-Level (HL)—above 24,000 feet

**COORDINATION ZONES**

The coordination zones are within 400 NM of the border for Low-Level (LL) and Medium-Level (ML) operations and 600 NM of the border for High-Level (HL) operations, respectively. Exceptions should be handled in accordance with the provisions of Note 3.

**FREQUENCY ALLOTMENT PLANS**

The frequency allotment plan for the Aeronautical Mobile (R)/(Enroute) service in the band 128.825–132.025 Mc/s is shown for the United States in Attachment 1 hereto, and for Canada in Attachment 2. Case by case coordination effected subsequent to November 28, 1960, between the FCC and the DOT is a part of the attached plans.

- Note 1: DOT/FCC agree to exchange recapitulative records of assignments essentially within the zones specified at intervals of three months commencing June 1, 1962.
- Note 2: Coordination of airborne assignments is not required for enroute operational control communication assignments made in accordance with applicable rules and treaties.
- Note 3: When the possibility exists that assignments outside the normal coordination zones might result in harmful interference to the radio service of the other country due to their peculiar circumstances, i.e., antenna height, power, directive antenna arrays, etc., the assignments of the frequencies involved may, to the extent practicable, be the subject of special coordination between the DOT and the FCC.

**ATTACHMENT 1 TO APPENDIX 3  
OF ARRANGEMENT B**

**UNITED STATES Frequency Allotment Plan for the Aeronautical Mobile  
(R)/(Enroute) Service for the Band 128.825–132.025 Mc/s**

FREQ. Mc/s	AREA OF USE	LEVEL
128.9	California, Arizona, Colorado, New Mexico, Texas, Kansas, Missouri, Illinois, Indiana, Ohio, Pennsylvania, New York and New Jersey.....	HL
129.0	Minnesota, Indiana, Illinois, Kentucky, Ohio, Maryland, West Virginia, Pennsylvania, Virginia, New York, New Jersey, Mississippi, Connecticut, Rhode Island and Delaware.....	HL
129.1	Oregon, Mississippi, California and Nevada.....	LL
129.2	Indiana, Ohio, Pennsylvania and West Virginia.....	HL
129.2	Illinois, Indiana, Michigan and Ohio.....	HL
129.3	Florida..... (International)	HL
129.3	Montana, North Dakota, Wyoming, South Dakota, Nebraska, Utah, Colorado, Arizona, New Mexico, Missouri and Iowa.....	LL
129.35	Ohio, Pennsylvania and New Jersey.....	HL
129.4	Michigan, Wisconsin, Illinois, Indiana and Ohio.....	ML
129.4	Montana, Idaho, Wyoming, South Dakota, Utah and California: Michigan, Indiana, Ohio, Pennsylvania, Maryland, West Virginia, Virginia, Kentucky, North Carolina, Tennessee and Alabama.....	ML
129.45	Illinois, Indiana, Michigan, Ohio, Pennsylvania, Virginia and Maryland.....	HL
129.5	New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Texas, Georgia and Alabama.....	HL
129.55	Illinois, Missouri, Tennessee, Indiana and Kentucky.....	ML
129.6	South Carolina, Georgia and Florida.....	HL
129.6	Michigan, Ohio, Indiana, Kentucky, Texas, Louisiana, Mississippi and Alabama.....	ML
129.65	Oregon, Idaho, Montana, Washington, Utah and California.....	LL
129.65	Michigan, Illinois, Indiana, Ohio, Pennsylvania, Kentucky, West Virginia, Virginia, Missouri, Tennessee, North Carolina, South Carolina, Oklahoma, Texas, Louisiana, Mississippi, Alabama, Georgia and Florida.....	HL
129.7	Washington, California and New York..... (International)	HL
129.7	Missouri, Arkansas, Tennessee, Mississippi and Louisiana.....	ML
129.75	Ohio, Kentucky, West Virginia, Virginia, Tennessee, North Carolina and South Carolina.....	LL
129.8	Ohio, West Virginia, Virginia, Kentucky, North Carolina and Maryland.....	LL
129.9	Minnesota, Wisconsin, Iowa, Missouri, Illinois, Kentucky, Tennessee, Nebraska, Kansas, Indiana and Louisiana.....	LL
129.9	New York and New Hampshire..... (International)	HL
130.0	California, Colorado, Kansas, Oklahoma, Texas, Missouri, Arkansas, Illinois, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Ohio and Michigan.....	LL
130.1	Texas, Louisiana, Arkansas, Tennessee, Mississippi, Michigan, Ohio, West Virginia, Virginia, Maryland, Pennsylvania, New York, New Jersey and Delaware.....	LL
130.2	California, Nevada, Utah, Colorado, Wyoming, Missouri, Illinois, Kentucky, West Virginia, Virginia, Maryland, Pennsylvania and New Jersey.....	HL
130.2	Texas, Louisiana and Florida..... (International)	HL