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CANADA

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

Agreement revising the technical annex to the agreement of October 24, 1962.
Effected by exchange of notes
Signed at Ottawa June 16 and 24, 1965;
Entered into force June 24, 1565.

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

EMBASSY OF THE
UNITED STATES OF AMERICA
No. 264 *Ottawa, June 16, 1965.*

EXCELLENCY:

I have the honor to refer to the Exchange of Notes dated October 24, 1962, [1] which contains an Agreement between the Government of Canada and the Government of the United States, on the subject of "Coordination and Use of Radio Frequencies Above 30 Megacycles per Second."

At a meeting held in Washington on October 1 and 2, 1964, the representatives of our two governments, after discussing the problem of frequency assignment and use, recommended that certain amendments be made in the Technical 'Annex to the said Agreement. These proposed amendments are embodied in the enclosed revision of the Technical Annex, and are acceptable to the Government of the United States. Under paragraphs (5) and (12)(b) of the 1962 Agreement amendments of the nature here involved can be made only by an Exchange of Notes.

Should the Government of Canada find that the said amendments are acceptable to it, I propose that this note and your reply concurring therewith constitute an Agreement between our two Governments to replace the Technical Annex appended to the 1962 Agreement by the enclosed revision thereof.

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

W. W. BUTTERWORTH

Enclosure:
Revision of Technical Annex

His Excellency
PAUL MARTIN, P.C. Q.C.,
Secretary of State for External Affairs,
Ottawa.

[1] TIAS 520.5; 13UST 2418.

EXCHANGE
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FREQUENCY

Item	Fr Ba
1	30. 56–
2	32. 00–
3	33. o-3
4 °	34. 0–3
5	35. o-3
6	36.0-3
7	37. o-3
8	38. o-3
9	39. o-4
10	40. 0–4
11	42. O-4
12	46. 6–4
13	47. o-4
14	49.6-5
15	72.0-7
16	74.6-7
17	75.4-7
18	108. 0–
19	117.97
20	121.97
21	123.07
22	123.57

AMENDING ANNEX TO THE TECHNICAL ANNEX TO THE

EXCHANGE OF NOTES OF OCTOBER 24, 1962 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	32.00-33.0	IRAC	DOT	Arrangement D
3	33. O-34. 0	FCC	DOT	Arrangement A
4	34. o-35. 0	IRAC	DOT	Arrangement D
5	35. O-36. 0	FCC	DOT	Arrangement A
6	36. O-37. 0	IRAC	DOT	Arrangement D
7	37. 0–38. 0	FCC	DOT	Arrangement A
8	38.0-39.0	IRAC	DOT	Arrangement D
9	39. 040. 0	FCC	DOT	Arrangement A
10	40. 042. 0	IRAC	DOT	Arrangement D
11	42.0-46.6	FCC	DOT	Arrangement A
12	46. 647. 0	IRAC	DOT	ITU RR 228
13	47. 049. 6	FCC	DOT	Arrangement A
14	49.6-50.0	IRAC	DOT	ITU RR 228
15	72. O-73. 0	FCC	DOT	Arrangement A
16	74.6-75.4	FAA	DOT	Arrangement B
17	75.4-76.0	FCC	DOT	Arrangement A
18	108. o-117.975	FAA	DOT	Arrangement B
19	117.975-121.975	FAA	DOT	Arrangement B
20	121. 975–123. 075	FCC	DOT	Arrangement B
21	123.075-123.575	FCC	DOT	Arrangement B
22	123. 575–128. 825	FAA	DOT	Arrangement B

Item	Frequency Bands Mc/s	Authorized Coordination Agencies or Channels U.S.	Canada	Coordination Arrangements and Remarks
23	128. 825–132. 025	FCC	DOT	Arrangement B
24	132. 025-136. 0	FAA	DOT	Arrangement B
25	138.0-144.0	JCS	CDS*	Arrangement C
26	148.0-149.9	IRAC	DOT	Arrangement D
27	148.0-149.9	JCS	CDS*	Arrangement C
28	150.05-150.8	IRAC	DOT	Arrangement D
29	150. 05–150. 8	JCS	CDS*	Arrangement C
30	150. 8-174.0	FCC	DOT	Arrangement A
31	162.0-174.0	IRAC	DOT	Arrangement D
32	216. O-225. 0	JCS	CDS*	Arrangement C
33	328. 6–335. 4	FAA	DOT	Arrangement B
34	420. O-450. 0	JCS	CDS*	Arrangement C
35	450. 0–470. 0	FCC	DOT	Arrangement A
36	890.0-942.0	JCS	CDS*	Arrangement C
37	942. 0–960. 0	FCC	DOT	Arrangement A
38	960.0-1215. 0	FAA	DOT	Arrangement B
39	1215. O-1400.0	JCS	CDS*	Arrangement C
40	1300. o-1350.0	FAA	DOT	Arrangement C
41	1535.0-1540.0			Coordination not required at this time
42	1540. O-1660. 0	IRAC	POT	Arrangement B
43	17 10. 0–1850. 0	IRAC	DOT	Arrangement D
44	1850. 0–2200. 0	FCC	DOT	Arrangement A
45	2110. 0–2120. 0	IRAC	DOT	Arrangement D
46	2200.0-2290.0	IRAC	DOT	Arrangement D
47	2300.0-2450. 0	JCS	CDS*	Arrangement C
48	2450.0-2690. 0	FCC	DOT	Arrangement A
49	2700. O-2900. 0	FAA	DOT	Arrangement C
50	2700. o-3700. 0	JCS	CDS*	Arrangement C
51	2900. 0–3100. 0	IRAC	DOT	Arrangement C
52	3700. o-4200. 0	FCC	DOT	Arrangement A
53	4200. o-4400. 0	IRAC	DOT	Arrangement B
54	4400.0-4990.0	IRAC	DOT	Arrangement D
55	5000. o-5250. 0	IRAC	DOT	Arrangement B
56	5250. O-5925. 0	JCS	CDS*	Arrangement C
57	5460. O-5650. 0	IRAC	DOT	Arrangement C
58	592.5. 0–7125. 0	FCC	DOT	Arrangement A
59	7125. 0–8400. 0	IRAC	DOT	Arrangement D
60	8400. 0–8500. Cl			Coordination not required at this time
61	8500. O-10500. 0	JCS	CDS*	Arrangement C
62	9000.0-9200.0	FAA	DOT	Arrangement C
63	9300. O-9500.0	IRAC	DOT	Arrangement C

***CDS – Chief of Defence Staff – Authorized Coordination Channel only.**

TIAS 5833

Item	Fr Ba Gc/s
64	10.55
65	10. 70-
66	13.25
67	13. 4-
68	14. 0–
69	15. 4–
70	15. 7–
71	17. 7–
72	23. 0–
73	24. 25
74	33. 4–
75	36.0 ε

***CDS –C**

Item	Frequency Bands Mc/s	Authorized Coordination Agencies or Channels U.S.	Canada	Coordination Arrangements and Remarks
	Gc/s			
64	10.55–10.68	FCC	DOT	Arrangement A
65	10.70-13.25	FCC	DOT	Arrangement A
66	13.25–13.4			Coordination not required at this time
67	13.4-14.0	JCS	CDS*	Arrangement C
68	14.0-15.4			Coordination not required at this time
69	15.4-15.7	IRAC	DOT	Arrangement B
70	15.7-17.7	JCS	CDS*	Arrangement C
71	17.7-23.0			Coordination not required at this time
72	23.0-24.25	JCS	CDS*	Arrangement C
73	24.25-33.4			Coordination not required at this time
74	33.4-36.0	JCS	CDS*	Arrangement C
75	36.0 and above			Coordination not required at this time

***CDS – Chief of Defence Staff – 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 and Washington, D.C., October, 1964)

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

Mc/s	Mc/s	Mc/s
30.56 – 32.00	75; 40 – 76.00	1850.0 – 2200.0
33.00 – 34.00		2450.0 – 2690.0
35.00 – 36. 00		3700.0 – 4200.0
37.00 – 38.00		5925.0 – 7125.0
39.00 – 40. 00	150.80 – 174. 00	
42. 00 – 46. 60	450.00 – 464.725	
47.00 – 49.60	465.275 – 470.00	
72. 00 – 73.00	942.00 – 960. 00	

Gc/s

10.55 – 10.68 10.70 – 13.25

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

Mc/s	Mc/s	
156.3	156. 7	157.20
156.35	156. 8	157.25
156.4	156.9	157.30
156.45	156.95	157.35
156.5	157.0 and 161.6	157.40
156. 55	157.05	
156.6	157. 1	
1 5 6 . 6 5	157.15	

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(c) Assignments proposed in accordance with the railroad industry radio frequency allotment plan along the United States-Canada borders 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 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, 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 Sear-sport, 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 all stations using bands between 470 Mc/s and 1000 Mc/s; and for any station of a terrestrial service using a band above 1000 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) The area in either country within coordination distance (paragraph 7) 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 7) of the earth station.

3. (a) Each Agency shall furnish the other with a complete frequency assignment record, including, among the basic characteristics reported, the date of first usage of each frequency by each of the statious 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, nnd 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, [1] as amended by the EARC, Geneva 1963, [2] each Agency shall use these frequency records, in lieu of subsequent I.T.U. records, in

[1] TIAS 4893; 12 UST 2377.
[2] TIAS 5603; 15 UST 887.

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 in paragraphs 2(a), 2(b)(l) and 2(b)(2) 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, 4 or 5 as nppropriate), 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.

(b) Before the Department of Transport takes final action on any application for the use of sny frequency in the bands herein, in the areas stipulated in paragraphs 2(a), 2(b) (1) and 2(b)(2) above involving an effective radiated power in excess of five watts, or if protection is desired for nn operation involving power of five watts, or less, it will refer the pertinent particulars of the proposed assignment (see Appendix 3, 4 or 5 as appropriate), in the form shown in Appendix 2 hereof, to the Federal Communications Commission for comment as to whether the granting 0f an authorization will be likely to result in the causing of harmful interference to any existing United States assignments authorized by the Commission.

(c) Before either Agency takes finnl action on any application for use of any frequency in the bands herein which nre allocated to a space service, in the area stipulated in paragraph 2(b)(3) above, regardless of the power involved, it will refer the pertinent particulars of the proposed assignment (see Appendix 3, 4 or 5 as appropriate), in the applicable form shown in Appendix 1 or 2 hereof, to the other Agency for comment as to whether the granting of an authorization will be likely to result in the degrading of the previously agreed protection to a receiving earth station.

(d) 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 transmission 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 plnnned use of the spectrum, information concerning future espansions and adjustments of the several services allocated to use the above bands, in the areas stipulated above, shnll be exchanged to the maximum extent practicable.

7. 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 A

FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

AIRMAIL

Director, Telecommunications and Electronics Branch
OTTAWA, Ontario

In reply refer to 6150 –
Serial
Date:

sir:

This office has received an application for radiocommunication 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 LAT. N., LONG. W.	FREQ. (MC/S)	MEAN POWER TO ANTENNA (WATTS)	EMISSION	ANTENNA GAIN & AZIMUTH	ANTENNA HEIGHT IN FT. ABOVE M.S.L.	ANTENNA ELEVATION ANGLE DEGREES

Additional Information :

Secretary
FEDERAL COMMUNICATIONS COMMISSION

COMMENTS with regard to application:

DIRECTOR, TELECOMMUNICATIONS and ELECTRONICS BRANCH

TIAS 5833

APPENDIX 2 TO ARRANGEMENT A

AIR SERVICES
TELECOMMUNICATIONS AND
ELECTRONICS BRANCH

DEPARTMENT OF TRANSPORT
OTTAWA

Federal Communications Commission
Washington, D.C. 20554

Serial_____
Date:

Sirs :

This office has received an application for radiocommunication 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 LAT. N., LONG. W.	FREQ. (MC/S)	MEAN POWER TO ANTENNA (WATTS)	EMISSION	ANTENNA GAIN & AZIMUTH	ANTENNA HEIGHT IN FT. ABOVE M.S.L.	ANTENNA ELEVATION ANGLE DEGREES

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 antennn
i. Antenna gain (db) and azimuth, when avnilable
j. Antenna elevation in feet above mean sea level (MSL)

APPENDIX 4 TO ARRANGEMENT A

BASIC DATA REQUIRED FOR COORDINATION OF STATIONS OF THE FIXED SERVICE AND MOBILE SERVICE IN 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 receiving stations at fixed locations
g. Class of emission nnd necessary bandwidth
b. Power (mean) delivered to the antenna
1. Antenna gain (db) and azimuth, and elevation angle when available
j. Antenna elevation in feet above mean sea level (MSL)

45-530 O—66—Vol. 16, Pt. 1—60 TIAS GS33

k. Polarization of transmitted wave

1. Topographic map of territory between stations at fixed locations and Canada-U.S. borders (required only for stations within the coordination distance-of a previously coordinated receiving earth station using the same band)

APPENDIX 5 TO ARRANGEMENT A

BASIC DATA REQUIRED FOR COORDINATION OF EARTH STATIONS IN THE SPACE SERVICE

a. Operating agency

b. Class of station

C. Frequencies

d. Location and coordinates

e. Azimuthal and elevation coverage of celestial hemisphere as defined by main axis of antenna

f. Class of emission and necessary bandwidth

g. Power (mean) delivered to the antenna and, where applicable, estimated terminal coupling losses

h. Maximum gain of antenna in the horizontal plane as a function of azimuth

1. Maximum gain of antenna (referred to isotropic)

j. Antenna elevation in feet above mean sea level (MSL)

k. Polarization of transmitted wave

1. 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

m. Numerical values of terrain shielding in the pertinent directions

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ARRANGEMENT B

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

(Adopted Ottawa, March 1962; Revised Washington, D.C., October, 1964)

1. This arrangement involves assignments in the frequency bands set forth in paragraph 8 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. In the interest of planned use of the frequency bands allocated for use of space techniques in the Aeronautical Mobile (R) and Aeronautical Radionavigation Services, information concerning assignments to stations using space techniques in these bands shall be exchanged to the maximum extent practicable. This will involve assignments for:

   a. All spacecraft; and

   b. Transmitting stations and receiving stations which use space techniques.

6. 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 the U.S. agencies concerned 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.

7. Neither the U.S. agencies concerned 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.

8. The bands treated and the agreed action on each are as follows:

FREQUENCY Band Mc/s	AUTHORIZED COORDINATION AGENCY U.S.	CANADA	REMARKS
74.60-75.40	FAA	DOT	Coordination not required at this time
108.0-l 17.975	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	FAA	DOT	SEE APPENDIX 4
328.6-335.4	FAA	DOT	SEE APPENDIX 1
960.0-1215.0	FAA	DOT	SEE APPENDIX 1
1540-1660	IRAC	DOT	Coordination not required at this time except for applications involving the use of space techniques.
4200-4400	IRAC	DOT	" "
5000–5250	IRAC	DOT	" "
15.4-15.7 Gc/s	IRAC	DOT	" "

NOTE "Coordination not requirctl 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 intcrfcrence.

TIAS 5833

APPENDIX 1 TO ARRANGEMENT B

RADIONAVIGATION 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 estent 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 coordinntion when used for emergency or distress and for SAR and scene of action functions. The frequency 121.6 Mc/s is excluded from coordinntion when used for SAR and scene of action functions.

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

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

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

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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 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 borders for Low-Level (LL) and Medium-Level (ML) operations and 600 NM of the borders for High-Level (HL) operntions, 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 pnrt 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 operat ionnl 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 B

AERONAUTICAL 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 directions1 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.

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(Adopted Ott
October, **1964)**

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ARRANGEMENT C

ARRANGEMENTFOR FREQUENCY COORDINATION OFFIXED 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. Mobile radar assignments are not subject to this arrangement.

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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)

Mc/s	Mc/s	Mc/s
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) Mc/s

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 l(a), in the areas stipulated in paragraph 2:

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(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 hnving 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 nntennn
f. Clnss 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 Stntes borders (required only for stations within the coordination distance of a previously coordinated receiving earth station which uses the snme 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

DEPARTMENTOF EXTERNAL AFFAIRS — MINISTÈRE DESAFFAIRES EXTÉRIEURES

CANADA

No. 77 — Ottawa, *June S&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 oj State for External Affairs.

His Excellency W. Walton Butterworth,
Ambassador,
Embassy of the United States oj America,
Ottawa.