FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON 25, D.C.

Airmail

July 28, 1960

Address all Communications
to the Secretary

In reply refer to:
6155-F

Mr. F.G. Nixon
Director, Telecommunications &
Electronics Branch
Department of Transport
Ottawa, Canada

Dear Mr. Nixon:

This refers to your letter dated June 20, 1960, file 5868-1/5850-9-4, enclosing four copies of the Canadian Railroads Radio Frequency Assignment Plan, which referred to the Commission's letter of March 25, 1960, file 6155-F, and previous correspondence concerning frequency plans for the Railroad Radio Service in the United States and Canada.

It is believed that the plans of the Association of American Railroads (AAR) and the Railway Association of Canada are mutually compatible and represent, as applicable, the coordinated frequency assignments of each country. Further, there is no objection to these plans being used as the basis for priority in the use of frequencies by essential, existing and proposed railroad operations in the band 160.215 - 161.565 Mc, subject to future changes as may be necessary and provided such changes are coordinated with the other country prior to inclusion in the plan concerned.

While the above arrangement is less formal than that suggested in paragraph 2*a* of your letter, it is hoped that it will meet your objectives even though your suggestion for a priority period of three years is not concurred in. The reason for this deviation from your suggestion is that, before such priority could be afforded the respective plans by the Commission, it is believed it would be necessary to propose rule making to incorporate the AAR frequency assignment plan into the Commission's Rules and Regulations, which would probably reduce greatly the flexibility now existing with respect to modifying the AAR plan. In view of the compatibility of the two plans, no problems should arise in the 160.215 - 161.565 Mc band that could not be easily resolved by the AAR and the Railway Association of Canada through their present joint frequency coordinating facilities.

The specific frequencies designated in your letter as channels A, B, C, OT and O are, as you probably know, allocated in the United States to the Motor Carrier Radio Service for the use of common or contract carriers of property, and their use between Lines A and B is still subject to the usual FCC/DOT coordination procedures for each frequency and location.

The suggestion in paragraph 2*c* of your letter is concurred in noting that, in principle, it is embodied in the suggestion appearing in paragraph 2 above.

It is hoped that the foregoing will meet with your approval. However, should you wish to discuss any or all portions of this matter further, your comments will be welcomed.

Very truly yours,

Ben F. Waple
Acting Secretary

FGP:M1
5868-1
5850-9-4

June 20, 1960

Dear Sir:

I wish to refer to your letter of March 25, 1960 and previous correspondence concerning frequency plans for the Railroad Radio Service in the United States and Canada, and am enclosing four copies of the Canadian railroads plan.

The plans of the Association of American Railroads and the Railway Association of Canada for the frequency band 160.215-161.565 Mc/s have been examined and I would confirm that they appear to be compatible and acceptable in principle. I would suggest that the FCC and DOT accept these plans on the understanding:

(*a*) The plans to be recognized as the basis for priority in the use of frequencies by essential, existing and proposed railroad operations in the band 160.215-161.565 Mc/s for a period of not more than three years when the plans will be reviewed to determine the actual usage by the railroads of this land and whether or not the continuance of such priority is justified. The three year period to commence from the date when the FCC inform the DOT of acceptance of the plans;

(*b*) The planned use of frequencies not within the band 160.215-161.565 Mc/s by the railroads of either country be co-ordinated individually and the frequencies involved shall not be considered as part of the overall plans accepted, e.g., the *Canadian Railroads Radio Frequency Assignment Plan* includes reference to channels A, B, C, OT and O (159.810, 159.930, 160.050, 160.185, 160.200 Mc/s) which would be subject to the normal frequency assignment co-ordination procedure (FCC/DOT) for each frequency and location;

(*c*) No basic change to be made in the accepted railroads plans without prior co-ordination between the FCC and the DOT, except for areas remote from the USA/Canada border where harmful interference to railroads operations of the other country is not anticipated. Any proposed changes in the planned use of frequencies, in the band 160.215-161.565 Mc/s, by the railroads in such areas to be exempt from the FCC/DOT normal co-ordinating practice relating to railroads planning.

I would appreciate receiving your comments concerning the possibility of acceptance of the railroads plans on the basis indicated.

Yours truly,

(F.G. Nixon)
Director,
Telecommunications and
Electronics Branch.

Encl.

Acting Secretary
Federal Communications Commission
Washington 25, D.C. , U.S.A.

CANADIAN RAILROADS
RADIO FREQUENCY ASSIGNMENT PLAN
FOR
30 KILOCYCLE NARROW-BAND ASSIGNMENTS

SUBMITTED TO

THE DEPARTMENT OF TRANSPORT BY
RAILROAD, HIGHWAY AND TRANSIT UTILITIES COMMITTEE OF
THE CANADIAN RADIO TECHNICAL PLANNING BOARD

APPROVED BY

THE RAILWAY ASSOCIATION OF CANADA

JANUARY 1, 1960

CONTENTS:

CANADIAN RAILROADS RADIO FREQUENCY ASSIGNMENT PLAN

As a result of the continually increasing demands for space in the radio spectrum, and the development of radiotelephone equipment capable of operating in narrow channel bandwidths, the Railway Association of Canada, as part of the Railroad, Highway and Transit Utilities Committee of the Canadian Radio Technical Planning Board, has completed a further study of Railroad requirements. A revised *Canadian Railroads Radio Frequency Plan,* superseding the present plan dated July 1953, and reducing the total frequency space requirement, is herewith submitted for consideration to the Department of Transport.

General Requirements

Co-ordination of a band of consecutive channels for railroad communications affords several major advantages. Such an arrangement allows more efficient utilization of the space, more methodical expansion of service, and greater opportunity for co-operation in voluntarily eliminating interference problems. Relatively low power transmitters (seldom over 30 watts), use of directional antennas at fixed stations, and the appreciation of each other's operating problems ensure the voluntary solution of most interference problems by the railways themselves.

Secondly, since Canadian and U.S.A. railroads operate up to or across the International Border in numerous locations, and at times obtain running rights on foreign lines, close co-ordination of radio assignments in Canada and the United States is essential.

With the growth of radio, and the need for conserving spectrum space, railroads in both countries have studied the proposal to reduce channel bandwidth from 60 Kc/s to 30 Kc/s. The Canadian railroads are in favour of reducing channel spacing to one half, but propose some additional channels to handle further requirements which have developed over the past five years.

As a result of informal discussions with the Railroads in the United States (AAR), it is suggested that Canadian Railroads avoid the use of any of the original frequencies (Primary), and the 30 Kc/s intermediate (Secondary) frequencies, and as far as possible use mid-frequencies between these groups (i.e. Tertiary) in border areas. In making this proposal and eliminating those maritime frequencies as directed by the Department of Transport, it is recommended that the original railway channels 6, 8 and 10 may be retained for satellite purposes in remote locations and for low power yard functions. These assignments would also be retained by certain railroads in remote areas where congestion is not likely to develop and also where modification of relatively large installations is hardly justified.

The inter-spacing of frequency assignments between the United States and Canada along the border affords a very useful factor in reducing the interference zone. In considering the use of tertiary channels by Canada, data on the following factors was considered:

(1) Number of units in border area systems operating on present channels 1 to 12 and 36 to 39 which will have to be modified if the reduced band is approved.

(2) Number of units in Canadian or United States systems operating on channels 13 to 35 which would have to be reassigned if either country accepts tertiary frequencies assuming the new frequency band is accepted.

(3) In recommending that the Canadian Railroads accept the tertiary assignments it is requested that the department consider leaving the original channels 6, 8 and 10 for railroad operation as indicated. Assuming item (3) has general approval, the number of Canadian units involved particularly in mainline operation and requiring frequency modification is small compared to that of the United States. It is recommended that this general arrangement be adopted. In the case of various railroads crossing the border some minor exceptions to this rule have been necessary.

Effective Date of Changeover

This proposal has been developed concurrently with plans of the Association of American Railroads for submission to their legislative organizations. Minor adjustments in either the Canadian or United States proposals may be necessary to eliminate interference in small areas.

On main-line systems, when the decision is made to install narrow band equipment, the modifications must be completed with the minimum of delay. It is therefore suggested that this changeover be co-ordinated in the border areas with an elapsed time of about 5 years from date of approval of the frequency plan and that railways in remote areas be allowed to continue on the present assignments on a non-interfering basis if desired.

Railroad Systems

Installation of radio on main-line trains has progressed rapidly on four of the medium-sized railroads. On the two larger railways with nation-wide operation, main-line radio installation on a partial basis is not advisable. Because of the scope of these projects, yard and switching systems have been placed in service first, and extensive main-line studies of radio, as applied to train operation, are now being completed by these two organizations.

Summarizing data obtained in a recent questionnaire, the number of stations in operation and in the planning stage are as follows:

	EE & PT	Y & T	Fixed
Operating	299	111	48
Planned	8079	419	582

Applications for Railroad Radio

Since the initiation of the 1953 Railroad Radio Plan, operating experience has indicated other functions where radio is useful. These include ship docking, where railroads' tugs and ferries handle bulk freight, "Piggy Back" flat cars and freight cars, and also satellite stations within marshalling yards or in difficult mountainous terrain, to provide contact between two mobile units. Railroad radio functions are summarized as follows:

Functions Involving Safety of Main-Line Trains

(1) **End-to-End** (EE) In this type of service radio communication between the engine and the caboose of trains, particularly long freight trains, and radio communication from one train to another is contemplated. For this service both the engine and the caboose will normally be equipped with a transmitter and a receiver, adjusted for operation on the same frequency.

It is proposed to provide each Railway with a clear channel assignment for this type of service throughout its entire territory.

(2) **Point-to-Train** (PT) In making assignments for point-to-train radio communication, it was contemplated that the frequencies assigned for this service would be used at fixed points along the railroad right-of-way for communication with moving trains. Two channels have been assigned to the larger railways to handle train operation of closely paralleled lines or in the vicinity of large centres.

(3) **Satellite** (S) Provision has been made for satellite stations on main-line sections in difficult or mountainous terrain where direct End-to-End, Train-to-Train, or Point-to-Train contact cannot be established without an intermediate station.

A similar function is necessary in large yards to provide communication between two low power portable units operating across a number of tracks of freight cars.

Functions Involving a Degree of Safety on Main-lines

(4) **Utility** (U) This would provide communication for work trains, construction, and maintenance crews.

Functions Adjacent to Main-Line Operation

(5) **Yard** (Y) Yard assignments provide radio communication between fixed stations in the yard and yard locomotives within the yard area. In large centres, two railroad yards in close proximity, or an east and west hump or classification yards operating simultaneously, will require separate frequencies.

Low power portable units interconnected across rows of freight cars by use of a satellite repeater are proving essential (See "S" and "W"). Radio is normally avoided where possible by loudspeaker calling; however, in many areas heavy snow requiring the use of snow removal equipment makes paging speaker installations impractical in the close-laid trackage of yard systems.

(6) **Terminal** (T) In terminal operation, a radio service from a fixed station in a terminal area to switching engines working throughout the area is contemplated. In general, a terminal fixed station, or multiple stations where necessary, will communicate over an area of not more than 35 miles in diameter.

(7) **Ship Docking** (D) Several Canadian Railroads operate fleets of tugs, ferries and cargo ships. Radio communication between these vessels, the terminal dock, and switch engines would provide an important means of control. In view of the operating benefits and ease of maintenance, it is recommended that allocations for this service be made in the Railroad band on condition that vessels first comply with Maritime Radio policy before using mobile VHF. (Provision has been made on several American lines for such a function, which in no way replaces or overlaps maritime equipment and regulations.)

(8) **Car Checking** (W) Low power portable units provide a service for car checking, switching and special functions in large marshalling yards (trimming trains, routing special cars, "bad order" cars, etc.). (Walkie-Talkies on through freights would be operated on the EE channel.)

(9) **Special Associated Services** (M) Railroads provide a number of associated services which must be integrated with railway operations. Such operations where mobile radio will improve efficiency of operation include:

(1) Handling of stores stock and repair parts in large yard and building depots.

(2) Handling motor coach operations in areas where such service is provided by the railways.

(3) Communications for Railway Investigation (Police) Department where secrecy equipment may be considered advisable.

While it is not advisable to combine these operations with the majority of train operations in planning railroad radio communications, every consideration would be given to the combination of services wherever feasible to conserve frequencies and use assigned channels most efficiently.

January 1, 1960

CANADIAN RAILROADS RADIO FREQUENCY ASSIGNMENT PLAN

Canadian Railroads allocated a total of 94 frequencies consisting of:

(*a*) 3 30KC channels designated A, B, C, (present channels 6, 8, 10) Ref. Note 2.

(*b*) 45 15KC channels spaced 30KC apart and numbered 0, 1, 2, 3, ...44 Ref. Note 4.

(*c*) 46 15KC channels spaced 30KC apart and 15KC from frequencies in (*b*) above and numbered 0T, 1T, 2T, ...45T. Ref. Note 3.

Available Frequencies

Channel Number	Frequency Megacycles	Channel Number	Frequency Megacycles
A	159.810 (6)	16T	.665
B	159.930 (8)	16	160.680
C	160.050 (10)	17T	.695
0T	160.185	17	160.710 (21)
0	160.200	18T	.725
1T	160.215	18	160.740
1	160.230 (13)	19T	.755
2T	.245	19	160.770 (22)
2	160.260	20T	.785
3T	.275	20	160.800
3	160.290(14)	21T	.815
4T	.305	21	160.830 (23)
4	160.320	22T	.845
5T	.335	22	160.860
5	160.350 (15)	23T	.875
6T	.365	23	160.890 (24)
6	160.380	24T	.905
7T	.395	24	160.920
7	160.410 (16)	25T	.935
8T	.425	25	160.950 (25)
8	160.440	26T	.965
9T	.445	26	160.980
9	160.470 (17)	27T	.995
10T	.485	27	161.010 (26)
10	160.500	28T	.025
11T	.515	28	161.040
11	160.530 (18)	29T	.055
12T	.545	29	161.070 (27)
12	160.560	30T	.085
13T	.575	30	161.100
13	160.590 (19)	31T	.115
14T	.605	31	161.130 (28)
14	160.620	32T	.145
15T	.635	32	161.160
15	160.650 (20)	33T	.175

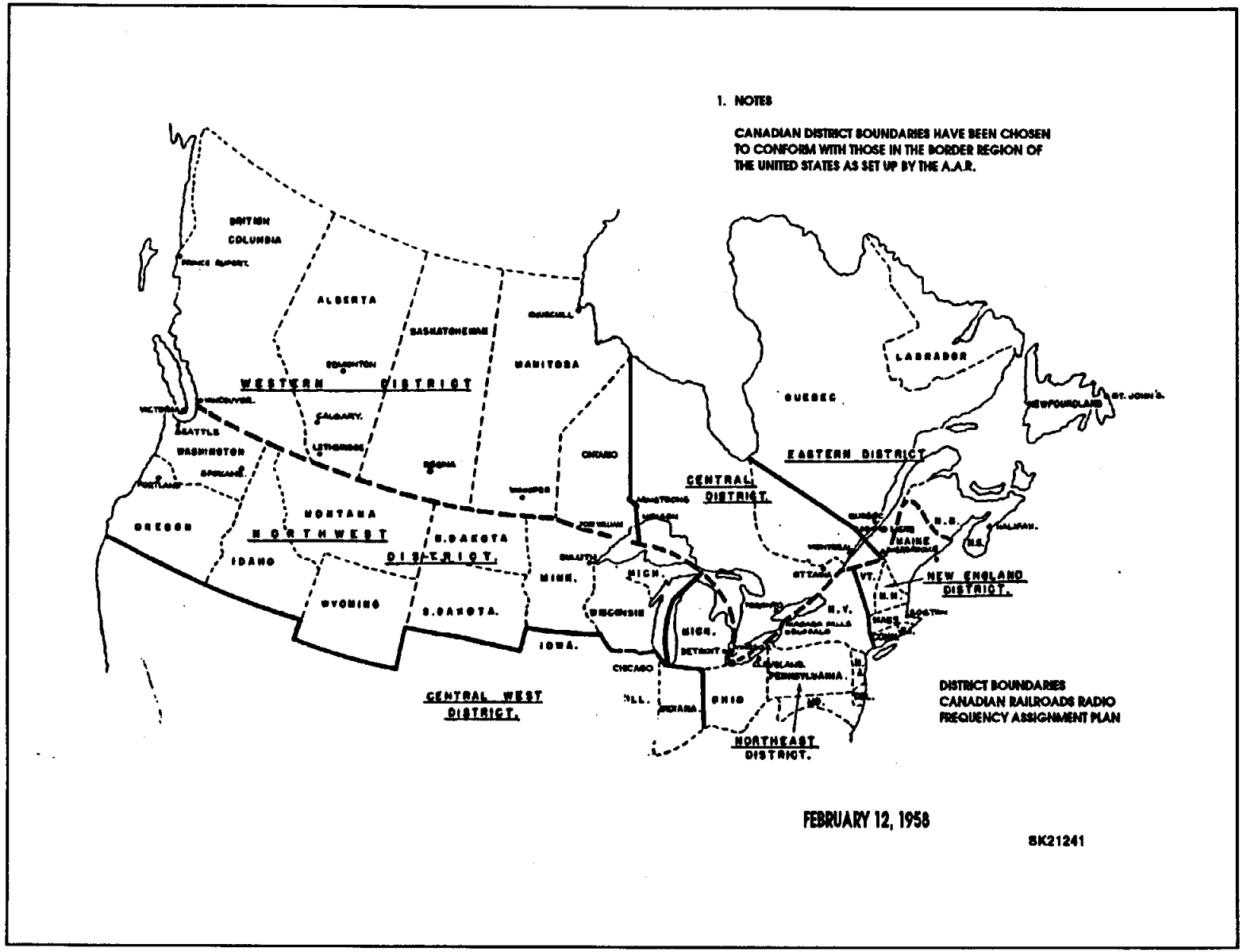
Channel Number	Frequency Megacycles	Channel Number	Frequency Megacycles
33	161.190 (29)	39	161.370 (32)
34T	.205	40T	.385
34	161.220	40	161.400
35T	.235	41T	.415
35	161.250 (30)	41	161.430 (33)
36T	.265	42T	.445
36	161.280	42	161.460
37T	.295	43T	.475
37	161.310 (31)	43	161.490 (34)
38T	.325	44T	.505
38	161.340	44	161.520
39T	.355	45T	.535

LEGEND

Safety	(EE = END-TO-END) (PT = POINT-TO-TRAIN) (D = SHIP DOCKING)
Operations	(T = TERMINAL) (Y = YARD) (W = CAR CHECKING) (M = MOTOR VEHICLE EXTENSIONS) (S = SATELLITE)
Maintenance	(U = UTILITY)

NOTES:

1. Present channel numbers are shown in brackets.
2. Channels A, B & C were selected in order to provide 3 well-spaced frequencies for satellite operation.
3. Canadian Railroads will have a total of 49 narrow channels usable in the same area in place of the 39 60KC channels now allocated. i.e., 3 channels A, B & C (Note 2) plus 46 channels listed in (*c*).
4. In border areas Canadian Railroads will in general use the Tertiary frequencies (*c*) while American Railroads will similarly use the Primary and Secondary frequencies (*b*).


1. NOTES
CANADIAN DISTRICT BOUNDARIES HAVE BEEN CHOSEN TO CONFORM WITH THOSE IN THE BORDER REGION OF THE UNITED STATES AS SET UP BY THE A.A.R.
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
LABRADOR
NEWFOUNDLAND
WESTERN DISTRICT
CENTRAL DISTRICT
EASTERN DISTRICT
WASHINGTON
OREGON
MONTANA
IDAHO
WYOMING
N. DAKOTA
S. DAKOTA
MINN.
IOWA
WISCONSIN
MICH.
ILL.
OHIO
PENNSYLVANIA
N.Y.
MAINE
VT.
N.H.
NEW ENGLAND DISTRICT
NORTHWEST DISTRICT
CENTRAL WEST DISTRICT
NORTHEAST DISTRICT
DISTRICT BOUNDARIES
CANADIAN RAILROADS RADIO
FREQUENCY ASSIGNMENT PLAN
FEBRUARY 12, 1958
SK21241

EASTERN DISTRICT			CENTRAL DISTRICT					WESTERN DISTRICT		
Railroad	Service	All areas	Except metro areas	Montreal area	Toronto area	Niagara area	Windsor area	Except metro areas	Winnipeg area	Vancouver area
1	2	3	4	5	6	7	8	9	10	11
C.P.R.	EE	43T	43T	43T	43T	43T	43T	43T	43T	43T
	PT	44T, 45T	44T, 45T	44T, 45T	44T, 45T	44T, 45T	44T, 45T	44T, 45T	44T, 45T	44T, 45T
	T	38T, 39T	38T, 39T	36T, 38T, 39T	36T, 38T, 39T	38T, 39T	38T, 39T	38T, 39T	38T, 39T	38T, 39T
	Y	27T, 31T, 32T	31T, 32T	27T, 31T, 32T	27T, 31T, 32T	36T, 32T	36T, 32T	31T, 32T	27T, 31T, 32T	27T, 31T, 32T
	W	19T, 21T	18T, 19T, 21T(k)	18T, 19T, 21T	18T, 19T, 21T	19T, 21T	19T, 21T	18T, 19T, 21T(j)	19T, 21T	18T, 19T, 21T(j)
	U	33T	33T	33T	33T	33T	33T	33T	33T	33T
	M	22T, 23T	22T, 23T	22T, 23T	22T, 23T	22T	22T	22T, 23T	22T, 23T	22T, 23T
	S	B, C, 8T, 5T	B, C, 8T, 5T	B, C, 8T, 5T 2T, 3T	B, C, 8T, 5T , 2T 3T	B, C	B, C	B, C, 8T, 5T	B, C, 8T, 5T	B, C, 8T, 5T
	D	0T		0T				0T		0T
C.N.R.	EE	41T	41T	41T	41T	41T	41T	41T	41T	41T
	PT	34T, 42T	34T, 42T	34T, 42T	34T, 42T	34T, 42T	34T, 42T	34T, 42T	34T, 42T	34T, 42T
	T	37T, 40T	37T, 40T	35T, 37T, 40T	35T, 37T, 40T	37T, 40T	37T, 26T	37T, 40T	37T, 40T	37T, 40T
	Y	26T, 28T, 29T	26T, 28T	26T, 28T, 29T	26T, 28T, 29T	26T, 28T	26T, 40T	26T, 28T	26T, 28T, 29T	26T, 28T, 29T
	W	16T, 20T	16T, 20T	16T, 17T, 20T	16T, 17T, 20T	16T, 20T	16T, 20T	16T, 20T	16T, 20T	16T, 20T
	U	30T	30T	30T	30T	30T	30T	30T	30T	30T
	M	24T, 25T	24T, 25T	24T, 25T	24T, 25T	25T	25T	24T, 25T	24T, 25T	24T, 25T
	S	A, 10T, 1T, 9T	A, 10T, 1T, 9T	A, 10T, 1T, 9T 7T, 4T	A, 10T, 1T, 9T 7T, 4T	A, 10T	A, 10T	A, 10T, 1T, 9T	A, 10T, 1T, 9T, 7T	A, 10T, 1T, 9T
	D	6T	6T	6T			6T	6T		6T
HARBOUR COMMISSIONS		11T	11T	11T	11T					
ALGOMA CENTRAL & HUDSON BAY RLY.	EE & PT		11							
	T & Y		35T, 36T							
	W & U		21T, 27T							
	S		2T, 4T							
	M		14T							
	D		13T							
ALMA & JONQUIERE RLY.	EE & PT	18T, 19T								

Double underlined channels:

Receive full protection from United States Railroads.

Single underlined channels:

Receive base station protection by cooperative arrangement with United States Railroads.

Underlined channels:

When necessary, appropriate measures to protect Canadian Railroad Radio stations shall be taken by American Railroads using adjacent primary and secondary channels 15 kc removed from the underlined Canadian assignments. Appropriate clauses to this effect are included in the U.S. Assignment Plan. Similar measures to protect adjacent American assignments shall be taken by Canadian railroads using other than underlined channels. This requirement is applicable only where a geographic separation of less than 35 miles exists between American and Canadian Railroad Radio systems.

	EASTERN DISTRICT		CENTRAL DISTRICT	
Railroad 1	**Service** 2	**All areas** 3	**Except Metro Areas** 4	**Montreal Area** 5
BRITISH COLUMBIA ELECTRIC RLY.	EE & PT T & Y M S			
CANADA & GULF TERMINAL RLY.	EE & PT T & Y	18T 19T, 21T		
CENTRAL VERMONT RLY.		In corporate relationship with CNR		
DOMINION ATLANTIC RLY.		CPR Subsidiary		
DULUTH, WINNIPEG & PACIFIC RLY.		In corporate relationship with CNR		
ESSEX TERMINAL RLY.	EE & PT			
GRAND FALLS CENTRAL RAILWAY	EE & PT T & Y	36T 13T, 19T		
GRAND RIVER & LAKE ERIE & NORTHERN RLY.		C.P.R. Subsidiary		
GREAT NORTHERN RLY.	EE & PT Y & W			
LAKE ERIE & DETROIT RIVER RLY. (C & O)	EE & PT T & Y W & U		7, 37 3, 15T 12T, 13T	
LONDON & PORT STANLEY RLY.	EE & PT T & Y		6T 18T	
MARITIME COAL RLY. & POWER CO.	EE & PT T & Y	21T 38T, 39T		
MIDLAND RLY. OF MANITOBA		Channels to be assigned on request		
NAPIERVILLE JCT. RLY.	EE & PT			11, 13
NEW YORK CENTRAL RR.	EE PT T Y W		29 31 14T, 17T 14T, 17T 2T, 3T, 27T, 29T	
NORTHERN ALBERTA RLY.	EE & PT T & Y W & U			
ONTARIO NORTHLAND RLY.	EE & PT T & Y W & U M S D		35, 37T(*a*) 27T, 29T, 30T(*b*), 39 11, 22T 8T, 9T 4T, 5T 22	

CENTRAL DISTRICT (continued)			WESTERN DISTRICT		
Toronto area 6	Niagara area 7	Windsor area 8	Except metro areas 9	Winnipeg area 10	Vancouver area 11
			3T, 11T 12T, 14(*l*) 3T, 11T 3T, 11T		3T, 11T 12T, 14(*l*) 3T, 11T 3T, 11T
		24T			
					15 13, 20T(*h*)
	7, 37 3, 15T 12T, 13T	7, 37 3, 15T 12T, 13T			
	29 31 14T, 17T 14T, 17T 2T, 3T, 27T, 29T	29 31 14T, 17T 14T, 17T 2T, 3T, 27T, 29T			
			3T 11T, 12T 21, 23		

Underlined Channels - See note page 15

	EASTERN DISTRICT		CENTRAL DISTRICT	
Railroad 1	Service 2	All areas 3	Except Metro Areas 4	Montreal area 5
PACIFIC GREAT EASTERN RLY.	EE & PT T & Y W & U M S			
QUEBEC CENTRAL RLY.		C.P.R. Subsidiary		
QUEBEC NORTH SHORE & LABRADOR RLY.	EE & PT T & Y W & U M S D	A, 1T B, 3, 5T, 8T 9, 13T 12T 43T, 45T 6T, 17T	6T	
QUEBEC RLY. LIGHT & POWER CO.		C.N.R. Subsidiary		
ROBERVAL & SAGUENAY RLY.	EE & PT T & Y	27T 31T, 32T		
SYDNEY & LOUISBURG RLY.	EE & PT T & Y	5T 4T, 7T, 8T		
TORONTO,HAMILTON & BUFFALO RLY.		In corporate relationship with C.P.R.		
WABASH RAILROAD	EE PT T & Y W		41T(*c*) 34T(*c*), 42T(*c*) 28T(*d*), 7T 20T(*e*), 11T	

NOTES:

(*a*) Channel 37T, Ontario Northland Rly. EE&PT frequency shared with C.N.R., C.N.R. to use Channel 40T in lieu of channel 37T at North Bay, Cochrane and Noranda.

(*b*) Channel 30T, Ontario Northland Rly. T&Y frequency shared with C.N.R., O.N.R. to avoid the use of Channel 30T at North Bay Cochrane and Noranda.

(*c*) Channels 41T, 34T and 42T C.N.R. EE&PT frequencies shared with Wabash R.R. between Niagara and Windsor.

(*d*) Channel 28T C.N.R. yard frequency shared with Wabash R.R.

(*e*) Channel 20T C.N.R. W frequency shared with Wabash R.R.

(*f*) Channel 14 Pacific Great Eastern Rly. W&U frequency shared with British Columbia Electric Rly.

CENTRAL DISTRICT (continued)			WESTERN DISTRICT		
Toronto area 6	Niagara area 7	Windsor area 8	Except metro areas 9	Winnipeg area 10	Vancouver area 11
			36T, 39 35T, 27I, 21T(*j*), 32T(*g*) 7I, 13T, 14(*f*) 4T 2I, 17I		36T, 39 35T, 27I(*l*), 21T(*j*), 32T(*g*) 7I, 13T, 14(*f*) 4T 2I, 17I
	41T(*c*) 34T(*c*), 42T(*c*) 7T, 28T(*d*) 20T(*e*), 11T	41T(*c*) 34T(*c*), 42T(*c*) 7T, 28T(*d*) 20T(*e*), 11T			

Underlined Channels - See note page 15

(*g*) Channel 32T Pacific Great Eastern Rly. T&Y frequency shared with C.P.R.
(*h*) Channel 20T Great Northern Rly. Y&W frequency shared with C.N.R.
(*l*) Channel 27T Pacific Great Eastern Rly. T&Y frequency shared with C.P.R.
(*j*) Channel 21T C.P.R. W frequency shared with Pacific Great Eastern Rly. C.P.R. to use Channel 18T in lieu of Channel 21T at Vancouver and Except Metro areas of Western District
(*k*) Channel 21T C.P.R. W frequency shared with Algoma Central & Hudson Bay Rly., C.P.R. to use Channel 18T in lieu of Channel 21T at Sault Ste. Marie and Franz.

SUPPLEMENT NO. 1

TO

CANADIAN RAILROADS

RADIO FREQUENCY ASSIGNMENT PLAN

FOR

30 KILOCYCLE NARROW-BAND ASSIGNMENTS,

DATED JANUARY 1, 1960

NOVEMBER 1, 1965

	EASTERN DISTRICT		CENTRAL DISTRICT	
Railroad 1	Service 2	All areas 3	Except Metro Areas 4	Montreal area 5
ARNAUD RLY.	EE & PT	C		
	Y	C, 6T		
	U	22		
CNR	D			
CPR	D			
GREAT NORTHERN RLY.	EE			
GREAT SLAVE LAKE RLY.	EE & PT			
GREATER WINNIPEG WATER	PT			
DISTRICT-RLY. DEPT.	Y			
	S			
LA COMPAGNIE DE	PT	31		
CHEMIN DE FER CARTIER	EE & Y	20		
	U	18		
MIDLAND RLY. OF MANITOBA	EE & PT			
	T & Y			
THURSO & NATION VALLEY RLY	PT		2T(*g*), 26T(*h*)	
TORONTO, HAMILTON AND	EE & PT		44T(*i*)	
BUFFALO RLY.	T & Y		36T	
	U		22T (*k*)	
VANCOUVER WHARVES LTD.	T			
WABUSH LAKE RLY.	EE & PT	C, B(*m*)		
	Y	C, 6T		
	U	22		
WHITE PASS & YUKON	EE, PT, Y			
ROUTE	S			

NOTES:

(*a*) Channel 6T CNR D frequency extended to cover the Toronto, Niagara and Winnipeg Areas for use in either D or T service.
(*b*) Channel 0T CPR D frequency extended to cover the Toronto, Niagara and Winnipeg Areas for use in either D or T service.
(*c*) Channel 15 Great Northern Rly. EE frequency extended to cover the Except Metro Areas of the Western District and the Winnipeg Area. Great Northern Rly. granted conditional authority to use this channel for EE service while operating on CNR trackage between the International Boundary and Winnipeg.
(*d*) Channels 41T and 34T CNR EE & PT frequencies shared with the Midland Rly. of Manitoba between Winnipeg and the International Boundary.
(*e*) Channel 6T CNR frequency, used in General Terminal Operations, shared with the Midland Rly. of Manitoba. Midland Rly. of Manitoba locomotives to use Channel 6T while operating on Canadian National trackage in Winnipeg.
(*f*) Channel 27T CPR Y frequency shared with the Midland Rly. of Manitoba. Midland Rly. of Manitoba locomotives to use Channel 27T while operating on Canadian Pacific trackage in Winnipeg.
(*g*) Channel 2T, CPR satellite frequency shared with T. & N.V.R., CPR to avoid the use of Channel 2T in the Thurso, Quebec area.
(*h*) Channel 26T, CNR yard frequency shared with T. & N.V.R., CNR to avoid the use of Channel 26T in the Thurso, Quebec area.
(*i*) Channel 44T CPR PT frequency shared with the Toronto Hamilton and Buffalo Rly.
(*j*) Channel 36T CPR Y frequency shared with the Toronto Hamilton and Buffalo Rly., CPR to avoid the use of Channel 36T in the Except Metro, Toronto and Niagara Areas of the Central District.

CENTRAL DISTRICT (continued)			WESTERN DISTRICT		
Toronto area 6	Niagara area 7	Windsor area 8	Except metro areas 9	Winnipeg area 10	Vancouver area 11
6T(*a*) 0T(*b*)	6T(*a*) 0T(*b*)			6T(*a*) 0T(*b*)	
			15(*c*)	15(*c*)	
			18T, 20T, 39T, 41T		
			167.67, 169.59	167.67, 169.59	
			167.67, 169.59	167.67, 169.59	
			167.07, 168.96	167.07, 168.96	
			41T (*d*), 34T(*d*)	41T(*d*), 34T(*d*)	
			12T	6T(*e*), 12T, 27T(*f*)	
	44T (*l*) 36T(*j*) 22T(*k*)				
					8T(*l*)
			4T, 8T		
			43T		

(*k*) Channel 22T CPR M frequency shared with the Toronto Hamilton and Buffalo Rly., CPR to avoid the use of Channel 22T in the Except Metro, Toronto and Niagara Areas of the Central District.

(*l*) Channel 8T used by the Vancouver Wharves Limited in railway terminal operation. Channel 8T is a CPR S frequency; CPR to avoid use of Channel 8T in Vancouver Area.

(*m*) Channel B, Quebec North Shore & Labrador Rly. T & Y frequency shared with the Wabush Lake Rly. between Labrador City and Rose Bay Junction.

British Columbia Electric Rly., listed on page 16, has been renamed the British Columbia Hydro and Power Authority.

Greater Winnipeg Water District, Rly. assignments shown are in Mc/s and were made prior to the introduction of the Canadian Plan.

Midland Rly. of Manitoba listed on page 16 with the comment "Channels to be assigned on request" has now been assigned the specific channels shown above.

Sydney and Louisburg Rly., listed on page 18, has been renamed the Cumberland Railway Company.

Toronto Hamilton and Buffalo Rly., listed on page 18, with the comment "In corporate relationship with CPR" has now been assigned the specific channels shown above.

Wabash Railroad, listed on page 18 , has merged with the Norfolk and Western Rly. and now operates under the name Norfolk and Western Rly.

SUPPLEMENT NO. 2

TO

CANADIAN RAILROADS

RADIO FREQUENCY ASSIGNMENT PLAN

FOR

30 KILOCYCLE NARROW-BAND ASSIGNMENTS

DATED JANUARY 1, 1960

REVISED OCTOBER 1, 1971

	EASTERN DISTRICT		CENTRAL DISTRICT	
Railroad 1	Service 2	All areas 3	Except Metro Areas 4	Montreal area 5
PACIFIC GREAT EASTERN	EE & PT T & Y W & U M S			
VANCOUVER WHARVES LTD.	T			
WHITE PASS AND YUKON ROUTE	EE, PT, Y S			

CENTRAL DISTRICT (continued)			WESTERN DISTRICT		
Toronto area 6	Niagara area 7	Windsor area 8	Except metro areas 9	Winnipeg area 10	Vancouver area 11
			36T, 39 35T, 27T 21T(*d*) 32T(*j*) 7T, 13T, 14T(*e*) 4T 2T, 17T 4T, 8T 43T		36T, 39 35T, 27T (*i*) 21T(*d*) 32T (*j*) 7,13T,14T(*e*) 4T 2T, 17T 8T

NOTES:

(*a*) Channel 14T Pacific Great Eastern W & U frequency shared with the British Columbia Hydro and Power Authority.
(*b*) Channel 13T Pacific Great Eastern W & U frequency shared with the Burlington Northern.
(*c*) Channel 31T CPR Y frequency. CPR to avoid the use of Channel 31T in the southern B.C. region of the Western District.
(*d*) Channel 21T CPR W frequency shared with the Pacific Great Eastern, CPR to use Channel 16T in lieu of Channel 21T at Vancouver and Except Metro Areas of Western District.
(*e*) Channel 43T CPR EE frequency shared with the Esquimalt and Nanaimo Rly. (a CPR subsidiary). Other CPR channels to be assigned on request to the Esquimalt and Nanaimo Rly.
(*f*) Channels 41T and 34T CNR EE & PT frequencies shared with the Midland Rly of Manitoba between Winnipeg and the International Boundary.
(*g*) Channel 6T CNR frequency used in General Terminal Operations shared with the Midland Rly of Manitoba, Midland Rly. of Manitoba locomotives to use Channel 6T while operating on Canadian National trackage in Winnipeg.
(*h*) Channel 27T CPR Y frequency shared with the Midland Rly. of Manitoba. Midland Rly. of Manitoba locomotives to use Channel 27T while operating on Canadian Pacific trackage in Winnipeg.
(*i*) Channel 27T Pacific Great Eastern Rly. T & Y frequency shared with CPR.
(*j*) Channel 32T Pacific Great Eastern Rly. T & Y frequency shared with CPR.

	EASTERN DISTRICT		CENTRAL DISTRICT	
Railroad 1	Service 2	All areas 3	Except Metro Areas 4	Montreal area 5
ALBERTA RESOURCES RLY.	EE & PT			
B.C. HYDRO AND POWER AUTHORITY	EE & PT T & Y M S			
BURLINGTON NORTHERN	EE & PT Y & W			
CNR	EE PT T Y W U M S D			
CPR	EE PT T Y W U M S D			
ESQUIMALT AND NANAIMO RLY.	EE			
GREAT SLAVE LAKE RLY.	EE & PT			
MIDLAND RAILWAY OF MANITOBA	EE & PT T & Y			
NORTHERN ALBERTA RLY.	EE & PT T & Y W & U			

CENTRAL DISTRICT (continued)			WESTERN DISTRICT		
Toronto area 6	Niagara area 7	Windsor area 8	Except metro areas 9	Winnipeg area 10	Vancouver area 11
			18T, 20T 37T, 39T		
			3T, 11T 12T, 14T(*a*) 3T, 11T 3T, 11T		3T, 11T 12T, 14T(*a*) 3T, 11T 3T, 11T
			30		30 13T(*b*)
			41T 34T, 42T 37T, 40T 26T, 28T 16T, 20T 30T 24T, 25T A, 10T, 1T 9T 6T	41T 34T, 42T 37T, 40T 26T, 28T 29T 16T, 20T 30T 24T, 25T A, 10T, 1T 9T, 7T 6T	41T 34T, 42T 37T, 40T 26T, 28T 29T 16T, 20T 24T, 25T A, 10T, 1T 9T 6T
			43T 44T, 45T 38T, 39T 31T(*c*)32T 18T, 19T 21T(*d*) 33T 22T, 23T B, C, 8T, 5T 0T	43T 44T, 45T 38T, 39T 27T, 31T 32T 19T, 21T 33T 22T, 23T B, C, 8T, 5T 0T	43T 44T, 45T 38T, 39T 27T, 32T 15T 18T, 19T 21T(*d*) 33T 22T, 23T B, C, 8T, 5T 0T
			43T(*e*)		
			18T, 20T 39T, 41T		
			41T(*f*)34T(*f*) 12T	41T(*f*)34T(*f*) 6T(*g*)12T,27T(*h*)	
			3T 11T, 12T 21, 23		