

Excerpts

From

**THE ANNUAL REPORTS
OF
THE RADIO DIVISION**

DEPARTMENT OF TRANSPORT

1936-1942

Amicus: 9588262
CA.T.633

ANNUAL REPORT F/Y 1936-37 **Report of C.P. Edwards, Director**

The amalgamation took place November 2, 1936¹

Radio Division comprised three main sections:

- 1) Administration of national and international laws etc;
- 2) The construction, operation and maintenance of radio stations as aids to navigation, both marine and aeronautical;
- 3) The investigation and suppression of inductive interference to broadcast reception.

The number of stations in the Dominion stood at:

Land Stations	1
DF Stations	13
Beacon Stations	26
Aircraft Stations	7

Page 5: Aeronautical Radio Aids to Navigation

Seven old type radio beacons, three weather reporting and relay stations, and two airport stations were taken over from the Department of National Defence on November 2, 1936. The equipment of these stations will be modernized and used as required in the coast-to-coast network of aeronautical radio beacons to be established during the coming fiscal year in connection with the Trans-Canada Airways.

Page 10: Special Broadcasts in Sub Arctic Regions

In December, 1930, arrangements were made for the department's stations at Coppermine, Coronation Gulf, Chesterfield Inlet and Port Churchill, Hudson's Bay; and the Royal Canadian Mounted Police schooner St. Roch, to broadcast at scheduled hours for the benefit of trading posts, settlers, miners, missions etc within range. The broadcasts, which consist of press, personal messages etc are transmitted by voice in accordance with the following schedule:

¹ The Department of Transport (DOT) was created on that date and the Radio Branch joined the new DOT.

		<u>Wavelength</u>	<u>Time EST</u>
Coppermine	VBK	571Kcs	525.0 meters 11:05pm Wed-Sat
Chesterfield Inlet	VBZ	555Kcs	540.5 meters 10:00pm Tues-Fri
Port Churchill	VAP	555Kcs	540.5 meters 11:00pm Mon-Thurs
St. Roch	VGSR	667Kcs	450.0 meters 11:00pm Wed-Sat

Page 12: Auto Alarm Devices – 778 ships fitted plying to and from Canadian ports.

Page 17: The Dirigible Hindenburg (DEKKA)

Many bearings and weather reports were given to the Hindenburg during the season by the East Coast Direction Finding stations of the Division.

This report was unsigned.

Seven sample pages from the Annual Report of the Radio Division from 1936 to 1942 follow. The reports from 1937-42 are all signed:

Walter A. Rush
Controller of Radio.

(These notes taken by John Gilbert at Library and Archives Canada on 3 April 2007)

MARITIME RADIO AIDS TO NAVIGATION

GOVERNMENT COAST STATIONS

The term "Coast Station" is used to designate a radio station established on shore to communicate with ships at sea.

The complete system consists of eighty-one stations located as follows:—

East Coast (includes 14 radio beacon stations, 1 combined direction finding and radio beacon station and 4 radiotelephone stations)...	37
Great Lakes (includes 7 radio beacons).....	15
Pacific Coast (includes 5 radio beacon stations, 1 combined coast and radio beacon station and 6 radiotelephone stations).....	22
Hudson Bay and Strait and Arctic.....	7
Total.....	81

Three Coast Station systems are maintained, one extending from Vancouver to Prince Rupert on the Pacific, another from Port Arthur to the Atlantic ocean in the east, and the third from Port Churchill to Resolution island at the eastern entrance to the Hudson strait, and, for the purpose of administration, is divided into three districts—Pacific Coast, Great Lakes, and East Coast. The stations of the Great Lakes connect up with those of the East Coast Division, which in turn connects with the Hudson Bay route chain. There is no direct radio connection between the Great Lakes and the Pacific coast.

Of the above stations, fourteen on the East Coast and Great Lakes are operated by the Canadian Marconi Company under contract with the department, and the balance of sixty-seven, which includes Coast Stations, Direction Finding Stations, Radio Beacon Stations and Radiotelephone Stations, on the east and west coasts and Hudson's bay and strait, are operated directly by the department.

The primary aim of the Coast Station organization is to provide radio facilities whereby any ship within 500 miles of the Canadian coast can establish instant communication with the shore. Constant watch, 24 hours a day, 365 days a year, is maintained at practically all of the stations, which during the year handled a total of 7,872,891 words.

AERONAUTICAL RADIO AIDS TO NAVIGATION

Seven old type radio beacons, three weather reporting and relay stations, and two airport stations were taken over from the Department of National Defence on November 2, 1936. The equipment of these stations will be modernized and used as required in the coast-to-coast network of aeronautical radio beacons to be established during the coming fiscal year in connection with the Trans-Canada Airways.

COMMERCIAL SHIP SERVICE

In addition to the thirty-one coast stations, all direction finding stations handle commercial radio traffic.

On the Pacific Coast the departmental stations at Estevan (VAE) and Vancouver (VAI) provide a long distance service to ships, and on the Atlantic, Louisburg, N.S. (VAS), owned and operated by the Canadian Marconi Company, provides a similar service.

PRESS

WEST COAST

Press messages are transmitted daily as follows: Vancouver (VAI) at 0500, G.M.T., on 8,330 Kc/s (36 metres). Vessels at sea report copying the press message transmitted by this station shortly after leaving Australia.

TIME SIGNALS

Time signals are transmitted as follows:—

East Coast.—Camperdown (VCS)—Daily, except Sunday, at 1400 G.M.T., on 400 Kc/s (750 metres). These time signals are received from the Observatory, Saint John, N.B., and relayed to Camperdown by landline.

AVIATION SECTION

The seven old-type radio range stations which were taken over from the Department of National Defence in 1936-37 were partially remodelled to serve as range stations until modern ones were built at more suitable places.

Twelve modern Adcock four-tower radio range stations were completed and construction started at eleven other sites. These stations are so laid out that a fifth tower can be added when required together with a second transmitter to convert the stations to the simultaneous transmission of range signals and voice.

Temporary short-wave radio stations were established at Princeton, Cranbrook, Wagaming and Kapuskasing mainly for the purpose of communication with departmental planes which in the course of their duties are required to fly along the airway. These stations together with the old range stations on the prairies and the previously established short-wave stations at Lethbridge, Coleman and Vancouver provided fair communication facilities.

The Trans-Canada Air Lines took over the operation of the short-wave station at Vancouver on February 21, 1938; at Lethbridge on November 15, 1937; and at Cranbrook on January 15, 1938.

Prior to dismantling the airship mooring tower at St. Hubert airport, the transmitting equipment which was installed in it was moved to temporary quarters in the pump house and reconnected for operation from the administration building.

To assist the Imperial and Pan-American aircraft in their test flights across the Atlantic two complete stations were established, one at Rimouski and another at Shediac.

The Rimouski station was housed in an existing building at the local airport and was fitted with two 3-channel 100-watt short wave transmitters together with the necessary receivers and associated equipment.

At Shediac two buildings were erected about half a mile apart, one to house modern direction finding equipment and the other to house the transmitting equipment. These buildings are connected by an underground cable so that the transmitters can be operated by remote control from the direction finding building. Suitable towers were erected to support the antenna systems.

At Longueuil a small building was constructed to house a transmitter and direction finding equipment to give bearings to trans-Atlantic aircraft approaching Montreal. A crossed loop antenna, ground system, and power supply were also installed.

The following Trans-Canada Radio Range Stations were completed during the fiscal year 1937-38:—

Vancouver, B.C.	Edmonton, Alta.	Swift Current, Sask.
Princeton, B.C.	Red Deer, Alta.	Regina, Sask.
Grand Forks, B.C.	Lethbridge, Alta.	Rivers, Man.
Cranbrook, B.C.	Medicine Hat, Alta.	Winnipeg, Man.
St. Hubert, P.Q.		

The following stations are under construction:—

Broadview, Sask.	Kapuskasing, Ont.	Reay, Ont.
Kenora, Ont.	Porquis Jet., Ont.	Killaloe, Ont.
Sioux Lookout, Ont.	Earlton Jet., Ont.	Toronto, Ont.
Wagaming, Ont.	North Bay, Ont.	Ottawa, Ont.
Pagwa, Ont.		

INVESTIGATION OF ICE CONDITIONS—CABOT STRAIT, GULF OF ST. LAWRENCE

At the opening of navigation a departmental icebreaker investigates ice conditions in the Cabot Strait. The ship cruises in the vicinity of Cabot Strait, observing the ice conditions and every few hours obtains from all incoming and outgoing ships, and from all radio and signal stations, a detailed report of the ice conditions in the different areas. These, in conjunction with her own observations, are compiled and analysed, and, based thereon, a broadcast message containing a synopsis of location and drift of the ice, together with recommendations as to the best route for ships to follow, is broadcast twice daily, the ship using the general call sign VCQP.

Every vessel spoken is advised of the location and nature of the ice she may expect to encounter on her particular course, and the best route to follow.

HUDSON BAY ROUTE

The departmental steamer *N. B. McLean* again acted as depot and patrol ship in the Hudson Strait throughout the season of navigation.

She is completely equipped with radio, both telegraph and telephone, and maintains constant watch on 500 Kc/s (600 metres). Call sign CGSN. Short-wave schedules are also maintained direct with the Ottawa Short Wave Station VAA.

Detailed observations covering navigation conditions in the Hudson Bay and Strait during the season of navigation 1937 were made and have been compiled in pamphlet form as in previous years, copies of which may be procured from the Department for the sum of 10 cents.

SHIPS' EMERGENCY APPARATUS

The department has in effect an arrangement whereby its coast stations call upon Canadian and certain British ships to operate their emergency apparatus whilst at sea, in order to check their efficiency.

NUMBER OF SHIPS EXERCISED, 1937-38

Total	300
Failures	1
Average time taken to change over.....	10 secs.
Time allowed	30 secs.

AVIATION SECTION

Thirteen Adcock radio range stations which were started in 1937-38 were completed and put in commission. In addition to these, five more, two of which are loop installations, were built and commissioned as well as one fan marker station. This makes a total of thirty-one ranges, one fan marker, one Trans-Atlantic D.F. station as Shediac, N.B., and one weather-reporting station at Port Harrison, Hudson Bay, in operation.

The equipment was purchased for three more ranges east of Montreal and two stations were partially completed.

The Departmental short-wave installations at Wagaming, Kapuskasing and Cranbrook were dismantled as the T.C.A. established their own facilities at these points. The short-wave station at Coleman, Alta., was also discontinued. Short-wave equipment was installed at Carmi, Crescent Valley and Grand Forks in British Columbia to supplement the teletype circuit in case of breakdown of the latter.

A new transmitting station building and antenna system was erected on the Taschereau Boulevard near St. Hubert and all short-wave transmitting equipment moved into it, including that of the T.C.A. All transmitters are controlled from the airport over a telephone cable. A dwelling was also erected on the site for the maintenance electrician.

The airport radio office was moved from the old administration building to offices in a hangar.

Rimouski station was abandoned and the equipment moved to St. Hubert.

Ten duplicate radio range transmitters were installed at the following points to provide standby equipment in the event of failure of the transmitter in use:—

Vancouver, B.C.	Winnipeg, Man.	Ottawa, Ont.
Edmonton, Alta.	Kapusksing, Ont.	Toronto, Ont.
Wagaming, Ont.	North Bay, Ont.	St. Hubert, Que.
Lethbridge, Alta.		

Fourteen emergency gasoline-driven generating sets were installed at the following radio ranges:—

Vancouver, B.C.	North Bay, Ont.	Wagaming, Ont.
Cowley, Alta.	Ottawa, Ont.	Porquis Jet., Ont.
Regina, Sask.	Carmi, B.C.	Killaloe, Ont.
Sioux Lookout, Ont.	Lethbridge, Alta.	St. Hubert, Que.
Pagwa, Ont.	Winnipeg, Man.	

and 10 KW gasoline generating sets were installed in duplicate at Crescent Valley, B.C., to provide power for the range.

Sixteen dwellings for the radio staff were erected and furnished, two at each of the following places:—

Broadview, Sask.	Killaloe, Ont.	Earlton, Ont.
Kenora, Ont.	Rivers, Man.	Muskoka, Ont.
Porquis Jet., Ont.	Sioux Lookout, Ont.	

and a staff house was erected at Carmi, B.C.

The construction of the following stations which were commenced in 1937-38 were completed during the fiscal year 1938-39:—

Broadview, Sask.	Kapuskasing, Ont.	North Bay, Ont.
Kenora, Ont.	Ottawa, Ont.	Muskoka, Ont.
Sioux Lookout, Ont.	Porquis Jet., Ont.	Killaloe, Ont.
Wagaming, Ont.	Earlton Jet., Ont.	Toronto, Ont.
Pagwa, Ont.		

The following new stations were built during 1938-39:—

Carmi, B.C.	Nakina, Ont.	Cowley, Alta.
Calgary, Alta.	Crescent Valley, B.C.	

An ultra high frequency fan marker was established at Maple Ridge, near Haney, B.C. This marker operates on 75 megacycles and was installed for the purpose of indicating to pilots on a westward flight when it is safe to lose altitude preparatory to landing at Vancouver airport.

The construction of two range stations was commenced in the eastern section at:—

Moncton, N.B., and Blissville, N.B.

ASSISTANCE RENDERED TO VESSELS

Special assistance was rendered to various ships and aircraft during the year by Government Radio Stations.

WEST COAST

Name of Station	Name of Vessel	Date	Remarks
Pachena Point and Estevan, B.C.	M.S. <i>Queen Adelaide</i>	Mar. 16, 1938	In distress. Assistance rendered.
Gonzales Hill and Estevan, B.C.	Western Airway Co. Plane.	May 27, 1939	Lost.
Prince Rupert, B.C.	C.G.S. <i>Givenchy</i>	June 22, 1938	Struck rock. Released.
Alert Bay, B.C.	SS. <i>Thomas Crosby</i>	Nov. 15, 1938	Engine trouble, towed.
Prince Rupert, B.C.	SS. <i>Catala</i>	Dec. 18, 1938	Stranded on reef, refloated.
Prince Rupert, B.C.	Fish Boat <i>Mabel</i>	Jan. 14, 1939	Missing. Crew picked up, vessel total loss.

GREAT LAKES

Port Burwell, Ont.	Scow	Nov. 25, 1938	Lost. Unable to tow. Scow broke up.
Point Edward, Ont.	Yacht	July 31, 1938	Out of gas. Unknown.
Midland, Ont.	SS. <i>Manitoulin</i>	July 2, 1938	Aground. Released.
Port Burwell, Ont.	Tug <i>Cecil M.</i>	May 11, 1938	Broken down, towed in.

EAST COAST

Belle Isle, Lab.	Sealer <i>Ora II</i>	April 21, 1938	Leaking badly, sunk. Crew of 52 picked up.
Belle Isle, Lab.	SS. <i>Lotus</i>	June 23, 1938	Ashore. Refloated.
Cape Race, Nfld.	Schooner <i>Notre Dame</i>	July 29, 1938	On fire, crew 34 saved.
Cape Race, Nfld.	SS. <i>Canadian Ranger</i>	Mar. 2, 1939	Leaking badly, all crew saved.
Camperdown, N.S.	Trawler <i>Delaware</i>	Feb. 27, 1939	Engine disabled, towed.

Automatic alarm units were installed at Dead Tree Point, B.C., Race Rocks, B.C., and Langara Island.

At Point Grey a new site was selected and a new wireless station built, complete with operating house dwelling, 4-car garage, masts, power supply lines, remote control lines, telegraph and telephone lines and all other connections and conveniences. A Creed automatic transmitter and perforator and a new long and short wave receiver were also installed.

At Victoria a modern fire-proof operating house has been built, at a new location in the Gordon Head district, complete with lattice, self-supporting steel towers. Transmitting equipment comprising a 2,000 watt, 5 channel, C.W., I.C.W. longwave transmitter, a 150 watt, 3 channel, C.W., I.C.W. longwave emergency transmitter, and a 200 watt, 3 channel, crystal controlled, C.W., I.C.W. telephone, shortwave transmitter are being installed.

Power and lighting cables from the city supply together with telephone cables have been installed underground. A 15 kW gasoline engine-driven generating plant is being installed as an emergency power source.

A new dwelling with 2-car garage has been constructed, with city water supply to both buildings and septic tanks and drainage systems installed.

Special long and shortwave ground systems have been provided and the whole site fenced in.

Work Undertaken on Behalf of Other Departments of the Government

The fishery protection vessels *Kitimat* and *Nitinat* have each been fitted with 150 watt, 3 channel, C.W. I.C.W. longwave transmitters together with complete receiving equipment.

The work was additional to the usual maintenance of equipment on all of the Government operated vessels.

This Division maintains and furnishes engineering services for the Royal Canadian Mounted Police Maritime Radio System.

RADIO AIDS TO AERONAUTICAL NAVIGATION

During the fiscal year 1939-40 three radio range stations which were started in 1938-39 east of Montreal, at Moncton, Blissville and Megantic, were completed and the construction of seven more at Windsor, London, Stirling, Sidney Island, Fort William, Charlottetown and Dartmouth was practically completed. A new radio range station was completed at Penhold and the old station at Red Deer was closed down. This makes a total of 34 stations in commission and 7 more practically completed at the end of the fiscal year.

In addition to the above there is one fan marker at Maple Ridge, a transatlantic S.W. D.F. station at Shediac and a weather reporting station at Port Harrison, Hudson Bay, in operation, which were completed in previous years. A new Adcock S.W. D.F. station was built and placed in commission near St. Hubert airport for use in connection with transatlantic flights.

Duplicate radio range transmitters were installed at 31 radio range stations to provide standby equipment in the event of a failure of the transmitter in use. The completion of these installations provides standby transmitters at all 41 radio ranges.

Twenty-four emergency generating plants were purchased and were installed at the following range stations:—

Sidney Island	Rivers	Windsor
Cranbrook	Kenora	London
Princeton	Nakina	Stirling
Calgary	Kapuskasing	Megantic
Edmonton	Earlton	Blissville
Medicine Hat	Fort William	Moncton
Swift Current	Muskoka	Dartmouth
Broadview	Toronto	Charlottetown

Nineteen dwellings for the radio staff were constructed at the following places:—

Sidney Island	(2)	Nakina	(2)
London	(2)	Megantic	(2)
Ottawa	(2)	Shediac	(1)
North Bay	(2)	Blissville	(2)
Stirling	(2)	Moncton	(2)

Eleven "cone of silence" transmitters and six fan markers were purchased, and will be installed during the fiscal year 1940-41.

Twelve automatic transfer switches were purchased and will be installed at the stations equipped with Kohler emergency generators, viz:—

Vancouver	Pagwa	Wagaming
Cowley	North Bay	Porquis
Regina	Lethbridge	Killaloe
Sioux Lookout	Winnipeg	St. Hubert

Thirty-one airport shortwave receiving equipments which were ordered in the previous year were delivered and installed. An additional 10 sets were purchased and delivered to the remainder of the 41 range stations.

OTHER DEPARTMENTS OF THE CANADIAN GOVERNMENT OPERATING RADIO STATIONS

Department of National Defence.—Militia Services (Royal Canadian Corps of Signals): Operates in addition to stations established for military purposes 11 permanent stations and 2 summer stations situated along the Mackenzie River and in the Yukon Territory on behalf of the Department of Mines and Resources, Bureau of Northwest Territories and Yukon Affairs.

Department of Public Works.—Operates 11 stations to provide emergency communication between the mainland and certain islands, and 15 stations to provide emergency links in existing landline circuits.

Department of Mines and Resources.—Operates one private commercial station and one experimental station at the Dominion Observatory for the transmission of time signals, and 10 private commercial stations in the National Parks of Canada together with 3 other portable private commercial stations.

MISCELLANEOUS RADIO SERVICES

TRANS-ATLANTIC RADIOTELEPHONE SERVICE

Through the facilities of the Canadian Marconi Company, the Bell Telephone Company and the British Post Office, a direct Anglo-Canadian radiotelephone circuit is available to the Canadian public.

CANADA-NEWFOUNDLAND RADIOTELEPHONE SERVICE

During the past fiscal year the Canadian Marconi Company was licensed to establish a public commercial station with the transmitter at Drummondville and receiver at Yamachiche, P.Q., for the purpose of communicating with a similar station located at Saint John's Newfoundland, thus providing a direct Newfoundland-Canadian radiotelephone circuit available to the Canadian public.

COMMERCIAL RADIOTELEPHONE SERVICES

The North-West Telephone Company operates a radiotelephone service between points in British Columbia hitherto telephonically isolated. Under licences granted by this Department the company has established 7 permanent

Two 145 foot and one 110 foot steel masts and complete aerial system were erected at the new location of the Point Grey station and all receiving and monitoring equipment, teletype and landline instruments and other equipment was moved from the old to the new building and put into operation.

Additional radio beacon transmitters were modified to incorporate regeneration at the Race Rocks, Kains Island, Langara Island, Triple Island and Point Atkinson stations.

Modern type receivers were installed at Alert Bay, Cape Lazo, Merry Island, Prince Rupert and Vancouver.

Grounds about the Estevan Point station were cleared and graded, the corduroy road to Hesquiat repaired and a concrete breakwater was built at the Hesquiat landing place to facilitate landing of supplies for the Estevan Point station.

The station grounds at Alert Bay were cleared, graded and fenced, the driveway at Lulu Island was hard surfaced, and a new well dug at the Bull Harbour station.

Work Undertaken on Behalf of Other Departments of the Government

A new aerial was made up and installed on the Fishery Protection vessel *Kitimat* and all transmitting and receiving equipment was overhauled and retuned on this and the other Fishery Protection vessels.

Transmitting and receiving equipment on the various Government operated vessels also were overhauled and maintained.

RADIO AIDS TO AERONAUTICAL NAVIGATION

During the fiscal year 1940-41 a new radio range station was constructed at Kimberley, B.C. and the dismantlement and transfer of the existing range station from Grand Forks, B.C. to Penticton, B.C. was completed. Seven range stations at Windsor, London, Stirling, Sidney Island, Fort William, Charlottetown and Dartmouth were fully completed. This makes a total of 42 radio range stations in commission at the end of the fiscal year.

In addition to the above the following stations completed in previous years were in operation:

Fan marker station.....	Maple Ridge, B.C.
Short wave D.F. station.....	Shediac, N.B.
Adcock short wave D.F. station.....	St. Hubert, P.Q.
Short wave transmitting station.....	St. Hubert, P.Q.
Weather reporting station.....	Port Harrison, Hudson Bay.

One cone of silence marker which is a low powered ultra-high frequency transmitter producing a limited circular field pattern used for the purpose of providing aircraft with definite fixes in conjunction with radio range equipment was installed at St. Hubert radio range station. Ten additional units were purchased for installation at the following range stations, and will be completed early next year:—

Vancouver	Cranbrook
Princeton	Cowley
Penticton	Lethbridge
Carmi	Winnipeg
Crescent Valley	Malton

One fan marker which is an ultra-high frequency medium power radio transmitting system producing an elliptical cone of radio signals and located at intersections of radio range routes where it is desirable to provide a definite indication to aircraft of their position when over these points was installed on Mount Royal near St. Hubert Airport. Five additional units were purchased for installation at locations in the vicinity of:

Penticton (1)	Kimberley (2)	St. Hubert (2)
---------------	---------------	----------------

Work was completed on the installation of 12 automatic transfer switches at range stations equipped with Kohler emergency generators. Each of the 42 range stations now in operation are equipped with emergency power plants which automatically start up and supply power to the radio range transmitters whenever a commercial power failure occurs.

Installations were made of 10 airport short wave receiving equipments, which completes installations of similar equipments at all airports.

Airport traffic control equipment was installed at Ottawa, Toronto and St. Hubert and equipment ordered for 8 additional installations.

Additional clearing was carried out at radio range stations located in bush country to eliminate forest fire hazard. Fencing and improvements to roads where necessary were also completed.

OTHER DEPARTMENTS OF THE CANADIAN GOVERNMENT OPERATING RADIO STATIONS

Department of National Defence.—Militia Services (Royal Canadian Corps of Signals) operates in addition to stations established for military purposes 11 permanent stations and 2 summer stations situated along the Mackenzie River and in the Yukon Territory on behalf of the Department of Mines and Resources, Bureau of Northwest Territories and Yukon Affairs.

Department of Public Works.—Operates 11 stations to provide emergency communication between the mainland and certain islands, and 11 stations to provide emergency links in existing landline circuits.

Department of Mines and Resources.—Operates one private commercial station and one experimental station at the Dominion Observatory for the transmission of time signals, and 12 private commercial stations in the National Parks of Canada together with 4 other portable private commercial stations.

MISCELLANEOUS RADIO SERVICES

CANADA-NEWFOUNDLAND RADIOTELEPHONE SERVICE

The Canadian Marconi Company is licensed to operate a public commercial station with the transmitter at Drummondville and receiver at Yamachiche, P.Q., for the purpose of communicating with a similar station located at St. John's, Newfoundland, thus providing a direct Newfoundland-Canada radiotelephone circuit available to the Canadian public.

COMMERCIAL RADIOTELEPHONE SERVICES

The North-West Telephone Company operates a radiotelephone service between points in British Columbia hitherto telephonically isolated. Under licences granted by this Department the company has established 7 permanent public commercial radiotelephone stations in that province. These stations are authorized to provide communication to 33 private commercial radiotelephone stations located at isolated points in that province. This company is also licensed to establish limited coast stations at Lulu Island and Prince Rupert, B.C., to provide a ship-to-shore service.

These stations used in conjunction with the ordinary telephone exchange provide a duplex radiotelephone service to the 33 isolated points and certain ships at sea.

The North-West Telephone Company is also licensed to provide emergency radiotelephone communication at any point in British Columbia and to carry out tests with a view to extending the existing radiotelephone service throughout the province.

On the north shore of the St. Lawrence, the Canadian Marconi Company operates a radiotelephone station at Rimouski which ties in with the Bell Tele-

RADIO AIDS TO AIR NAVIGATION

During the fiscal year 1941-42 new radio range stations were completed, at Grande Prairie, Alta., Prince George, B.C., Smithers, B.C., Fort St. John, B.C., Nelson, B.C., Watson Lake, Y.T., Whitehorse, Y.T., Sydney, N.S., Goose Bay, Labrador; Gander, Newfoundland; Tor Bay, Newfoundland and Clear Creek, Ont., twelve in all, making a total of 54 radio ranges now in operation.

In addition to the above, short and long wave communication stations were established at eight points in the northwest, between which it is not practicable to instal teletype lines. These are located at Edmonton, Alta., Grande Prairie, Alta., Prince George, B.C., Smithers, B.C., Fort St. John, B.C., Fort Nelson, B.C., Watson Lake, Y.T., and Whitehorse, Y.T.

All radio facilities formerly installed to serve St. Hubert, P.Q., were transferred to serve the new airport at Dorval. This involved moving the radio range and short wave transmitters from the former site on Taschereau Boulevard to new buildings at a new site near Beaconsfield Station. The office was transferred to the new administration building at Dorval and the receivers for the airport traffic control tower and the communications office, to a remote receiving site near the airport.

Airport traffic control equipment was installed at nine airports in addition to the three installed last year. These nine are located at Moncton, N.B., Windsor, Ont., London, Ont., Winnipeg, Man., Regina, Sask., Lethbridge, Alta., Calgary, Alta., Edmonton, Alta., and Vancouver, B.C.

Progress was made with the construction of one fan marker south of Kimberley Airport. Due to the high cost of building a fan marker to serve Penticton Airport at the required location, tests were conducted with a view to using a medium frequency homing transmitter installed in a relatively accessible location.

OTHER DEPARTMENTS OF THE CANADIAN GOVERNMENT OPERATING RADIO STATIONS

Department of National Defence.—Militia Services (Royal Canadian Corps of Signals) operates in addition to stations established for military purposes 11 permanent stations and 2 summer stations situated along the Mackenzie River and in the Yukon Territory on behalf of the Department of Mines and Resources, Bureau of Northwest Territories and Yukon Affairs.

Department of Public Works.—Operates 11 stations to provide emergency communication between the mainland and certain islands, and 12 stations to provide emergency links in existing landline circuits.

Department of Mines and Resources.—Operates one private commercial station and one experimental station at the Dominion Observatory for the transmission of time signals and 22 private commercial stations in the National Parks of Canada together with 7 other portable and 1 fixed private commercial stations.

MISCELLANEOUS RADIO SERVICES

Commercial Trans-Oceanic Radiotelegraph Service.

The Canadian Marconi Company is licensed to operate a long distance beam radiotelegraph service between Montreal (Drummondville) and Great Britain and between Montreal (Drummondville) and Australia.