

Licensing and Operation.—In all branches of radio, basic control is exercised over the right to establish a station, assignment of frequencies, operator standards, operating procedure, and general regulations concerning the manner in which radio stations are used.

Under the Broadcasting Act applications for licences to establish broadcasting stations, or for modification of existing stations, are referred to the Canadian Broadcasting Corporation for its recommendations to the Minister of Transport before being dealt with by the Department of Transport. The Canadian Broadcasting Corporation also controls the linking-up of stations that form networks and in addition the character of programs being broadcast. With these exceptions the control of broadcasting stations is carried out by the Telecommunications Division of the Department of Transport.

The standard broadcast band is crowded with stations that are capable of interfering with one another over the entire North American region, particularly at night. A plan for the accommodation of the largest number of stations with the least interference was evolved as a result of extensive studies conducted by Canada, Cuba, the Dominican Republic, Haiti, the Bahama Islands, Mexico, and the United States and was embodied in the North American Regional Broadcasting Agreement.

Before a new standard broadcasting station can be licensed or before modifications can be made in an existing station, engineering briefs covering the selection or change of frequency, amount of power and design of the directional antenna system must be approved by the Department of Transport and notification sent to the signatory countries of the North American Regional Broadcasting Agreement. After the establishment or change is completed, proof of performance must be submitted to establish that the actual installation is in accordance with the approved plan.

The allocation of high frequencies and their efficient utilization requires reasonably accurate information on the transmission properties of the ionosphere which vary with the season, the sunspot cycle and other factors. This information is obtained from hourly measurements of the ionosphere made at some 70 points throughout the world and analysed by the Radio Physics Laboratory, Defence Research Board, Ottawa, and by the United States Bureau of Standards at Washington, D.C. The Canadian measurement stations are located at St. John's, Nfld.; Resolute Bay, Cornwallis Island and Baker Lake, N.W.T.; Fort Chimo, Que.; Churchill and Headingley, Man.; Ottawa, Ont.; and Prince Rupert, B.C. Data from these stations are correlated by the Defence Research Board. Six frequency monitoring stations are maintained at suitable points across Canada to check operating frequencies of all classes of radio stations to ensure that they do not depart from the assigned frequency by an amount greater than that permitted by the international conventions.

Under the Safety of Life at Sea Convention and the Canada Shipping Act, most passenger ships and larger cargo ships must be fitted with radiotelegraph or radiotelephone equipment, primarily for distress use. Approval is given for each make and model of equipment that comes up to the required standard and in addition the ship station as a whole is inspected before the licence is issued and periodically thereafter. Foreign ships are subject to inspection before sailing from Canadian ports to ensure that they conform with the requirements of the Safety of Life at Sea Convention.

Analogous inspections of aircraft radio stations are carried out. Standards are provided specifying in detail the requirements to be met to ensure an airworthy installation. A certificate of airworthiness is granted to manufacturers for each type or model of aircraft radio equipment that has been demonstrated to meet the requirements. Only type-certificated equipment is accepted for use on scheduled airlines although other equipment, if inspected, is acceptable for other aircraft.