

turned into detailed maps. Use of ground radar beacons together with airborne radar equipment enables aerial photographs to be positioned. A network of such radar beacon sites for geodetic control has been set up in Manitoba and Saskatchewan during 1948 by the RCAF Department of Mines and Resources. It is too early to determine to what extent this system of fixing the position of aerial photos will displace ground surveying, but it is hoped that 1949 operations may provide an answer. If the operations are successful, it is possible that great savings in time and money may be made in connection with mapping from aerial pictures.

RAIN REPELLENT INVENTION: A rain repellent for aircraft windcreens has been invented by a member of the National Research Council of Canada and is now being manufactured and marketed by a Canadian firm, the Council has announced.

Optical errors caused by rain on the windshield of an airplane are usually greater than the pilot realizes. Simulated flight tests with a water spray on a sheet of glass in a high speed air current, showed that the extent of these errors varies considerably with the size of water drops, the amount of water, the air speed, and the angle of the windscreen. Tests further revealed that the average error is up to five degrees in angle in the line of vision, which means that a mountain peak half-a-mile ahead of an aircraft flying through heavy rain might appear to the pilot as much as 200 ft. lower than it actually is.

Application to the aircraft windscreen of the wax preparation, FC-10 Rain Repellent, is an effective method of preventing these optical errors. On impact upon the windscreen, the drops of water are broken down by the repellent into tiny droplets which then pass off into the airstream. The droplets move so rapidly that they are quite invisible. The windscreen thus appears dry and allows vision that is free from distortions or ripples.

Visibility of two miles has been obtained through the treated area under conditions in which untreated areas allowed no vision whatever. The treatment has proved satisfactory at all airspeeds, even in excess of 600 mph., and through heaviest rain. While it does not shed ice, the repellent permits normal de-icing, either with heat or with alcohol, and still functions properly on shedding subsequent rain. Materials used are non-corrosive and do not damage paint finishes.

This windscreen treatment is the result of seven years' research by Dr. D.F. Stedman of the Division of Chemistry.

AMBASSADOR OF ARGENTINA: The Department of External Affairs has announced that on April 26 Mr. Atilio Garcia Mellid presented to His Excellency the Governor General at Government House, his Letter of Credence as Ambassador

Extraordinary and Plenipotentiary of Argentina in Canada.

Mr. Brooke Claxton, Acting Secretary of State for External Affairs was present. Mr. Erasto M. Villa, Counsellor of the Argentine Embassy and Commodore Arturo Francisco Grassi, Air Attaché, accompanied the Ambassador. Mr. Howard Measures, Chief of Protocol, Department of External Affairs, presented Mr. Garcia Mellid to His Excellency the Governor General.

Mr. Garcia Mellid was born in Buenos Aires in 1901. A former professor, he is a writer. His activities in that field include work on several daily newspapers and magazines in his own country and abroad and the publication of several books of poetry, history and essays. He entered the Argentine Diplomatic Service in 1946 as Envoy Extraordinary and Minister Plenipotentiary and was later promoted to the rank of Ambassador. He was attached to the Political Division of the Department of External Affairs of Argentina and later became Director of the Cultural Division, a position which he held until he was appointed Ambassador to Canada.

RETAIL SALES: Spending in Canadian retail stores during February amounted to \$466,900,000, down five per cent from the January volume of \$493,370,000, but five per cent in advance of last year's February total of \$444,730,000, according to estimates by the Bureau of Statistics. During the first two months of this year, sales amounted to \$960,270,000 as compared with \$935,530,000 in the same period of 1948, an increase of 2.6 per cent.

All provinces shared in the rise during February over last year, with the exception of the Maritimes. Largest gains recorded were 21.6 per cent in Saskatchewan and 21.5 per cent in Alberta, followed by Manitoba 9.9 per cent, Ontario 4.4 per cent, British Columbia 1.6 per cent, and Quebec 1.2 per cent. Sales in the Maritime Provinces were down 2.5 per cent.

Sharpest gains among trades in the month were: lumber and building materials, 17.3 per cent; department stores, 9.4 per cent; and variety stores, seven per cent. Motor vehicle sales showed the greatest percentage decline, falling 9.4 per cent, men's clothing stores followed with 5.5 per cent, appliance and radio stores 3.8 per cent, shoe stores 3.4 per cent, and family clothing stores 3.2 per cent.

WHOLESALE SALES: Dollar volume of wholesale sales was one per cent higher in February than in the preceding month and two per cent above the level of the corresponding month last year, according to the statements from representative wholesalers in nine lines of trade. The general unadjusted index of sales, on the base 1935-39=100, stood at 244.6 for February, 243.2 for January and 239.8 for February last year, according to the Bureau of Statistics.

Sales in Quebec and British Columbia continued below last year by six per cent and three per cent, respectively. Wholesalers in the Maritime Provinces reported an increase of two per cent, while gains of four per cent and 10 per cent were recorded for Ontario and the Prairie Provinces.

Dry goods and apparel sales continued below 1948 volume, although the February declines were less marked than those for January. Sales of footwear wholesalers decreased five per cent, dry goods nine per cent, and clothing wholesalers 16 per cent.

TRANSIT TRAFFIC RECORD: Setting a new record for combined urban and interurban traffic, the total number of passengers carried by electric cars, motor buses and trolley buses of transit companies during 1948 totalled nearly 1,614,000,000 as compared with 1,598,000,000 in 1947, an increase of 16,000,000 or one per cent, according to a summary of monthly transit reports issued by the Bureau of Statistics. The year's total exceeded the previous peak of 1946 by nearly 6,000,000 passengers.

Urban traffic aggregated 1,507,838,000 passengers during the year as against 1,499,536,000 in 1947, while interurban increased from 98,447,000 to nearly 106,147,000 passengers in 1948, a gain of 7.8 per cent. The steady use of transit facilities in 1948, observes the Bureau report, reflected the high level of industrial employment and national income. Traffic increased despite the advance in passenger automobile registrations and larger sales of motor cycles, bicycles and motor bikes.

RAIL REVENUES: Both revenues and expenses of Canadian railways increased in December over a year earlier, expenditures showing the greater increase and net operating revenue being consequently reduced, according to the Bureau of Statistics.

Operating revenues reported by the railways for the month amounted to \$77,483,353, an increase of \$8,852,381 or nearly 13 per cent over December 1947, and of \$15,557,000 above December 1946, setting a new high for any December, according to the Bureau of Statistics. Operating expenses rose more sharply to \$72,522,817, up \$14,172,924 or 24 per cent above a year earlier. Net operating revenue was thus reduced from \$10,281,079 in 1947 to \$4,960,536 for the month. Owing to a considerable easing in tax accruals, however, operating income suffered only a minor decline from \$6,904,417 to \$6,836,085.

GOLD PRODUCTION: Gold production in Canada was maintained at a comparatively high level in February, output for the month, as recorded by the Bureau of Statistics, amounting to 307,472 fine ounces, showing a slight decline

from the January figure of 308,989, but 17 per cent in advance of the 261,603 produced in February last year.

Output for the two months ended February totalled 616,461 fine ounces as compared with 534,969 in 1948, an increase of 15 per cent. There were substantial advances over a year earlier in Quebec, Ontario and the Northwest Territories, and small decreases in Manitoba and Saskatchewan, and British Columbia.

SILVER, LEAD, ZINC: Production of both primary silver and lead continued downward in February, silver reaching its lowest point since April, 1947, and lead its lowest since May, 1944. Primary zinc showed a substantial increase over last year.

The month's output of primary silver amounted to 936,372 fine ounces as compared with 975,434 in January and 1,035,568 in the corresponding month last year, according to the Bureau of Statistics. During the first two months of this year, 1,911,806 fine ounces were produced as against 1,993,793 in the similar period a year ago. Output for April, 1947, stood at 924,469 fine ounces.

MANGANESE SHORTAGE: Concerned over the shortage of manganese ore on the American Continent and the uncertainty of shipments from overseas sources of supply, steel producers in Canada are now considering the possibilities of using substitutes for manganese, vital alloying metal in the production of practically all types of steels. Acting on their suggestion, the Bureau of Mines of the Department of Mines and Resources, plans to undertake research immediately, in the hope of finding a suitable substitute. Estimates of the Bureau for the current fiscal year provide an amount for the installation of a 250 K.v.a. electric furnace which will be used in connection with the research.

There is no known way at present of producing steel without the use of manganese, and an average of about 12 pounds of manganese is required for every ton of steel.

WHEAT STOCKS: Stocks of Canadian wheat in store or in transit in North America at midnight on April 14 amounted to 124,823,000 bushels, down 2,088,000 from the preceding week's total of 126,911,000 bushels, but 43,643,000 higher than the 81,180,000 bushels held on the corresponding date last year, according to the Bureau of Statistics.

INDUSTRIAL ADVISOR: Brigadier F.C. Wallace, of Toronto, executive vice-president of Smith and Stone Limited, Georgetown, Ont., has been appointed industrial advisor to the Defence Research Board, the Minister of National Defence, Mr. Claxton, has announced.