

aircraft, begun in mid-1956 and continued through 1957. Although this development is taking place in the United States, production of the system will be in Canada with the most practical degree of Canadian content. The electronics program for the *Sparrow* missile started early in 1957 and involved limited tooling and pre-production. Some missile fuze development work was also continued pending a decision on the production requirements for the *Sparrow* fuze; this is a specialist skill which has been built up in Canada since 1951. Delivery of the *CF-100* flight simulators, which began in 1956, continued throughout 1957.

The ultra high frequency (UHF) conversion program for the RCAF progressed, with ground-based equipment procurement nearing completion and on-site installation well under way by the end of 1957. A production program for modern multi-channel airborne UHF equipment was started. A contract for airborne radar equipment for the *CS2F* aircraft was completed by the end of 1957, leaving only support spares to be provided. Canadian industry, sponsored by a development contract, produced airborne doppler navigational equipment which is considered to be a forerunner in this field. The Mid-Canada radar line, a significant achievement of the defence program, was completed early in 1957 and is now an integral part of the North American defence network. The line, which was completely financed by Canada, lies between the joint Canadian-United States-financed Pinetree line to the south and the United States-financed Distant Early Warning (DEW) line to the north. In 1957, two civilian contractors were selected to be responsible for carrying out maintenance and to supply supporting services on the Mid-Canada line for the RCAF. Maintenance contracts, to provide back-up support for RCAF-manned Pinetree line stations, were in effect during this period.

Shipbuilding.—The light fleet carrier, *HMCS Bonaventure*, was commissioned on Jan. 17, 1957. The *Bonaventure* was built in Northern Ireland and is one of the most modern light fleet carriers afloat. It is equipped with an angled flight deck, mirror landing aids, steam catapult, and the latest electronic equipment. Three destroyer escorts were commissioned during each of the years 1956 and 1957. These are sister ships of *HMCS St. Laurent*, the lead ship of this Canadian design class which was completed in 1955. The lead ship of the second group of destroyer escorts, *HMCS Restigouche*, was also scheduled for commissioning in 1957 but was damaged in a collision during sea trials. Work continued on the other six ships of the second group. During 1957, authority was granted for the construction of two additional destroyer escorts and for the procurement of long lead components for four ships.

The first of six MCB-class coastal minesweepers was commissioned late in 1956 and the other five were commissioned in 1957. These ships, an advanced version of the earlier AMC-class, were designed in Canada to cope with the latest developments in mines. The second program for modernizing World War II frigates was nearly completed, with four of the five ships commissioned by the end of 1957. Various auxiliary craft were produced, including 150-foot sea-going tugs, steel crane lighters, inner patrol vessels, clearance diving vessels, power barges, and ammunition lighters. Fifty-two small boats were completed in 1956 and 40 in 1957, varying in size from 27-foot motor sea boats to 14-foot dinghies. Delivery of a later type United States torpedo manufactured in Canada began in 1957.

Weapons and Ammunition.—During 1956, final deliveries were made to the Canadian Army of the first order for 105mm howitzers, and a second order was placed with deliveries to begin in 1958. The delivery of 155mm howitzers to the Army was completed during 1957. A combined order for 105 and 155mm lifetime spares was placed during 1957 and deliveries will run concurrently with the main equipment. This action will eliminate the high costs involved in start-and-stop manufacture of small quantities of components. The production for the Army of rocket launchers and associated range finder sights was completed. In the small arms category, Canadian Arsenals Limited began delivery of the new 7.62mm C-1 (FN) rifle in October 1956. A 7.62mm light machine