

controlling navigation channels were 14 feet in depth; (3) from Lake Ontario to Lake Erie, a distance of 27 miles, controlling navigation channels were about 25 feet deep; and (4) from Lake Erie to the Head of the Lakes, a distance of 970 miles, controlling navigation channels were approximately 25 feet downbound and about 21 feet upbound. Thus, between the highly developed Great Lakes section, with a minimum channel of some 21 feet, and the ocean port facilities at Montreal, lay 114 miles of rapid-studded St. Lawrence River, navigable only through a chain of outmoded 14-foot canals capable of handling ships with a maximum capacity of 3,000 tons. The Seaway project was designed to break this bottleneck and extend 27-foot facilities from the Great Lakes to the sea. Seven new locks were required for the purpose—five built by the St. Lawrence Seaway Authority of Canada and two by the Saint Lawrence Seaway Development Corporation of the United States. These replace 21 inadequate locks between Montreal and Lake Ontario.

Also, because Canadian Government regulations require that all bridges spanning waters navigable by ocean-going ships have a minimum overhead clearance of 120 feet, extensive modifications are being made to seven bridges between Montreal and Lake St. Francis. In addition, a new high-level suspension bridge has been constructed across the south channel of the St. Lawrence River at Cornwall Island—the substructure by Canada's St. Lawrence Seaway Authority and the superstructure by the United States Seaway entity.

Associated with the St. Lawrence Seaway navigation project is the construction of a large hydro-electric power development in the International Rapids Section of the St. Lawrence River between Cornwall and Prescott. In July 1958, a 38,000-acre power pool was formed by means of control dams and by 1960 an international powerhouse will be generating about 2,200,000 h.p. of electric energy to be shared equally by Canada and the United States. Eleven of the designated 18 units began operation in the latter part of 1958.

After four years of sustained activity, work on the new waterway has been concluded, although some surface construction is not quite completed. On land and water, from the harbour of Montreal to the upper end of the Welland Ship Canal, a distance of 400 miles, as many as 6,000 men have been employed at one time on the Canadian navigation facilities.

In general, clearing and excavation was done in 1954 and 1955. In 1956, excavating and dredging continued and concrete work was started. But the high point in construction took place during 1957, a year signalized by the rise of structures. Installation of equipment and erection of bridges started in 1957 and continued throughout most of 1958. The first major completed structure was the Iroquois Lock in the International Rapids Section of the Seaway. This lock, the most westerly of the seven new Seaway locks has been in operation since May 22, 1958. The Canadian package freighter *Calgarian* was the first commercial vessel to use a Seaway lock. The two American locks near Massena, N. Y., were officially opened to traffic on July 4 of the same year. The other four Canadian locks, located in the Montreal area, neared completion late in 1958. The first lock from seaward is at St. Lambert and the next upstream at Côte Ste. Catherine, both located on the south shore of the St. Lawrence River about eight miles apart. These locks were completed in concrete early in 1958 and the installation of gates, electrical and control equipment, pumps, fenders and other required apparatus, quickly followed. Both locks underwent their initial tests during the autumn of 1958. Next upstream from the Côte Ste. Catherine lock are the Lower and Upper Beauharnois Locks.

Channel dredging has taken place in Montreal Harbour, in Lakes St. Louis and St. Francis, in the channels at Cornwall Island, in the Thousand Islands Section and in the Welland Ship Canal. As much as 56,000,000 cu. yards of rock and earth have been excavated and nearly 18,000,000 cu. yards have been dredged for the construction of the new locks, canals and channels. Canals will have a minimum width of 200 feet and a depth of 27 feet.

The costs of the Seaway and power projects are estimated to be in the vicinity of \$1,054,000,000 divided as follows: the St. Lawrence Seaway Authority of Canada,