

channels are 14 feet in depth; (3) from Lake Ontario to Lake Erie, a distance of 27 miles, controlling navigation channels are 25 feet deep; and (4) from Lake Erie to the Head of the Lakes, a distance of 970 miles, controlling navigation channels are 25 feet downbound and 21 feet upbound. Thus, between the highly developed Great Lakes section, which has a minimum channel of 21 feet, and the ocean port facilities at Montreal lie 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 only. The Seaway project will break this bottleneck and extend 27-foot facilities from the Great Lakes to the sea. Seven new locks are required for the purpose—five being built by the St. Lawrence Seaway Authority of Canada and two by the St. Lawrence Seaway Development Corporation of the United States. These will 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 must be made to seven bridges that exist between Montreal and Lake St. Francis. In addition, a new high-level suspension bridge is being constructed across the south channel of the St. Lawrence River at Cornwall Island—the substructure by the Canadian Authority and the superstructure by the United States entity.

Associated with the St. Lawrence Seaway navigation project is the construction of a large electric power development in the international rapids section of the St. Lawrence River between Cornwall and Prescott. A 38,000-acre power pool will be formed by means of control dams and an international powerhouse will generate about 2,200,000 h.p. of electric energy to be shared equally by Canada and the United States. (See pp. 582-583.)

The Seaway navigation project was 75 p.c. complete at the end of 1957. The most significant event in the progress of construction up to that date was the final test, on Nov. 27, 1957, of the Iroquois Lock, the most westerly of the seven new locks. Progressively, the lock gates, fenders, other machinery and controls were installed and tested and the lock was completed by late August, three months ahead of schedule. On the day of the final test, a ship was sailed into the lock, the lock chamber filled and the ship lifted some 12 feet to the present level of the St. Lawrence River above the lock and the nearby Iroquois control dam. The Iroquois Lock will provide access for ships passing from that part of the Seaway channel being dredged (from Lake Ontario down through the Thousand Islands) to the Seaway Lake downstream. The Lake, or power pool, is being created by the Iroquois control dam, and by the Long Sault control dam and the Cornwall-Barnhart Island powerhouse about 35 miles downstream. The Iroquois Lock will be in use sometime in 1958 as will the two United States locks near Massena, N.Y., opposite Cornwall.

The concrete structure of the St. Lambert Lock near Montreal, which is the first lock of the Seaway from seaward, was completed by the end of 1957, and the Lower Beauharnois Lock at the head of Lake St. Louis during the early months of 1958. The other two Canadian locks—Côte Ste. Catherine near the Lachine Rapids and the Upper Beauharnois Lock—are scheduled for completion later in 1958. The completed Seaway will be open to navigation in the spring of 1959.

An event of interest in connection with the bridge-raising projects took place on Oct. 20, 1957. The 250-foot trans-channel span of the Jacques Cartier Bridge, near Montreal, was raised to provide the required 120-foot clearance over the Seaway channel. In the early hours of a Sunday morning, when traffic was light, hydraulic jacks moved the old span horizontally to falsework erected downstream and then moved the new span, resting on falsework upstream, into place. The work was completed in four hours.

Channel dredging taking place in Montreal Harbour, Lake St. Louis, Lake St. Francis, in the channels at Cornwall Island and in the Thousand Islands section, and in the Welland Ship Canal was proceeding on schedule at the end of 1957.