

vessels using this portion of the seaway. Bulk commodities made up 91.7% of the total traffic through the section in 1976, the principal commodities through the St. Lawrence canals being iron ore, wheat, corn, barley, manufactured iron and steel, and coke. Traffic patterns show that 29.6% of the total movement was between Canadian ports, 43.3% between Canadian and United States ports, and 27% consisted of foreign trade to and from Canada and the United States. The small remainder was traffic between ports in the United States.

There were 5,892 transits through the Welland Canal in 1976, with a cargo volume of 23.1 million tonnes upbound and 35.1 million tonnes downbound; bulk cargo accounted for 94.1% of the traffic. Although many vessels pass through both the St. Lawrence and Welland canals on through trips, there is a substantial amount of local traffic between Great Lakes ports which involves only the Welland Canal. These movements are largely of iron ore, grain and coal. The Welland Canal traffic was 9.1 million tonnes greater than that reported for the Montreal-Lake Ontario section.

Income of the St. Lawrence Seaway Authority for the 12-month period ended March 31, 1977 amounted to \$27.4 million, made up of toll revenue of \$22.7 million assessed for transits through the seaway locks between Montreal and Lake Erie and sundry revenues (rentals, wharfage, bridge revenue) of \$4.7 million. Total expenses (excluding depreciation and interest) for the 12-month period ended March 31, 1977 amounted to \$32.6 million, of which operation and maintenance expenses amounted to \$22.8 million and regional and headquarters administration expenses \$9.8 million (Table 15.28).

Canadian Coast Guard

15.4.4

The Canadian Coast Guard, a component of CMTA, is headed by a commissioner. A headquarters organization and five regional offices have the following objectives: the support of waterborne commerce through facilities and services which promote the safe and efficient movement of marine traffic; the provision of the framework necessary to permit the marine industry to conduct its affairs in an orderly and efficient manner; the support of the objectives of other government departments and agencies as they apply to the marine field; the promotion of continuous improvement, innovation, growth or phase-out of various types of marine transportation and the associated ancillary services; and the recovery of financial costs from the users or other beneficiaries of facilities and services provided by the coast guard.

Each of the five Canadian Coast Guard regions has a number of field offices. The commissioner of the coast guard also has a functional responsibility for the Pacific, Great Lakes, Laurentian and Atlantic Pilotage authorities. Each authority is a Crown corporation established under the Pilotage Act.

The aids and waterways branch. Within the branch the marine aids division is responsible for policies and standards for all shore-based and floating aids to navigation. It provides policies and standards for marine traffic control systems and routing schemes and administers the Navigable Waters Protection Act. The waterways development division is responsible for planning, research and development on navigable waterways, hydraulic model activities, hydraulic engineering expertise and water resources management.

Ship safety branch is concerned with the safety of life and property at sea and the protection of the environment from detrimental effects of ships through the following divisions. The Board of Steamship Inspection employs steamship inspectors; develops standards for the design and construction of ships, their machinery, fittings and equipment, and translates these standards into statutes and regulations to be followed by builders and operators of vessels; and establishes procedures to ensure that these standards are met. Nautical services division develops standards for loading, unloading and stowing of cargo, quantities of cargo, work practices, number and qualifications of personnel, discipline aboard ship, and navigating and operating procedures, including traffic routing; operates the registry of ships and administers the licensing of small vessels; reviews measurement of ships; and protects the interests of the owners of