During the years of World War One, Canada Steamship Lines sold off many of its best canallers for war service on salt water. This hardly was suprising in that Capt. Norcross not only was the director of the Canadian war shipping administration, but remained the managing director of C.S.L. at the same time. Many of the C.S.L. ships that went to war were lost, and the compensation received by the company went a long way toward building a new fleet of canal-sized ships after the war. A great many of the fleet's wooden boats, which had remained with C.S.L. during the war, were lost by accident in the following years, with the remainder being sent to the bone yard.

All indications are that EDMONTON remained in lake operation for Canada Steamship Lines during World War One, but BEAVERTON reportedly was transferred to the ownership of the Canadian Government for war service in 1917. She was returned to C.S.L. ownership in 1919, having survived the rigours of war service.

By the 1920s, BEAVERTON and EDMONTON had been given enclosed upper pilothouses, as open navigation bridges no longer were considered necessary for clear vision for the navigation officers; it no longer was deemed desirable for them to be roasted by the sun during the summer, nor to be frozen half to death in late fall or early spring storms while standing in barrels of straw! The original pilothouse fronts were plated in, and only a few portholes left to admit daylight to what became the Gyro Room, so named because it latterly housed the gyrocompass.

The new upper pilothouse on each steamer had nine windows in its curved front, a door in either side, and a sunvisor over the windows. The new upper houses were not the same on both ships, however, and differed in several details. EDMONTON's new house had larger windows, and overhung the lower cabin slightly on the curve at either side. EDMONTON's sunvisor ran back over the side doors, while BEAVERTON's did not, and only BEAVERTON had her name painted across the front of the new house until the end of her career. Neither ship ever had a steel catwalk built around the new upper house, as many turret-cabined lakers did.

During the early 1920s, C.S.L. cabins became white, while stacks were painted orange-red with a white band and black top. Beginning in 1927, forecastles became white, and the C.S.L. diamond insignia on the bows was replaced by large 'Canada Steamship Lines' billboards in white letters down either side. Each ship was fitted with an elevator to help move package freight up and down from the spar deck to the main and 'tween decks. The elevator was placed between the fourth and fifth hatches, and the mainmast was relocated to a spot just abaft the elevator. The lower portion of each mast remained buff, but the tip of the foremast became white, while the top half of the main was painted black.

By this time, of course, both BEAVERTON and EDMONTON had given up their New-castle registry, and their home port had become Montreal, as was the case with most C.S.L. canallers previously registered in the United Kingdom.

The two steamers settled in to many years of steady service for C.S.L., running package freight westbound up the lakes and grain down. As far as we know, they never ran on the Montreal-Toronto-Hamilton express route, and so they only appeared at Toronto on occasions when a non-express general cargo brought them in, or when there was grain to unload here. Occasionally, one or other of them would winter here, usually here with storage grain for one of the local elevators. Both steamers remained safely on the Great Lakes during the Second World War.

As the 1950s came and then wore onward, BEAVERTON and EDMONTON, along with other canallers of their vintage, such as CANADIAN, CALGARIAN and KENORA, became "fringe" boats in the C.S.L. fleet. That is, they saw less and less service and frequently were laid up, operating only when the demand for tonnage was high, particularly in the spring and autumn, when the grain was moving.