It was about the time of the beginning of the "police action" in Korea in 1950 that ENDERS M. VOORHEES suffered the worst accident ever to befall a "Super" whilst operating on the lakes. On Friday, November 24, 1950, the VOORHEES was off St. Helena Island, just west of the Straits of Mackinac, downbound for South Chicago with a cargo of iron ore. The weather was bad, with visibility obstructed by snow. Shortly after 1:00 p.m., the upbound ELTON HOYT II (52), (a) WILLIAM P. SNYDER (26), collided with the VOORHEES. Severe damage was occasioned to both vessels, and as they were in sinking condition, they were both beached in the McGulpin Point area. Both steamers subsequently were refloated and repaired, the VOORHEES being returned to service the following season. ELTON HOYT II, which was a member of the fleet of the Interlake Steamship Company, was renamed (c) ALEX D. CHISHOLM in 1952 and served as such until 1966, when she became the cement carrier (d) MEDUSA CHALLENGER, under which name the 84-year-old steamer still operates.

The "Supers" carried the usual U.S. Steel colours during their active lifetimes. Their hulls were red and their cabins were white with dark green trim. The stacks were silver, with a wide black smokeband at the top. At first, there was nothing painted down the sides of the ships, but by the late 1940s, there appeared on the sides of each vessel the name "Pittsburgh Steamship Company", billboard-style, in large white letters. In addition, the letters 'USS' appeared in white inside a white ring at each end of the billboard. During the 1952 season, the name down the sides of the fleet's ships was altered to "Pittsburgh Steamship Division" to reflect a corporate restructuring. By the 1957 season, the billboards had disappeared completely, and the letters 'USS' appeared inside a small ring which was placed under the ship's name on the forecastle.

During the summer of 1967, the "Pittsburgh" and "Bradley" fleets were unified as the United States Steel Corporation Great Lakes Fleet (later known as the USS Great Lakes Fleet Inc.), although the Bradley self-unloaders retained their distinctive grey hulls. It was at this time that the ring and 'USS' were added in silver on the black smokeband on the stack of each of the vessels of the combined fleet. This latter alteration did not meet with immediate wide approval, for it was a change in a stack design that had remained the same for well over half a century, and the logo appeared to have been placed rather too high up on the stack. Nevertheless, the change came to be accepted in due course of time, and it remained as part of the fleet livery through the 1989 season.

The 1950s were busy years for the "Supers", and even toward the middle and latter part of the decade, when some of the older and less efficient carriers of the fleet could finally be retired from service, the FRASER and her four sisterships kept on sailing. The 1959 season, however, saw much of the fleet laid up as a result of a lengthy strike in the steel industry, and it was not until October that some of the ships were fitted out. The strike, in fact, hit all of the U.S. ore fleets very hard, and it resulted in the permanent retirement of a number of familiar steamers which were past their prime but which had survived as a consequence of the succession of "national emergencies".

1959 also was the year in which the new St. Lawrence Seaway was opened to traffic, an event that would forever change the complexion of the lake shipping industry. Several of the U.S. upper lake fleets began to consider running their ships in the Seaway, but it was not until 1962 that U.S. Steel began trading its boats down the St. Lawrence Canals. The "Supers" were to make more Seaway trips in the years that followed than any other ships of the company, although the "Triple-A" Class boats did see some Seaway service as also did some of the older fleet vessels that had been repowered. Their early Seaway voyages took the "Supers" downbound in ballast to Port Cartier, Quebec, where they would load ore for Lake Erie or Lake Michigan ports. It was not until 1967, when the new grain elevator opened at Baie Comeau, Quebec, that the "Supers" would take grain out of the lakes on the downbound portion of their St. Lawrence River trips.