

the operating capacity of a terminal increases at a greater rate than the proportional increase in the number of berths.

Recorded observations in 1956-57 at large modern terminals in Pacific coast ports of the United States indicate an annual performance figure of 94,000 tons per berth for general cargo. In 1955-56, at a principal Atlantic coast port, performance records of both antiquated as well as the most modern berthing facilities shows that the average amount of cargo handled per berth per year was 59,444 tons. In 1957, the annual average volume of general cargo handled per berth at the same port increased to 63,055 tons. Considering all three U.S. coastal regions, an estimate of 75,000 tons of general cargo per berth per year was considered to be a fair average for the base year 1960.

It is expected that during the next 25 years improved conditions should result in an increase of general cargo handling efficiency. Accordingly, it is estimated that the handling rate at terminals on the Atlantic, gulf, and Pacific coasts will increase by 5,000 tons per berth for each 5-year period up to 81,000 tons per berth by 1966 and as high as 100,000 tons per berth by 1985.

It is estimated that the average annual tonnage capability of a Great Lakes berth would be about 20 to 25 percent less than the 75,000 tons per berth estimate for the three ocean coasts, or approximately 60,000 tons per berth annually for base year 1960. It is estimated that Great Lakes general cargo capacity will increase from the estimated 60,000 tons per berth per year in 1960 to 78,000 tons in 1966, thus reaching nearly the same berth capacity estimated for ocean coast ports for the same year.

A bulk petroleum berthing facility which is capable of loading and/or discharging petroleum products at a rate of 5,625 barrels or more per hour is considered to have a maximum capacity of 15,000 tons per 24-hour day. This is based on the assumption that the average T2 tanker can be loaded and/or discharged in one 24-hour day. By averaging the number of berths with a capability of handling less than 5,625 barrels per hour, it is estimated that each such berth has a daily maximum capacity of 9,500 tons.

Based on the number of petroleum berths and annual total capacity of 1,642.5 million tons estimated in base year 1960, the annual petroleum tonnage capacity of the two classes of petroleum berths on three ocean coasts is 3.83 million tons for a berth of 15,000 tons per day capacity ($15,000 \times 70 \text{ percent} \times 365$), and an average of 2.42 million tons for a berth of 9,500 tons per day capacity ($9,500 \times 70 \text{ percent} \times 365$).

The annual average petroleum tonnage capability on the Great Lakes is calculated to be 1.59 million tons per berth of 9,500 tons per day capacity ($9,500 \times 70 \text{ percent} \times 240 \text{ days}$).

It is estimated that, based on the storage capacities of the individual grain elevators on the Atlantic coast, an average annual minimum turnover of 5.6 times or a minimum volume of some 250 million bushels is required to keep the port elevators at a profitable level of operation. On the gulf coast these figures are 5.8 and 180 million bushels, respectively. Assuming an average turnover of grain through