MARINE DEPARTMENT
SUN OIL COMPANY

SUNOCO®

The Marine Department which is a division of the Sun Oil Company's Transportation Section, consists of twelve ocean-going vessels with a total capacity of crude oil of 2,385,000 barrels, and a coastal fleet of eight ships with a total capacity of clean products of 99,800 barrels. The entire personnel of the department in 1962 shows 814 men on its payroll. The Sun Oil fleet flies under the American flag, the only major oil company operating its whole fleet under its own country's flag.

The purpose of an oil company operating its own ships is two-fold: First, to transport the crude oil from the fields to its refinery and distribution of its clean products to terminals so equipped to receive them; secondly, to guarantee a stable rate of cost for each barrel of oil, irrespective of accelerated cost per barrel due to the supply and demand of tankships in periods of crisis and accelerated business. It also allows a company such as ours, a stable and reliable personnel employed by the company itself.

In years past all transportation of crude from Texas was done by tanker, pipelines were still to be built. During the construction of pipelines a serious competitor came into being for the main coastal runs of the ships. However, tankships through the competition of a pipeline had to develop a more proficient unit or face obsolescence, except in the foreign runs where no pipeline exists. The answer was found since the end of World War II in the construction of the giant supertanker. What is a supertanker? During the last World War the standard tanker was the T-2 carrying approximately 122,000 barrels of crude oil at a speed of 15 knots. This vessel was 524 feet long with a beam of 68 feet. Today the "Pennsylvania Sun" or "Texas Sun" in the company's service carries 364,800 barrels of crude at 18-1/2 knots with a length of 745 feet and a beam of 102 feet. It is interesting to note only six extra men are carried on the big ships than the smaller T-2. With their greater capacity and ability to handle multi-grades of crude oil in one trip, the supertanker is still cheaper and more efficient than the crude oil pipelines. The limit of size on a coastal supertanker is the depth of water provided in the rivers and harbors used in loading and discharging her cargo. It must be remembered, that oil tankers have the deepest drafts of any type ship afloat. Actual restriction on

size has no limit on ocean voyages where deep harbors are provided, as ships are used today with capacities of 800,000 barrels.

Now that we have established some indication of the size of today's vessel, let's go back to the year 1901 when the SS "Paraguay", the first Sun Oil tanker, delivered her cargo of crude oil to Marcus Hook. She was 242 feet long with a capacity of 18,000 barrels. To equal the one 10-day trip of the "Texas Sun", the "Paraguay" would have had to make 20 trips or well over an entire year's operation.

After the SS "Paraguay" in 1901, came the SS "Toledo" in 1902. Both of these ships were built on the Great Lakes and were converted by the company into oil tankers from an ore carrier. The company then chartered the steel schooner "Thomas W. Lawson" and converted her from a coal carrier to an oil tanker. She was the largest schooner rigged ship in the world with an overall length of 403 feet and a beam of 50 feet, and boasted seven masts 125 feet high. Her speed under sail was greater than the steamships of the company, making 12 knots where they only made nine. Although not a company ship, she was one of the most colorful vessels of her time. However, her career ended on Friday, the 13th, 1907, near the Scilly Islands off Lands End, England, when she was driven ashore by a storm and was lost.

The next ship in the fleet was the first one constructed as a tanker. Built at New Castle-on-the-Tyne, England, in 1907, and named the "British Sun". She had a successful career until a German torpedo sunk her in the Mediterranean in World War I. She was the only ship of the fleet ever built in a foreign country.

In 1907 the company built at Newport News, the largest tanker in the world, the first SS "Sun" with a capacity of 51,600 barrels. At that time, people in the industry were afraid her size was so great she would break in two; however, she sailed successfully for 20 years in the company's service.

After the SS "Sun", the company purchased the steel schooner "Delaware Sun" in 1912, and converted her to a tanker - once again sail was back in business. The "Delaware Sun", originally the

"W. L. Douglas", was built by the same people as the "Thomas W. Lawson" in Quincy, Mass. in 1902. She had six masts and was schooner rigged. Her career partly consisted of being towed by a steam tanker and sometimes sailing on her own. For example, from England to Sabine Pass, Texas a good run under sail was 45 days. Her capacity was 37,400 barrels of crude, and although she represented a colorful chapter she was not competitive with her steam-driven sisters. In 1917 she capsized off the jetties at Sabine Pass, Texas and all efforts to salvage her failed and she finally disappeared in the sandy bottom. After the "Delaware Sun" came the steamers "Atlantic Sun", "Santa Rita", "Sunoil", and "Santa Maria". These were vessels of various origin, some tankers, some converted ore boats. For example, the "Santa Rita" was a two-stack vessel built on the Great Lakes and had all the appearance of a freighter with the bridge and engine midship instead of aft. Each ship had its individual stories, some tragic and some humorous. The "Santa Maria" was a coal burner as were other ships of her time. Off the East Coast due to delays in storms, she ran out of fuel. On advice of the office to proceed regardless, the Master ordered all the wood fittings and furniture broken up and fed into the boilers. She made port!

World War I took three ships as her toll, all torpedoed by the German submarines. They were the "British Sun", "Santa Maria" and "Atlantic Sun". Amazingly enough no crew members lost their lives, all escaping to lifeboats.

In 1917 the Sun Shipyard was established by the company at Chester, Penna., and the first all company built tanker, the SS "Chester Sun", was launched with a capacity of 81,000 barrels. This was followed by the SS "Sabine Sun" in 1918 and the SS "Sunbeam" in 1919. All ships now were designed and built as oil tankers which included the second SS "Atlantic Sun, SS "J. N. Pew", SS "Delaware Sun" and SS "Pennsylvania Sun". The size of these ships steadily grew to a 110,000 barrel capacity. A new trend in the industry was started by the Sun Oil Company in outfitting the crew quarters, gone was the day of the crowded forecastles of the sailing ship era, seamen now had their own rooms.

In 1927 with the construction of the MS "Sunoil" in Chester, Sun Oil introduced the opposed piston Sun Doxford Diesel engine. This began a long line of Diesel ships carrying such names as the "Bidwell" which was converted from steam to Diesel, the MS "Sun", MS "Pacific Sun", MS "Chester Sun", MS "Eastern Sun", MS "Western Sun", MS "Northern Sun", MS "Southern Sun", MS "Mercury Sun", MS "Texas Sun", MS "Pennsylvania Sun", MS "America Sun", both MS "Atlantic Suns" and the MS "Sabine Sun". Capacities of these ships rose to 156, 000 barrel capacity and lengths of 545 feet overall.

One of the most colorful ships of this period was the MS "Bidwell" built in 1920 by the War Shipping Board in Baltimore, Maryland. Purchased by the company and converted to a Diesel ship in 1923, probably no vessel in the Merchant Marine became such a familiar sight in ports all over the world. Her career almost came to an end by the tragic explosion in her tanks at Marcus Hook on February 4, 1932. The death of her men in this explosion, started the company on a road to find an inert gas system to prevent such a tragedy happening again. No one dies in vain, and in the ensuing years of peace time and war, many lives were saved on Sun Oil Company ships through the introduction of this inert gas system. Once again the stout-hearted old ship took up her work and then came the war. One dark night off Cape Hatteras, a Nazi submarine sent a torpedo into her port side ripping her deck into shambles and one crewman was lost. Finished? No, once again repaired she continued her work. Finally after 33 years of Sun Oil Company service and 38 years of sailing, she went to Maracaibo, Venezuela as a station ship where she still is working. The stubby, cocky little ship endeared herself to many men who sailed on her and she will always be remembered, wherever seamen gather to talk of ships and voyages.

In World War II, the ships went to war. Our crews learnt of ports which even the geography books never taught. Few groups of men ever sailed into the number of war zones which the company's men found themselves. There was a price - first was the SS "J. N. Pew" off the coast of Aruba with thirty-three men lost. The saga of the survivors in lifeboats read as if it was a story by Conrad. Then the MS "Sun" in the same area was torpedoed, reboarded by her crew and salvaged. After repairs were completed and before she ever reloaded another cargo was torpedoed off the mouth of the Missis-

sippi, no casualties on either of the incidents. After the second torpedoeing, she was again repaired and sailed throughout the war.

Next in 1942, the MS "Atlantic Sun" was torpedoed off Cape Lookout, North Carolina with no loss of life. She was also brought back into port to be salvaged. However, this same ship in 1943 off the coast of Newfoundland in the winter North Atlantic was torpedoed in the bow and midship, splitting in half. Master and deck officers were lost but the stern end remained afloat. The remaining crew under the engineers, reboarded her and attempted to bring the ship stern first into Halifax. The sub placed another torpedo in the engineroom and she disappeared with all hands save one - he was picked up by the sub and taken to Germany.

The MS "Mercury Sun" in 1942, while in the Yucatan Channel was torpedoed and sunk. Her Master and five men were lost. In the same year the MS "Pennsylvania Sun" received a torpedo in the dead of night off Key West, Florida. Two men lost their lives while the balance escaped the blazing ship by lifeboats. Still remaining afloat, the fire was put out with the help of the Navy. With a volunteer crew of Sun men who reboarded her, she made Key West and was repaired, finishing the war carrying supplies to the South Pacific.

In 1942 the old queen, the MS "Bidwell", received her torpedo off Cape Lookout with the loss of one man. Her crew brought her back to be rebuilt. Next in 1943 was the MS "Sunoil" torpedoed in the North Atlantic on her way to England. She went down with all hands. Other than the above ships, the MS "Sunoco", a small coastal tanker, blew up in New York with the loss of ten men. She was salvaged and still sails for the company. Many of the other vessels were under submarine attack or plane attack in all areas of the world, but fortunately escaped. However, with their men they did a job seldom duplicated. In the above cases, no names are mentioned. It is rather a tribute to the loyalty and endeavor of men of the Sun Oil Company as a whole which the credit is due. To the extra something called character or plain guts which has made the company so proud of its Marine Department. The untold hours of peril at sea, or days and nights spent by the shore personnel in repairing the vessels, regardless of where it was done, provides the story of a Sun Company sailor.

After the war came the MS "Dynafuel", a neat 30,000 barrel coastal tanker. Coastal tanker? Not quite, as her side trips to Istanbul and Alexandria, Egypt with lube oils christened her logbooks with far away places. Next came the small 12,000 barrel coastal tankers "Mystic Sun" and "Maumee Sun". The first big break-through in the Sun Oil Company's fleet came in 1953, with the sailing of the first of the 30,000 ton supertankers, the SS "Delaware Sun". Besides the "Delaware Sun" there are the "New Jersey Sun", "Eastern Sun" and "Western Sun". These four ships are one of the finest class of vessels acquired by the company. Their initiation to the oceans took them to Suez, Middle East, Persian Gulf, Sumatra, Cape of Good Hope, England, Japan, Philippines and the Hawaiian Islands. They were the first of the really luxury-class vessels whose accommodations most liners never equal with air-conditioning for the comfort of the crews. The last two are the flagships of the fleet, "Pennsylvania Sun" and "Texas Sun" of 50,000 deadweight tons. After running to the Persian Gulf and Venezuela, they now run to Texas to Marcus Hook on a railroad schedule. It's a long way from the SS "Paraguay" to the "Texas Sun", not only of progress in construction and science, but in the adventure of living and being a Sun sailor.

In closing we have mentioned ships, but what of the men who man them? No mention need be made of personalities themselves; however few men ever, once in their life have the responsibilities the Master, Chief Engineer and their officers go through on a day-by-day basis. The command of a ship carries more than the title of Captain, his is the responsibility alone of docking, undocking, hurricanes, currents, international requirements, the safety and comfort of his crew, the ship itself and the company's interests. This is done in areas outside of what is known as the home office. To the Chief Engineer the operation of his complicated power plant is his alone. No plea of "please advise" to the office can relieve him the responsibility and requirements as the man on the job. Where do these men come from? From the forecastle of the ships they command, perhaps from a messman, ordinary seaman or wiper. It's the old-fashioned way of the American, to apply the experience gained by coming up the ladder to the top job. This is followed into the management personnel of the department ashore, scratch the surface and you have a sailor who came up through the "hawse pipe".

To the men of the small coastal tankers, it is a way of life by itself. Few big-ship men ever make out handling the boats up small rivers and harbors such as these boats operate in. Besides their license as an officer, their pilot endorsements show the many years of experience in bays, rivers and sounds, familiarity of local markings, currents and navigation laws peculiar to these areas.

The seamen today may not know how to secure a fore topsail or reef a mainsail in a storm, but the ability to use electronic navigation as it is today is a science in itself. The sea leading to all ports of the world, are as familar to him as they were to the men of the "Yankee Clippers."

The company itself by the presence of its own fleet, knows that its oil requirements can be met, whether the oil comes from the U.S. Gulf coast, Venezuela, deserts of Arabia or the jungles of Sumatra. It's only part of the Sunoco products story, but an important and respected part of it.

SUN OIL COMPANY FLEET

Ocean Fleet

MS America Sun	17,955 deadweight tons
MS Atlantic Sun	17,910 deadweight tons
SS Delaware Sun	30,206 deadweight tons
SS Eastern Sun	30,200 deadweight tons
SS Maryland Sun	16,612 deadweight tons
SS New Jersey Sun	30,203 deadweight tons
SS Ohio Sun	16,772 deadweight tons
SS Pennsylvania Sun	50,262 deadweight tons
MS Sabine Sun	17,930 deadweight tons
SS Sunoil	16,607 deadweight tons
SS Texas Sun	50,265 deadweight tons
SS Western Sun	30,200 deadweight tons

Coastal Fleet

MS Cayuga Sun	741 deadweight tons
MS Dynafuel	4,180 deadweight tons
MS Maumee Sun	1,368 deadweight tons
MS Mystic Sun	1,368 deadweight tons
MS Passaic Sun	838 deadweight tons
MS Raritan Sun	838 deadweight tons
MS Seneca Sun	741 deadweight tons
MS Sunoco	1,822 deadweight tons

SHIPS OF THE OCEAN FLEET OF THE SUN OIL COMPANY FROM ITS FIRST VESSEL TO ITS NEWEST, GIVING - YEAR ACQUIRED, PRESENT STATUS, TONNAGE AND CAPACITY IN CRUDE OIL

SS Paraguay	1901	Sold	1927	18,000 Bbls.	
SS Toledo	1902	Sold	1919	28,500 Bbls.	
* Thomas W. Lawson	1905	Sunk	1907	30,000 Bbls.	Storm off Lands End
SS British Sun	1907	Sunk	1917	51,370 Bbls.	Torpedoed World War I
SS Sun	1907	Sold	1927	51,600 Bbls.	
** Delaware Sun	1912	Sunk	1917	37,400 Bbls.	Sunk off Sabine Pass
SS Atlantic Sun	1915	Sunk	1918	21,675 Bbls.	Torpedoed World War I
SS Santa Rita	1915	Sold	1920	53,000 Bbls.	
SS Sunoil	1916	Sold	1927	74,750 Bbls.	
SS Santa Maria	1917	Sunk	1918	53,000 Bbls.	Torpedoed World War I
SS Chester Sun	1918	Sold	1929	81,458 Bbls.	
SS Sabine Sun	1918	Sold	1929	80,250 Bbls.	
SS Sunbeam	1919	Sold	1939	81,078 Bbls.	
MS Atlantic Sun	1920	Sold	1939	78,243 Bbls.	
SS J. N. Pew	1921	Sunk	1942	102,186 Bbls.	Torpedoed World War II
SS Delaware Sun	1922	Sold	1950	109,000 Bbls.	
SS Pennsylvania Sun	1923	Sold	1938	110,248 Bbls.	
MS Bidwell	1925	Maracaibo		75,000 Bbls.	Torpedoed World War II
MS Sunoil	1927	Sunk	1927	116,447 Bbls.	Torpedoed World War II
MS Sun	1928	Sold	1954	104,000 Bbls.	Torpedoed Twice World War II

MS Pacific Sun	1929	Sold	1949	114,365 Bbls.	
MS Chester Sun	1930	Sold	1954	104,000 Bbls.	
MS Eastern Sun	1930	Sold	1954	104,000 Bbls.	
MS Western Sun	1930	Sold	1950	114,365 Bbls.	
MS Northern Sun	1931	Sold	1955	105,000 Bbls.	
MS Southern Sun	1931	Sold	1954	106,000 Bbls.	
MS Mercury Sun	1931	Sunk	1942	117,000 Bbls.	Torpedoed World War II
MS Texas Sun	1937	Sold	1959	112,000 Bbls.	
MS Pennsylvania Sun	1938	Sold	1955	157,248 Bbls.	Torpedoed World War II
MS America Sun	1940	In service		156,000 Bbls.	
MS Atlantic Sun	1941	Sunk	1943	156,000 Bbls.	Torpedoed twice World War II
MS Sabine Sun	1942	In service		156,000 Bbls.	
SS Sunoil	1946	In service		141,000 Bbls.	
SS Mercury Sun	1946	Sold	1960	141,000 Bbls.	
SS Maryland Sun	1947	In service		141,000 Bbls.	
SS Michigan Sun	1947	Sold	1960	141,000 Bbls.	
MS Atlantic Sun	1947	In service		156,840 Bbls.	
SS Ohio Sun	1947	In service		141,000 Bbls.	
SS Louisiana Sun	1948	Sold 1960		141,000 Bbls.	
SS Delaware Sun	1953	In service		251,114 Bbls.	
SS New Jersey Sun	1953	In service		251,114 Bbls.	
SS Western Sun	1954	In service		251,114 Bbls.	
SS Eastern Sun	1955	In service		251,114 Bbls.	
SS Pennsylvania Sun	1959	In service		373,750 Bbls.	
SS Texas Sun	1960	In service		373,750 Bbls.	