

# Tugboat Operator Saves \$s with Improved Lubricating Oil

Use of high-alkaline detergent-dispersant lubricant developed by Mobil Oil Company resulted in substantial savings in overhaul and maintenance for Red Star Towing & Transportation

One of New York Harbor's toughest assignments is performed by Red Star Towing and Transportation Company. Maneuvering a dozen barges filled with stone and gravel demands frequent use of all available power from the diesels in the tugs used for this service. Despite this demanding operation, tug maintenance costs have been reduced and overhauls have been extended from the former 13,000 hours to 20,000 hours.

Red Star's tug engines include General Motors 1,640-hp and Fairbanks-Morse 1,800-hp diesels. The company also operates an 1,800-hp pusher-type towboat acquired this year, and four less powerful tugboats used in harbor service.

## Substantial Savings

The switch to a high-alkaline, detergent-dispersant lubricant developed by Mobil Oil Company is saving the towing company large sums of money. Doubling filter life saves a

substantial amount. With no acid-formed sludge or aggregation of contaminants to plug filters, they need be changed only at 2-month intervals instead of monthly. At \$90 per change, Red Star saves \$540 a year per boat for all 10 vessels.

Red Star now can schedule engine overhauls every 3 years (about 20,000 operating hours) instead of every 2 years. Costs are likely to be less also. Because of reduced wear, it is not always necessary to replace cylinder liners as it almost always was before the new lubricant was used. With overhauls averaging \$30,000, the company is saving some \$5,000 per boat on an annual basis.

The towing company decided to go after heavy-duty business several years ago, and converted most of its tug fleet to high-power units, and its barge fleet to all-welded steel vessels. Red Star President Robert W. Sanders, faced with rising operating costs, felt that the best solution was more power and larger tows. An increase in unit productivity was his

goal in upgrading the Red Star tugboat fleet.

Three of the older tugs with 805-hp engines were repowered with the 1,640- and 1,800-hp diesels. More compact per horsepower, the new engines fit into the older tugs without structural alterations.

## Maintenance Headaches Cured

With the introduction of the high-power diesels into its fleet in the late 1950's, Red Star, like other tug operators, found maintenance a higher cost item. And despite the use of detergent oils especially developed for the new engines, maintenance still gave the company's chief engineers more than their share of headaches.

The biggest problem was plugged ports. Every couple of weeks combustion deposits would obstruct ports, reducing response to demands for maximum power. With ports partially obstructed, efficiency went down and fuel consumption rose.

Chipping ports clean was a time-consuming, dirty job that took men away from their regular tasks of keeping the engines adjusted for maximum efficiency and keeping the engine room shipshape. Chiefs tried to schedule maintenance during fueling stops and other unavoidable lay-overs, but often this time was not adequate. Red Star's busy schedule doesn't in-

clude much time at the dock, and tugs were frequently out of service only because port cleaning was necessary. Such maintenance was costing the towing company the normal operating income during the time required to clean ports.

Red Star agreed to try in its tugs a new alkaline-type detergent-dispersant lubricant developed by Mobil Oil Company. Mobil wanted to prove the lubricant's ability to keep engines clean in tug and towboat service, and asked Red Star to participate because of the severity of the towing company's service.

## Overhauls Reduced

The lubricant, a Mobilgard "12" oil, has reduced port cleaning from once every 10-14 days to once every 3-6 months. It also enables Red Star tugs to run twice as long between lube-oil filter changes, and 50 percent longer between engine overhauls.

Mobilgard differs from the conventional detergent-type oil previously used by Red Star in that it has an alkaline reserve, attained through special additives. This prevents acid attack on cylinder liners and other machined parts, and neutralizes combustion acids. It also prevents acid attack on the lubricant itself, prolonging lube life.

Mobilgard is also a superior detergent-dispersant. Dispersion of the products of combustion throughout the lubricant in small particles keeps them from building into deposits before they can be filtered out during normal engine operation.

## Lab Tests of Oil

While Mobilgard is now the standard lubricant in Red Star's fleet, chiefs still follow the sampling practice initiated during the trial period. After 2,000 to 3,000 hours of operation, a sample of the lube oil is taken from the sump while the engine is running. These samples are sent to Mobil's Brooklyn Technical Service Laboratory, where a series of tests are made to determine the condition of the oil.

The results of these tests, with Mobil's report on the serviceability of the oil, are reported to the operator. If the condition of the oil warrants, Mobil would recommend corrective measures. This information, along with other data such as operating temperatures, pressures, etc.,



PUSHER TOWBOAT "Rockland County" handles big tows of stone and gravel with ease

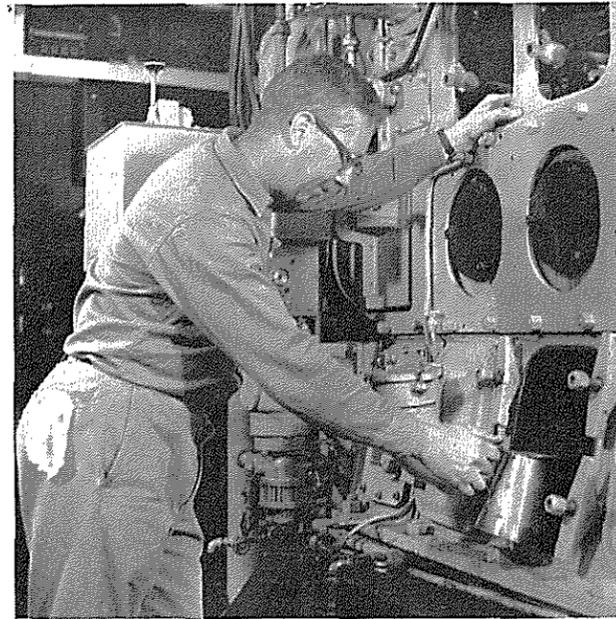
help the tug company to predict future overhaul dates.

These lab tests, which are a free service to Mobil's customers, indicate the immediate condition of the oil samples. The chief on each tug follows closely the oil condition from report to report. The trend of the oil condition is an indication of engine condition, and helps the chief to pinpoint troubles. The tests would also determine when lube oil should be changed, but no change between overhauls has been necessary since Red Star began using Mobilgard in

all its diesel engines 3 years ago.

Mr. Sanders states that the combination of higher-powered engines and the improved lubricant results in greater boat availability in fulfilling the company's contract for hauling stone and gravel down the Hudson, and in other harbor assignments. "We have found that using a lubricant especially designed for our engines has reduced our maintenance costs considerably and practically eliminated the maintenance headaches. Our operation is definitely more efficient."

End



REGULAR OVERHAUL of Red Star's diesel tugs has been extended to 3 years from former 2-year interval. Samples of lube oil are sent periodically to Mobil Oil Company's Brooklyn, N. Y., Technical Service Laboratory for analysis to determine condition