

## Towage



A Svitzer tug in action on the River Thames, London: the results of the tug operator's fuel-saving investigation has given Svitzer tug crews and masters more responsibility for the fuel performance of their vessels.

Rob Sturges

# Svitzer eyes slow steaming

**Leading tug operator has fitted an engine fuel monitoring system to some of its fleet as part of an in-depth investigation looking at ways of conserving fuel consumption**



GAVIN VAN MARLE

THE mania for slow steaming is making its way through every part of the shipping industry. The latest area where its benefits are being studied is the tug sector, with leading operator Svitzer undertaking an in-depth investigation into the fuel consumption of parts of its UK-based fleet.

**“So far we've seen a 20% reduction in fuel consumption, but I think that is where there has been lots of free-running”**

Richard Young, Svitzer

However, given the incredibly varied work and speeds that a tug can go through in the space of just a few minutes, slow steaming is far more difficult to apply than liner operators have found.

Initially, there was a general aim to conserve, but the scope of the company's research soon broadened, says Svitzer chief operations officer Nick Newton.

“We started looking at how much fuel we are using and how to reduce fuel consumption, but we very quickly found we could learn a lot more about our operations than just the amount of fuel – it has

become a much bigger project that has become about evaluating the whole of our operations,” he says.

In March, the company fitted the first of the engine fuel monitoring units provided by diesel engine firm Royston, the first step in what has become an in-depth analysis of the way a tug operates and the areas in which efficiency could be improved.

“We would compromise the service if there was just a blanket order to conserve fuel,” says Mr Newton. “What we did not want to do was to compromise the service.”

Such a blanket order would be unlikely to have the desired effect because of the variety of speeds tugs operate at and the variety of different tug types within Svitzer's fleet.

“We felt there were some improvements that could be made when it came to the tugs running to jobs, because it is important to remember that tugs are not actually designed for free-running, but towage and vessel operations,” says Svitzer technical compliance manager Richard Young.

“Due to this study we have been able to split the fuel consumption of towing from free-running.”

The real result has been the acquisition of a vast amount of raw data that is not only allowing the company to plan more effectively its operations, but also seems to be giving its crews and masters more responsibility for the fuel performance of the vessels.

Mr Young adds: “It is a simple but incredibly effective system, and we are now using the knowledge of the masters to interpret that data. We knew how much fuel we were using but we did not know why.”

“We knew that at such and such a speed would use such and such an amount of fuel, but what you also have are factors such as wind and tide and those things we could not measure.”

By delivering the raw data to the masters and giving them the

## Royston Enginei fuel monitoring system shows its strengths

THE Enginei fuel monitoring system has been developed over the past four years by diesel engine services company Royston in conjunction with a partly European Union-funded project at the University of Newcastle, writes Gavin van Marle.

The system continuously monitors the fuel consumption of engines through a pair of positive displacement fuel flow meters that are permanently installed into the vessel's fuel pipework.

It is also connected to a GPS unit that records the vessel's speed and position, and which displays fuel consumption instantaneously on the vessel's bridge and also transfers the fuel consumption and position data to shore for reporting and analysis.

The fuel consumption value is updated every 60 seconds, and is recorded into the memory of the Enginei unit along with GPS position data, and at 15-minute intervals the unit attempts to make contact with the shore-based Enginei server computer using the ship's internet connection.

freedom to tell the story behind the numbers, better operating efficiency almost automatically follows.

“The decision to run at slower speeds is entirely the master's. All we have done is put the data to them in a manner that they can use on a day-to-day basis,” Mr Newton says.

“They are making all the decisions – nothing is hidden from them – and they are now realising what can be done differently.”

“We can all count the numbers, but unless we get them to buy into

If the connection is successful, all recently-logged data is transferred to the server. If it is unable to make contact it will continue to accumulate fuel consumption and position data until contact can be made.

In Svitzer's case, the data is also uploaded on to a website that all its employees can log into.

Royston technical manager

**“The tanker unit has thrown up interesting results, which for the master are quite counter-intuitive”**

Robin Shaw, Royston

Robin Shaw says that once the system has been installed there is no further interaction required. “The system runs all the time and has a battery back-up, and simply begins to work as soon as any fuel runs through it,” he says.

The Svitzer project is the largest of its kind so far, Mr Shaw adds. “The biggest application at the

moment is with tugs, but we have also fitted one on a coastal tanker in the UK,” says Mr Shaw. “This is a slightly different type of display in that it provides how much fuel is being burnt per mile.”

“The tanker unit has also thrown up some interesting results, which for the master are quite counter-intuitive. He tends to think that the slower he goes the less fuel is being burnt, but actually the engine has a sweet spot where the least amount of fuel is being burnt – but it is not actually the slowest speed. The monitor on that ship allows him to keep at that sweet spot. That is different from tugs because on something like a coaster you are sailing in one direction for a number of hours.

“Generally slower is better but too slow is not. You still have to cover the same distance, so if burning half the amount of fuel per mile means it takes you three times the normal time to arrive at the destination you have actually burnt more fuel over the course of the entire journey.” ■

[www.lloydslist.com/towage](http://www.lloydslist.com/towage)

“Where do we base the tug on the river? Do we run all the way back to the station or do we place buoys

**“We quickly found we could learn a lot more about our operations than just fuel – it has become a much bigger project”**

Nick Newton, Svitzer

along the river, which is what we have done on the Thames?” asks Mr Newton.

Similarly, whereas crews in the past might have operated one particular tug for a period of time, they are now becoming more circumspect in choosing the right tug for the particular operation.

So far 12 Svitzer tugs have been fitted with the system, a figure that will increase, according to Mr Young. “We have ordered another batch and the aim is to have at least one fitted to each tug type in every port and that way we can build up an efficiency profile of each vessel,” he says.

That is likely to result in around 20 to 24 tugs of the UK fleet of 80 being fitted with the system, with the expectation of an average fuel reduction of 15% across the fleet, which burns around 15,000 cu m-16,000 cu m of fuel per year.

“That is a behavioural change rather than through fitting any fuel-saving equipment,” says Mr Young.

“So far we have seen a 20% reduction in fuel consumption, but I think that is where there has been lots of free-running,” he says. “On other rivers we may not see as high a benefit, but on others even more. Some tugs have shown a 30%-40% reduction.”

The results are also piquing the interest of port authorities and ship operators, because it gives far greater clarity to the actual costs of the towage component in overall port costs.

“This is allowing us to build a very transparent cost structure to doing a tug job,” says Mr Newton. “Port authorities and harbourmasters find it useful to see those costs demonstrated, and that helps their port development planners as well.”

“We have spoken to a number of different people about what we are doing and there is a lot of interest.”

“The ports are keen to get involved and keen to work together. Container lines are also keen because they are addressing environmental concerns.” ■

[www.lloydslist.com/towage](http://www.lloydslist.com/towage)