

The greening of tank cleaning

Under the growing pressure for a holistic approach to tanker operations, tank cleaning is being seen as part of an overall commitment to improving ship environmental performance

Critical factors influencing the choice include cleaning time, environmental legislation, cargo type and cleaning frequency. While the final choice of tank cleaning equipment depends upon the customer's individual requirements, there is a consensus about what constitutes the bottom line in terms of system capability.

The bar representing what constitutes acceptable performance is constantly being raised and pressure for improved levels of environmental protection continues to grow. Tank cleaning is no longer seen as a means of preventing the cross-contamination of cargoes but also as a means of reducing the levels of residues remaining on board and controlling vapour emissions. At the same time, in the case of water washing, the need to reduce the volume of tank wash effluent is gaining in importance.

Scanjet set for repeat

In view of the depressed state of the tanker market in 2002 compared to 2001, Scanjet employees hardly expected a repeat of last year's record performance when the company's fixed, single-nozzle, programmable tank cleaning systems were specified for 157 tanker newbuilding and retrofit projects. Nevertheless, as year-end approaches, it looks as if Scanjet will reach a 2002 sales figure matching that of last year.

Part of the Saab Rosemount Marine group, Scanjet is the biggest supplier of single-nozzle, programmable tank cleaning machines for the tanker industry. Indeed, sales of cleaning machines to the tanker sector, which encompasses the offshore sector and the sale of some equipment for use onboard bulk carriers, accounts for 90 per cent of total annual turnover at Scanjet.

"The current number one bestseller from amongst the Scanjet product portfolio is our model SC 30T, the patented magnetic transmission, cofferdam and removable drive unit of which help ensure that the cargo tanks are not exposed to the atmosphere," points out Goran Lindh, Scanjet sales manager.

"This model is designed for the chemical and product carrier sectors, indicating the current strong demand for newbuildings of these types. Development of the machine has been carried out in close contact with our major clients like Stolt-Nielsen and Odfjell.

"The most important feature of Scanjet SC30T - the magnetic transmission from the turbine on the inlet side to the drive unit on top - is unique in the market and represents one of the key reasons Scanjet remains ahead of the competition," continues Lindh. "The link with Saab also enables us to provide an owner with a full portfolio of tanker equipment, irrespective of where the tanker is being built or repaired."

Scanjets for parcels

Whereas much of the recent output of SC30T machines is earmarked for those tankers able to carry both petroleum products and a range of simple, commodity chemicals, Scanjet also produces another machine for chemical tankers, but this device - the SC50T - has been developed for use on the more sophisticated, stainless steel chemical parcel tankers.

A typical recent project for this type of equipment is an order from Jo Tankers for the supply of the SC50T models for installation on parcel tankers under construction at

the Kitanihon Shipyard in Japan. Scanjet will supply the machines in long, single pieces of 10-11 metres in length.

This concept of placing the cleaning machine a considerable distance down from the deckhead is applied especially on parcel tankers, where horizontally corrugated transverse bulkheads are often fitted and where cleaning needs to be carried out to the highest standard to minimise the risk of contaminating high-value cargoes.

Challenges ahead

"Scanjet been very successful in recent years," states Lindh. "This can be attributed to not only the provision of reliable and robust tank cleaning machines but also the control we are able to maintain over product quality at our Swedish manufacturing facility where all our equipment is produced. The machines are designed to minimise both cleaning time and cleaning media consumption, thus helping to optimise total vessel turnover and productivity.

"However, we, and indeed the entire industry, cannot afford to rest on our laurels. One ongoing issue which will require more and more attention from the tank cleaning machine manufacturers is the further development of our cleaning equipment to meet the ever more demanding environmental requirements looming up in the tanker industry.

"Another industry-wide challenge is the need to find a solution to the growing problem of how to get rid of sludge accumulations in ballast tanks by means of a proper tank cleaning system and at a reasonable cost," concludes Lindh.

"Scanjet is working on these issues in order to provide cost-effective, quality solutions to these problems which, in turn, should help us to stay ahead of our competitors."

Pyrate sees green

Victor Pyrate of South Ockendon in Essex, UK is another established name in marine tank cleaning equipment which, like Scanjet, sees the the need to minimise environmental impact as the key challenge of the future. Development work is underway on more 'intelligent' tank cleaning machines that will do the same job while reducing the volumes of wash media required.

The primary emphasis in the first instance is on single-nozzle machines for use onboard chemical and product tankers where water is the wash media. The fact that the majority of cargo tanks on such ships are now constructed with the structural support members outside the tank, in the water ballast spaces, means easier cleaning and simpler wash patterns than was the case in the past.

"While there is never likely to be cause for tanker cleaning machines with the high degree of intelligence built into the sophisticated cyber jet machines used in some land-based applications, there is still room for improvement in our current ship technologies," suggests Graham North, sales manager at Victor Pyrate.

New Pyrate team

Part of the Samuel Hodge group, Victor Pyrate has recently appointed a number of new senior managers, including Graham North and Robert Croft as managing director. The global network now stands at 16 agents and 11 stock points. The company's fixed cleaning machines, which come in single, twin and three-nozzle options, are augmented by similarly extensive ranges of portable cleaning machines and associated deck equipment.

The latest new device to be added to the portfolio is the stainless steel VP Mini M, a small, twin-nozzle, low-throughput tank cleaning machine aimed at the coastal chemical tanker sector.

Despite the current poor state of the tanker market, Victor Pyrate reports strong demand for its products and sales for this year look likely to exceed those recorded in 2001. Greece remains the primary market for the equipment supplier and one

notable recent order was for the supply of fixed and portable cleaning machines and gas-freeing fans for a series of four 164,000 dwt Suezmax tankers building at Samho Heavy Industries for Tsakos Energy Navigation.

A typical order for a single ship of this size comprises one fixed, single-nozzle tank cleaning machine per tank, up to four gas-freeing fans and three or four portable cleaning machines.

Dasic twins prosper

Dasic Marine Ltd of Romsey in the UK was a pioneer in the development of twin-nozzle cleaning machines for use on crude oil, product and chemical tankers over 30 years ago. Building on this knowledge base, the company now offers a full range of tank cleaning machines and portable ventilation fans.

One of the most successful units in the range in 2002 has been the Dasic Orbitor which is provided for coastal chemical and product tankers of up to 12-15,000 dwt. The unit has been specified for a number of newbuildings, including a spate of coastal tankers recently ordered in Turkey.

The Orbitor is based on a new concept in which the nozzles on one side of the spherical head are offset by a backing plate. It was originally developed for an application with Alfa-Laval in the industrial hygiene sector but Dasic have developed a marine version in recent years.

"For a number of the current newbuilding orders in our reference list, we have been successful in selling complete equipment packages, comprising fixed pumps, portable pumps and gas-freeing fans," says Dasic sales manager Duncan Marshall. "One thing we have noted with our recent Orbitor sales is that often customers will specify two fixed machines per tank, to ensure 100 per cent cleaning coverage, rather than only one which has been the norm until recently. The corrugated tank walls which are now commonplace in chemical and product tankers can leave shadow areas if only a single machine is used. More shipowners are tending to adopt the "better be safe than sorry" approach to tank cleaning in order to minimise the risk of cargo cross-contamination."