

enables tanker operators to determine their TMSA score over the entire company.

Form Manager provides a solution for forms not included as standard in the planned maintenance module. These include, among others, incident reports, non-conformity reports or port reports. Data entered via the new form manager is 'machine-readable' and therefore can

be exploited for reporting purposes. Furthermore, once the module has been installed, customers are free to create their own forms, according to their individual needs.

The accounting interface was developed to exchange data that a shipmanager has stored on Mespas R5 and its accounting software. As its name suggests, the Noon Report module

facilitates the daily transfer of customer-specific, predefined information to charterers or other defined users. Crew Management Light helps ensure that all vessels in a fleet are manned with a competent crew having the required skills and licences. Operators are able to record personnel data and implement crew planning well in advance.

Software solution aids safer stowage of chemicals

For many years, information relating to cargo types and their handling were only available as binders of paper documents, lost among many others, either on board ship or at the back of an owner's head office. There were no software tools for extracting and applying the information they contained in an electronic fashion.

Driven by necessity, large fleet owners such as Stolt-Nielsen built their own bespoke systems, but the majority of small and medium operators made do with a rather less sophisticated manual approach, sometimes aided by a knowledgeable ex-captain who became the in-house expert.

One of those experts was Andrew Milligan, who built up considerable experience of cargo management issues while working for Stolt and Odfjell, two major chemical tanker owners, during the 1990s.

Mr Milligan subsequently left the frontline of tanker operation and dedicated his time to creating a database application that would not only make documents easier to locate and retrieve but also to intelligently cross-reference the different datasheets. This culminated in two products: the Milbros Chemical Information System (MCIS) and later the Milbros Automated Stowage System (MASS).

In September last year, Connecticut-based Heidenreich Innovations acquired rights to both products and has since put in considerable energy to developing and expanding their respective capabilities. This work is expected to start reaching fruition later this year with the launch of a new web-based version of MCIS, allowing significantly greater accessibility compared to the traditional stand alone installed version of the program.

MASS is intended to keep track of different chemical cargoes. It allows users to drag and drop cargoes on to a virtual tank layout and alerts them to any conflicts with adjacent loads or violations of cargo stowage policy.

Explains company president Fritz Heidenreich: "There are a plethora of stowage rules and regulations that affect whether or not a cargo can be safely loaded, for example, depending on the previous product carried in the

destination tank or even adjacent tanks. This is critical for both safety and financial reasons."

When this planning is carried out manually, there is quite a high chance of operator error. While such errors may not cause physical damage to the ship, they may compromise the cargo. In certain cases, violating a regulation alone can lead to financial penalties, even if the cargo is not tainted.

Under rules established by the Federation of Oils, Seeds & Fats Associations (FOSFA), for example, an owner may be liable to a US\$50,000 fine if a FOSFA cargo is loaded

in a tank previously laden with a 'non-compatible' cargo, regardless of any actual contamination. So if each ship in a fleet breaches the rules just once annually, the financial implications can be significant.

Elsewhere, the US Coast Guard has issued a compatibility list of cargoes that can be handled in adjacent tanks. This also considers piping arrangements if pipes for pumping one cargo are running through a tank containing another.

In addition to rules from international regulatory bodies, there are also manufacturer

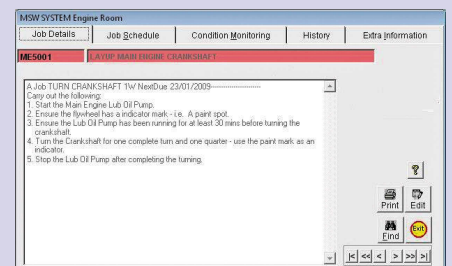
Computerised approach manages ship lay-up

UK-based Marine Software Ltd has supplied two versions of its vessel lay-up planned maintenance (PM) system, launched earlier this year, to Glasgow-based Norbulk Shipping. These deliveries comprise three stand-alone systems and two upgrade modules for PM systems previously supplied by Marine Software.

The lay-up upgrade module for existing PM systems enables normal maintenance to be suspended for the duration of a lay-up, whilst specific lay-up cards can remain active. On re-activation of the vessel into service, the PM system will advance the next due maintenance routines forward by the number of days that the ship has been in lay-up mode. Job cards covering class and statutory surveys remain active during the lay-up period.

The three other Norbulk vessels, which have alternative PM systems, have been installed with Marine Software's standalone lay-up system. These systems come supplied with generic job cards that cover the maintenance requirements for the initial lay-up preparation and for the lay-up period that ensues.

The generic job cards cover four lay-up types from hot (up to 1 month), warm (up to 12 months), cool (up to 5 years) and cold (more than 5 years). Depending on the type of lay-up planned, normal maintenance tasks covering running machinery such as diesel alternators



A sub-section of maintenance tasks must be performed during ship lay-up

and boilers can be tagged to remain live during the lay-up period.

Customers, of course, have the option to modify these generic job cards to exactly match the requirements for their individual vessel. Additional specific job cards can be created within these two PM systems for machinery not covered with the lay-up job cards.

Both lay-up systems include all historical maintenance records that have been carried out during the lay-up period, along with reviewing all data ashore. This can greatly assist the owner by providing an audit trail in the event of a hull/machinery and/or P&I insurance claim being submitted after the vessel is re-activated and entered back into service.

Marine Software launched its vessel lay-up solutions in February this year, with the first system delivered to Bluewater Ship Management for the ro-ro freight ferry, *UND Birlik*.