Digital Ship

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www.thedigitalship.com

Resurvey for Malacca Straits

Malaysia, Indonesia and Singapore commit to the Marine Electronic Highway project, with the aim of producing more ENCs, better equipped vessels, more accurate information and, ultimately, improved safety

AFTER SEVERAL YEARS of discussion, Malaysia, Indonesia and Singapore have finally signed a Memorandum of Understanding (MoU) to implement the Marine Electronic Highway (MEH) demonstration project for the Malacca Straits.

The demonstration project should ultimately ensure that new large scale official electronic charts (ENCs) are developed for the region, all passing ships have chart display equipment (ECDIS), and ships are provided with good information about weather, tides and current, as well as temporary hazards and hazards which might not be marked on the charts (such as wrecks).

The countries signed the agreement at a meeting in Jakarta, Indonesia, on Sept 7-8, co-ordinated by the IMO and attended by 30 IMO member states. IMO will play a central role in helping the states co-operate.

The meeting was called by IMO, and jointly hosted by IMO and the Indonesian government. It was primarily about security and secondarily about safety of navigation.

Also present were shipowner associations Intertanko and the International Chamber of Shipping (ICS), which agreed that there will be at least 200 ships with official electronic chart display equipment (ECDIS) to participate in the project. Intertanko says it expects navigation safety in the region to be "significantly enhanced" as a result.

The World Bank / Global Environment Fund has agreed to contribute $8m to the project. It refused to release the $8m until it had the firm commitment of both the neighbouring countries and the shipping industry.

The agreement of Malaysia, Indonesia and Singapore governments was secured at the meeting on September 7-8.

Intertanko has committed a further $8m "in kind", including the investment that Intertanko members make in electronic chart display equipment.

Intertanko members are expected to make this investment as part of the gradual process of upgrading ships - most new ships have an electronic chart display system onboard.

Intertanko will be encouraging its members to participate in the scheme, and fit official electronic chart display equipment in their vessels.

Officials from Malaysia, Singapore and Indonesia, the IMO, International Chamber of Shipping and Intertanko, agree to implement a "Marine Electronic Highway" in the Malacca Straits

Next stage

Now the financing has been agreed, the funds can be cleared and the major resurveying work can start.

The next stage of the project will be to set up a project office in Batam, Indonesia; to set up a steering committee (which shipowner associations will participate in); and to start resurveying the Straits. The resurveying is likely to be done by local hydrographic offices.

The tidal stations are already in place, but not the infrastructure to gather data from them and get it to ships.

By the fourth year of the project all vessels should have electronic chart systems and accurate information about the depth and topography of the Straits, as well as real time data on tides and currents.

The financing for light

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ABC

buoys in the Malacca Straits is already covered by the Nippon foundation of Japan.

Over the long term, it is possible that the scheme could be extended from the Persian Gulf as far as Japan, and used as a template for a similar scheme in Europe (from Gibraltar to the Baltic Sea).

The initiative has been in the planning stage for something like ten years, originally growing from an IMO initiative.

Background

The Marine Electronic Highway builds on the experience with several other similar schemes around the world, including the UK's Channel Navigation Information Service, which collects information from ships using AIS, radar and VHF direction finding, and then broadcasts information back out to ships every hour (every 30 minutes during low visibility times) with information about navigation difficulties / hazards (such as cross channel swims), ships which appear to be not following collision regulations (COLREGs), weather, traffic information, defective navigation aids, hampered vessels, deep draught vessels, vessels under tow and survey vessels.

A similar project was developed in St Lawrence Seaway, Canada, several decades ago, where vessels were fitted with an early form of AIS transponder and electronic chart systems.

The Malacca Straits connect the Northern Indian Ocean with the China Sea and are used for most routes to the Far East, running between Indonesia, Malaysia and Singapore, with about 275 vessel transits a day.

Vessel traffic through the Straits has increased substantially in recent years with the increase in trade to and from China, and is expected to increase further.

The Straits are hazardous enough to navigate; they are a maze of narrow channels, with irregular tides and shifting seabeds, with navigation widths at choke points measured in metres rather than miles. Alternative routes, via Lombok and Sunda Straits, add about three days to voyages.

Piracy

Malaysia, Indonesia and Singapore also addressed piracy at their meeting in Jakarta, agreeing a 'Jakarta Statement,' where the countries said they will ensure the Straits are safe and open to international shipping at all times and address the concerns about the number of piracy and robbery incidents against ships and seafarers. The statement will be published on the IMO's website newsroom when completed.

The area is the worst in the world for piracy, and was recently categorised by Lloyd's insurance as a "war risk area", thus making ships transiting the route subject to additional insurance premiums. Lloyds said that it would keep the categorisation until it was satisfied that surrounding countries were doing more to provide security in the Strait.

The categorisation as a war risk area seems to have created some embarrassment for the authorities, creating some impetus for the efforts to improve security. However the meeting was planned before the announcement from Lloyds.

Malaysia, Singapore and Indonesia, maybe to be joined by Thailand, agreed to fly aircraft over the Straits 24 hours a day, to look out for illegal activity (piracy).

Two aircraft have each been provided by Malaysia, Singapore and Indonesia, so 6 in total. The aircraft will have a military officer from each country onboard - if any waterborne response is needed, the military officer of the most appropriate nearby country can co-ordinate it, and supply local knowledge.

To support the aeroplanes, the Indonesian Navy announced plans to install radars in nine places along the Straits to support the air efforts. The radars will be sited at security posts, where captains can report if they become a victim of piracy or have an accident.

The Malaysian Navy will support the air patrols.

The project builds on a previous agreement in July 2004, where Indonesia, Malaysia and Singapore agreed to each deploy seven warships and two aeroplanes; but because Malaysia and Singapore navies did not have patrol boats, they did the patrols by air; but the air patrols were not able to fly low enough to detect very much.

"It's a step forward - its good to see that the states are co-operating," says John Fawcett-Ellis, regional manager for Intertanko Asia.

"That sort of co-operation would never have been possible a few years ago - that makes one optimistic."

"They are addressing the issue in an open forum with other states and the IMO there. If its being done behind closed doors you're never quite sure what's happening. We're getting there - slowly but surely."

DS

Authorities not making full use of AIS - MARS

www.nautinst.org/MARS

The latest report from the Marine Accident Reporting Scheme (MARS) highlighted the fact that some ships and seafarers are not making full use of the functions available with the AIS system, and that this under-utilisation may be defeating the very safety purposes for which the technology was introduced.

One instance was reported in MARS about a ship travelling just west of the Gibraltar Strait, in an area where 196 vessels were tracked within a radius of 50nm, when it picked up communications between two other ships in the area over its VHF radio.

The conversation (which does not include the names of the vessels) began as follows: "MV ABC, this is a NATO War Ship Naval Patrol Vessel (NPS) 3 miles off your port beam" - Reply: "This is MV ABC" - NPS: "Please shift to channel XX".

MV ABC confirmed this request, at which point the Officer of the Watch (OOW) was asked to reply to a series of questions as a matter of surveillance of merchant navy vessels.

These included the ship's flag, IMO number, Port of Registry, name of its owners, agent, cargo type and quantity, as well as its last and next port of call, date of departure, the Captain's name, passport number and nationality, and other bits of information.

It took around 10 minutes for the OOW to reply to all of the questions, during which time the navigational safety of the vessel was solely dependent on the lookout (presuming that a lookout was, in fact, posted).

The MARS report pointed out that the reason that vessels have been required to fit AIS onboard has been to transmit exactly this kind of data to allow for remote identification, but that naval patrol vessels do not rely on this information and instead fire large numbers of questions at those on the bridge.

MARS states that "The OOW is being distracted from carrying out the duties of maintaining the safe navigation of the vessel. (He) should not be distracted from carrying out (these) duties, especially within such dense traffic areas."

As well as ignoring the AIS data, the report also mentions the presence of a Vessel Traffic System (VTS) and mandatory reporting system in this particular area, which also carry all of the relevant data.

It would have made more sense for the warship to get this data from the vessel traffic system rather than distracting the vessel.

Poorly marked cargo lights cause fire

THE London P&I Club says it has received reports of a "substantial" claim involving a cargo fire caused by the improper operation of cargo lights.

The incident involved a vessel loading maize and wheat bran pellets. On board the vessel were four 500-watt quartz halogen cargo lights, positioned high up under the weather deck of the vessel, and operated by four separate switches mounted on a single control box in the mast house between the two holds into which cargo was being loaded. Each hold was lit by two lights.

A number, written in faded red ink, poorly identified the light that each switch operated, and it was reportedly "easy to assume that the switches operated the lights in only one hold."

Maize was loaded into one hold, with the forward hold lights buried under the surface of the stow. The vessel then shifted to another terminal and started loading wheat bran pellets into the other hold during the hours of darkness.

When the hold lights were turned on, all four switches - including those operating the already-full hold - were activated. It was only much later, after loading, that smoke was seen coming from the hold into which the pellets had been loaded, and smouldering fires were discovered directly under both lights in each of the holds.

The Club has since urged its members to ensure that crews - and especially those new on board or still being familiarised with the operation of the vessel - are made fully aware of safety procedures concerning the operation of lights.

Investigations revealed that much lower-wattage lamps than the ones involved in this case may give rise to fires if in direct contact with grain cargoes.

Frigate runs aground as computer over-rides crew

Reports have reached *Digital Ship* of an incident on January 22 2005, when the navigation system on a new $500m Australian navy warship sent the ship into reverse against the wishes of the crew, causing $2m damage to propellers and rudder, and a lot of embarrassment to the Australian navy.

The *HMAS Ballarat* was conducting border protection activities 2,600 North West of Perth, at Christmas Island. It was carrying a missile-armed helicopter, a 127mm gun and a compliment of torpedoes and missiles.

A series of errors by the crew led the ship's computer system to over-ride their manual commands and set the ship in reverse, causing the ship to run backwards onto the island's rocky shoreline.

According to local news reports, the ship was conducting a boat transfer during a U-turn manoeuvre, as planned during the scheduled activities, and was operating in "port echo" or economy mode at the time.

The move was supposed to take the warship inside a buoy which had another ship's mooring line attached to it.

However, it became clear to the crew as they approached the buoy that it would not be possible to safely complete the turn, and that their ship would pass over the line, so they attempted to make an urgent "three-point" turn.

Due to the fact that the ship had only one of its three engines running, the crew tried and failed to run one propeller forward and one astern to conduct the radical turn. Such a move is impossible to execute with just one engine running, and the instructions caused havoc in the ship's systems.

At this point the control system froze, the ship's computer took over control of the vessel, and decided to place both propellers into reverse.

It shut down the engine soon afterwards, but by that stage the ship was travelling in reverse at a couple of knots, and the crew could only watch as the frigate ran backwards on to the rocks.

In better times - the $500m **HMAS Ballarat**

Marport provides shipboard wi-fi

www.marport.com

Marport Canada, of St Johns, Newfoundland, has received financing from the Canadian Centre for Marine Communications (CCMC) to develop both shipboard VSAT systems (over DVB-RCS) and wi-fi systems enabling ships to access the internet at high speed from antennas in the port (WiMAX).

A 2.4 GHz wireless transceiver has been mounted onboard F/V Isleifur in the North East Atlantic

Marport Canada is an established company in the design and build of marine sensors, software and comms systems for deep ocean commercial fisheries, ocean science and offshore energy. It will set up a new subsidiary, Marport Wireless, to develop the new business.

The funding is part of CCMC's Marine Information Skyway Investment initiative, supported by the Canadian Space Agency, administered through the Communications Research Centre (CRC) and delivered through CCMC.

As part of the project, Marport will build a "marine communications system" using wi-fi and DVB, enabling ships to switch between different systems easily.

It will build test systems in the Northeast and Northwest Atlantic Ocean. "Our initial focus will be on determining broadband wireless network performance in varying marine conditions," says Karl Kenny from Marport. "We'll also be examining how marine customers use the network to determine commercial viability and service attractiveness.

The company is planning shore-side wi-fi access points at "high marine traffic access points" in the North Atlantic, St. Lawrence Seaway, and the USA coastline, so ships nearby will be able to access the internet over it.

Marport has already installed shipboard wi-fi systems on two fishing boats operating in the Northwest Atlantic.

The two boats pull a single net in tandem. They use the broadband system to transmit sonar and radar data between the ships, send data to each other's autopilots about ship position, and send information about the winch. The data can transmit 8 to 10 nautical miles.

Marport also envisages that ships will ultimately be able to provide each other with internet access, with data hopping from one ship to another (so ships would in effect act as internet nodes).

You might be too far from the shore to get wi-fi, but maybe you are within wi-fi range of another ship which is within wi-fi range of the shore.

Neil Cater, program director with CCMC's SeaCommm project said, "CCMC is continually seeking entrepreneurial firms with technical vision and capabilities to enhance marine communications.

"We believe Marport will be successful in this venture and we are very pleased to participate in these emerging broadband technologies. We expect that this project will deliver cost-effective, high speed, standards based solutions."

Panama Canal tracks ships

www.pancanal.com

As part of an initiative to reduce congestion and delays for ships crossing between the Atlantic and Pacific oceans, vessels wishing to use the Panama Canal will have the option of having their position monitored from the day they leave port or for seven days prior to arrival, whichever is longer. This system will operate using the Inmarsat C service.

Trials of the new tracking system, developed by Absolute Software, began in August as part of an undertaking by the Panama Canal Authority (ACP) to improve the accuracy of estimated time of arrival information, thereby reducing waiting times for vessels.

The 40-mile canal, composed of artificially created lakes, channels and locks that raise and lower ships by 26 metres through the mountainous terrain of central Panama, handles more than 14,000 transits annually.

Telemar buys Navidec

www.telemar.se

Telemar Scandinavia has purchased Navidec Oy, a Finnish company specialising in sales and service of Sperry, Thrane & Thrane, Sailor, Transas and MXMarine (Leica), which handles installations on most cruise vessels and ferries built at Finnish shipyards.

The company recently secured a contract for Ku band VSAT installations onboard Finnlines 5 large ropax vessels being built in Italy, the first one to be delivered in November and be in service between Finland and Germany.

Finnlines is installing a VoIP connection onboard, enabling VoIP communications directly between the vessel and the office over the system. All cabins will have internet access.

Telemar has also recently installed a C-band VSAT system with worldwide coverage onboard a new tanker in South Korea. It is a Telenor Sealink system with 4 telephone lines, 64 kpbs ship shore dedicated bandwidth and 512 shore-ship dedicated bandwidth.

The company has recently signed a five year fixed fee world wide service and maintenance contract for communications onboard the Wallenius Fleet, which started July 1 2005.

The company offers fixed fee service and maintenance contracts, where the owner pays a fixed annual fee covering all cost for service and maintenance worldwide, including labour, travel cost and spare parts.

Inmarsat completes 128 kbps trial

www.inmarsat.com

Inmarsat has completed a trial of Inmarsat Fleet 128 kbps on a Maersk container ship, to check it worked well with different software applications at sea.

Inmarsat checked the throughput speeds / performance; it also checked the system worked well with different IP applications such as videoconferencing, as well as other data protocols and applications.

The vessel chosen was 6,600 TEU Chastine Maersk, built in 2001, which was also used for the Inmarsat Fleet 77 trials. The trial was running while the vessel was sailing between Japan and Northern Europe.

For the trial, Inmarsat provided the airtime, shipboard terminal, shipboard Windows PC, training and support. A Nera F77 was used, installed and configured by Furuno Danmark. A Telenor land earth station was used, with TeleDanmark the Inmarsat service provider. The trial was operated by satcom consultancy Imhotek.

"We are always looking for new technology and systems to improve our business processes - it is important for Maersk to be at the forefront of our field, to be innovative and continuously reduce costs while increasing efficiency," says Torsten Svanholm, the senior superintendent engineer with Maersk's IT and communications department.

"Throughout the trial period we found the 128kbps Fleet F77 service to be very reliable. The enhanced Fleet F77 service also gives us more choice. We can use the 64kbps service for standard communications, or use the 128kbps service for more cost-effective large file transfers."

Altogether Inmarsat tested the 128 kbps system on a number of different ships working with different land earth station operators (LESOs).

Test results

In the real world (as opposed to theoretical speeds), the 128 kbps channel performed about 51 per cent better than the 64 kbps channel, and could carry speeds of up to 122 kbps, carrying large files "much cheaper" than the 64 kbps service.

Satcom consultancy Imhotek, who operated the trial, developed a series of automated tests to prove that different applications would work over all the available Fleet 77 channels.

"In terms of throughput, the 128kbps channel performed better than the 64kbps channel on average over all the tests by an average of 51 per cent. When sending and receiving large files, the 128kbps channel shows an improvement better than 70 per cent for all protocols, and an average improvement of 98.3 per cent. At this sort of performance, users will see savings from using the 128kbps channel," says Imhotek.

The test looked at SMTP (protocol for sending e-mail), POP3 and IMAP (protocol for receiving e-mail), and FTP (file transfer protocol).

The results showed FTP was the most efficient ship to shore data communication protocol, followed by SMTP, POP and IMAP.

SMTP can be faster than TCP/IP for large data files - because SMTP adds a large header to the data whilst TCP/IP adds a lot of additional data.

Each test was carried out with a range of file sizes, namely 25, 50, 100, 250 and 500 KB, 1 MB and 5 MB, with each test performed five times to obtain an average test result.

This meant 8,000 tests in total. During the time, there were only two failures, which were diagnosed as an issue with the terminal software, which has since been fixed, Imhotek says.

Applications

Further tests were undertaken for Internet use, digital image file transfer, weather data, fax files and virus software updates.

For videoconferencing, the trial tested Alice videoconferencing software from AVM of Germany, which retails at $40 per copy, and a Tandberg 1000 standalone videoconferencing unit which costs around $4,000.

Both tools could send data by the Fleet 77 ISDN line.

In the trial, the Tandberg system performed "extremely well" at tests at speeds over 128 kbps, with "good, very clear teleconferences with many people involved, and well rendered movement," Imhotek said. "The 64 kbps channel was very good when doing a one to one call".

"There were some connection issues with the Alice software. However, it should not be discounted out of hand, as it was possible to use for videoconferencing over both Fleet channels, and costs a fraction of the price of the Tandberg."

Revenue up 4 per cent

Inmarsat also recently released their half-year 2005 financial reports, which showed 6 monthly revenue increase by 4 per cent, from $243.5m to $253.6m, in the first 6 months of this year when compared to the same period in 2004.

The company says that the "main driver" of the revenue performance was the shipping industry, particularly with its Inmarsat Fleet service. There was also strong usage of mini-M and Inmarsat -B. Voice revenues are decreasing.

Lease payments to Thuraya ceased at the end of July, after the successful launch of the first Inmarsat-4 satellite in March, giving Inmarsat its own satellite coverage over the Middle East.

The I-4 satellite commenced commercial operations in May, after a brief deployment period. A second Inmarsat-4 satellite is also scheduled for launch at the end of this year, or early in 2006.

Why 128 kbps?

Inmarsat imagines that shipowners will want to use the 128 kbps channel for faster ship shore e-mail and data communications, video conferencing, ship management software, chart updates, weather information, vessel data and condition monitoring.

Shipowners do not save a great deal by using the 128 kbps service - it costs nearly double what two 64 kbps channels cost, so the cost per kilobit is roughly the same.

Users save about 15 per cent on the price - but they pay a lot more for the times when they are connected but not using the connection efficiently (eg during handshaking, computer connection time).

However being able to send data faster will mean a lot for ship and shore crew who can afford the high satcom cost but do not want to spend as much of their personal time managing data transmissions.

It also means that engineers can get more absorbed in the issue of fixing problems, rather than having their work continually interrupted as they send data to and from the ship.

Telemedicine pictures can be much clearer, which is essential if, for example, a doctor on shore needs to clearly see any injury or body part.

Use VHF not mobile phones - RNLI

www.rnli.org.uk

The UK's Royal National Lifeboat Institution (RNLI) has urged all recreational and fishing seafarers to use a VHF marine radio set rather than rely on mobile phones at sea.

The advice follows a spate of recent rescues when mobile phones have had to be relied upon in an emergency because no VHF radio was unavailable.

In one recent rescue in Lyme Regis, a powerboat which did not have VHF was in trouble, and the vessel's lights were not working.

The crew did have mobile phones though. The coastguard co-ordinating the rescue, speaking to crew over the mobile phones, asked them to all switch their phones on and hold them up.

The glow from the phones was picked up by a night vision aid on the lifeboat 900 metres away.

"If the boats had been equipped with VHF sets, rescuers would have been able to pinpoint the position of the vessels quickly and accurately. In more dire circumstances, the time saved could save lives," RNLI said.

"As some cases have shown, a mobile phone can provide a valuable back up to VHF but should not be relied upon for safety."

As people become increasingly accustomed to having their mobile phones with them at all time within signal range, it is easy to forget that they can quickly lose a signal away from the coast. VHF radios have a normal range of 20-25 miles. GSM [mobile phone] transmitters can have a similar range in rural areas, but the transmitter might be sited several miles inland, and is subject to the reliability of the transmitter and number of other people calling at the same time.

Telenor to offer Inmarsat services in Brazil

www.telenor.com

Telenor Satellite Services has received approval from the Brazilian government to begin offering Inmarsat satellite services directly to service providers and their customers throughout Brazil.

Prior to this approval, Telenor were only able to sell Inmarsat services in the country through Embratel, the state-sponsored service provider.

Negotiations between Inmarsat, Embratel and the Brazilian government for this deal had been in progress since 2002. Telenor has already established an office in Rio de Janeiro to meet the anticipated sales growth in Brazil.

Silversea uses MTN satcoms

www.mtnsat.com

Silversea Cruises, operators of four cruise vessels in the "ultra-luxury" sector, has made an agreement with maritime VSAT satcom company MTN to provide VSAT communications and services.

Seafarers and passengers will be able to communicate by voice, data and e-mail, and watch TV onboard.

There will be internet cafes onboard the ships and wi-fi hot spots.

Seagull registers 10,000th course certificate

www.seagull.no

Maritime computer based training company Seagull reports that it has issued its 10,000th course certificate, to a seafarer on LNG/C Høegh Gandria, who completed its ship security officer course.

The course included a combination of Computer Based Training (CBT) Modules and recorded in-service training and onboard exercises.

Of the 10,000 certificates issued to date, between 6,000 and 7,000 have been issued in the last 2 years, Seagull says. The need for ISPS certificates is a big reason behind the growth, as well as an interest in the industry to use IT to cut training costs and increase training quality.

Roger Ringstad, managing director, Seagull

Seagull believes that CBT modules onboard are now regarded by flag states, class societies and shipping companies as being as effective as land-based courses. "On-board training is often more efficient, costs less and is a more effective learning tool than traditional land-based courses," the company says.

SeaCode to launch ocean based outsourcing

San Diego based start-up company SeaCode has revealed plans to launch a 24-hour computer programming office of 600 workers - located three miles off the Californian coast.

This means that the programmers can work close to California (and be more accessible to Californian executives than being in India), but not be paid US wages or be subject to US labour rules, immigration and employment restrictions.

US companies can outsource their IT work to programmers of lower cost nationalities, without having to send staff on long trips to India or spend large amounts of money arranging visas for the programmers to work in the US.

SeaCode intends to purchase a used cruise ship, at a cost of between $10 million and $30 million dollars, and keep it permanently anchored 160 metres past the state line of territorial waters off the coast of El Segundo, Los Angeles.

The ship would be filled with 600 of the "best and brightest" software engineers from around the globe, working day and night in shift-based teams, SeaCode says.

Whether the world's 600 best and brightest software engineers would be happy to live and work on a ship is probably worth speculating on.

The owners say that the facilities onboard the ship will be first class, with all accommodation, food, laundry and medical services provided free of charge for the workers.

The programmers will also be able to travel to the mainland by a 30-minute water-taxi ride for shore leave (provided they could get US visitor visas).

The vessel will be able to communicate with the shore by microwave on a T3-speed (up to 45 mbps) data communications line. Individual programmers onboard will be able to use mobile phones and the ship will have local US area codes.

David Cook, one of the founders of the project, was a master of a crude oil tanker for 15 years.

SeaCode anticipates that its first ship will be operational in 2006, then the project will be extended to other US cities and maybe Europe.

There are estimates that 3 million US jobs will be outsourced from the country by 2015. How far removed they will be from the US coastline is still to be determined.

Universal Guardian container tracking system

www.universalguardian.com

US security company Universal Guardian Holdings (UGHO), an American company dealing in protection and security services, has launched a container tracking system using RFID tags, readers in ports around the world and configurable software modules.

The software tools can automatically create electronic manifests and transmit them to shippers, customers and customs, the company says.

UGHO claims to "have been working closely with the U.S. Department of Homeland Security, British Ministry of Defense Research and Development and the World Customs Organisation in Europe".

TESMA sets up UK base

www.tesma.net

Danish shipmanagement company TESMA, one of the most advanced in the world with respect to information technology, has set up a base in Edinburgh, Scotland, called TESMA UK, following its acquisition of Scottish shipping company Gibson Gas Tankers at the end of 2004.

The offices will be staffed by former Gibson and TESMA personnel. The company says that Scottish shipmanagement staff have a reputation for proficiency and it is happy to tap into these resources.

The UK operation will initially manage six LPG carriers and two product tankers (previously owned / managed by George Gibson & Co) and six additional LPG and chemical tankers being transferred from TESMA Denmark to the UK fleet.

EU project - personalized shipboard e-learning

www.slimvrt.gr

The European Union has funded the development of customisable electronic learning systems for seafarers, dubbed the SLIM-VRT (Self-Learning Integrated Methodology - Virtual Reality Tool) project. Seafarers can select courses according to their needs, preferences and plans.

The research work included looking at seafarer skills, qualifications, training needs and styles, normal formal and informal career development, and also how the seafarer's job requirements were changing. It also developed a simulator.

A pilot program was run with 55 users including seafarers, shipping industry employees, marine academy students.

E-mail seafarers at work

www.ms-sc.org/webships.html

The Marine Society has arranged for seafarers from P&O Nedlloyd Kobe and UK Royal Fleet Auxiliary ship, the Wave Ruler, to send regular dispatches by e-mail about life onboard, which can be freely accessed on the Marine Society website.

They send details of location, weather, cargo and other aspects of maritime life, explaining realities of life "at the sharp end" of shipping.

There are pictures from a digital camera onboard displayed on the site, and updates about the different places the ship has visited. All pages are freely accessible.

There is also the opportunity for people to email their own questions and observations directly to the shipping company, to try and answer any questions they may have.

The main purpose is to provide a way for people to learn what it is like living and working at sea. The service is part of the Marine Society's continuing mission to promote careers at sea to young people by giving them a better and more complete understanding of what life on board these ships really entails.

The site also provides impartial information about professional qualifications, assistance with Open University study at sea and computer skills training.

The Marine Society operates its own "College of the Sea," which has a unique dispensation from awarding bodies such as AQA and The Open University to run their examinations onboard warships and commercial vessels throughout the world. In recent years many of its learners have studied and successfully sat examinations in war zones.

27 SpecTec staff come back

Www.spectec.net

Maritime software company SpecTec reports that 27 staff members, who left the company during its tenure with Dutch telecom company KPN (as Xantic), have returned to the company since the management buyout in May this year. 15 staff have returned in Italy; one in Norway; one in Australia; 6 in Cyprus; 1 in the UK and one in the US.

NAPA Emergency Response program released

www.napa.fi

Shipbuilding software company NAPA has released a new version of its software for emergency response and salvage calculations, NAPA ER.

The software can provide technical support for ships in operation, analyse loading and assess any damage.

The development of the software tool follows US OPA 90 requirements that all tankers sailing in US waters have a technical support team in place, in case there is any problem. NAPA expects this requirement to grow to other sea areas and other ship types.

From a single user interface, users can access ship stability, loading and strength functions. The tool takes data from the NAPA vessel database.

Developments at SRO

SRO, a maritime IT consultancy based in Manchester, UK, says that its current client base includes tankers, ro-ro's, Offshore vessels and dredgers. Most of the business is currently UK, but it has been in discussion with clients in the Far East, Middle East, North and South Europe, US and Canada.

The services include maintenance and purchase consultancy, communications, bespoke IT development and ICT support / services. In association with other companies it can provide condition based monitoring, knowledge management and e-commerce systems.

For UMA Dredging, SRO has carried out database engineering, integrating its maintenance system to the main engine manufacturer's electronic technical manual, directly connecting the maintenance system to manuals, spare part catalogues and technical descriptions, including graphics and video.

On the communications side, it is offering a ship shore solution via Rydex, and helping shipping companies manage their onshore communications, including GSM, fax, landline and telex. It has provided these services for Meridian Marine.

It has developed tools to plug into MS Excel and Project, to develop management reports. It has carried out ICT audits (including for Euroship), spending 1 day on a vessel and making a report on its IT infrastructure, general health and improvement recommendations. It has provided this service for BP Shipping.

It is working with James Fisher MIMIC Ltd with its condition monitoring software, which can be used for collection, storage, display, analysis and management of all information relating to a shipboard machinery and equipment maintenance program, which has been used by the UK Royal Navy and installed on 83 Royal Navy ships, submarines and shore establishments. SRO is promoting the product on the commercial shipping market.

Correction

In the September issue of *Digital Ship* we stated that SRO Solutions, a new maritime IT consultancy based in the UK, was formed with staff previously with the AMOS business unit at SpecTec.

This was an error - the staff left AMOS when it was part of Xantic; AMOS only became part of SpecTec after a management buy-out, which occurred 3 months after the staff left AMOS.

Lloyd's Register acquires ODS

www.lr.org

Lloyd's Register has acquired Ødegaard & Danneskiold-Samsøe A/S (ODS), a Danish consultancy specialising in noise, vibration and machinery dynamics.

ODS is established in the mega yacht and cruise areas, and Lloyd's Register hopes to be able to apply its expertise to the passenger ship, container ship and LNG sector, where demand for noise and vibration consultancy is expected to increase.

ODS has 40 staff who perform noise, vibration and machinery dynamics measurements and analyses during plant acceptance and commissioning, sea trials and other stages of the asset lifecycle.

The contract signing: Back: Michael Kayser, Lloyd's Register Group finance director and Alan Buckland, head of Lloyd's Register's Marine Consultancy Service Group. Front: Ødegaard & Danneskiold-Samsøe A/S: Claus Marner Myllerup, Deputy managing director; Ulrik Danneskiold-Samsoe, marketing director and John Ødegaard, managing director

ShipPlotter - open source AIS?

www.shipplotter.com

ShipPlotter, a small piece of software, is threatening to revolutionize internet AIS data, by allowing individual internet users around the world to put AIS receivers in their gardens and publish the data on the internet, enabling a worldwide real time picture of vessel movements and locations to be put together.

Readers will remember the strongly worded complaints made at IMO about Lloyds Register - Fairplay's AIS Live service, publishing AIS data on the internet, which led LR-Fairplay to put in a time delay for ship information for users which had not been security checked.

New AIS service on the internet - ShipPlotter

The legal issues of republishing AIS data are unclear - some authorities consider it sensitive government data and therefore re-publishing is illegal.

But since the decision was made when AIS was first mooted to keep the data unencrypted, there is nothing to stop anybody who wants to access it.

Authorities may be able to stop one large company from publishing AIS data online, but will struggle to stop several thousand individual internet users.

There is an inevitability to ship locations anywhere in the world being ultimately available online, whatever the authorities think about it.

Shipplotter sells a piece of downloadable software for Euro 25 with no subscription fee.

Software users can connect a VHF scanner tuned to channel 87 or 88 (AIS channels) to their computer soundcard, and the software translates the radio scan signal into AIS data.

If the user is out of range of the VHF signal for the area they wish to observe, they can connect to the internet and see ships that have been plotted by other people using a VHF scanner in that area and uploaded into the central ShipPlotter database.

All registered users who are connected to the internet can then share their data. This method allows access for people who don't have use of a scanner of their own.

Digital Ship understands that the Westkant restaurant in Terneuzen, Netherlands, has a system set up on a PC in the bar area, so people can monitor the traffic on the computer which they can see outside the window. They can also see the length, type of ship and destination.

In Chart Mode, ShipPlotter displays the position and identification of each ship on a chart of the area.

The program comes with a general purpose world map, but it is also possible to add your own maps simply by digitising a chart to create a BMP or JPG graphic file and calibrating the chart using tools built in to the software. ShipPlotter can also read BSB format marine charts, provided that your system's specifications can handle the size of the chart. You can also download satellite photographs.

There are obvious limitations to the program, in the sense that areas where there are no users with a VHF scanner will not be covered by internet tracking, and there have been instances where data for some ships have not appeared to be plotted, but as a cheap source of AIS tracking equipment it can only be expected to improve if the software proves to be popular.

Electronic purchasing - the second generation

As around ten per cent of all ships now use online tools for some or all of their purchasing, the services available are moving into the second generation, with electronic invoicing, logistics management, database matching and ultimately online payment

THIS IS A VERY EXCITING TIME for electronic purchasing. ShipServ, probably the biggest of the services, reports that it currently looks after purchasing for 1100 ships, with transactions growing from 60,000 in 2nd quarter 2004 to 200,000 transactions in 2nd quarter 2005.

MTS, probably the second biggest, looks after 900 ships.

But even if the total number of ships in the world using electronic purchasing is just 3,000, that accounts for only ten per cent of the world fleet (of around 30,000 ships) - and most of these 3,000 ships are not using electronic purchasing for 100 per cent of their transactions.

So despite the fast growth, there's room for a lot more.

Meanwhile, most of the service providers are hard at work building and rolling out the 2nd and 3rd level of their services, developing tools to help suppliers and owners harmonise their databases, track deliveries and do invoicing.

Once a shipowner has been convinced to use electronic purchasing (level 1), getting them to level 2 or 3 should be less difficult.

There are now probably four major companies developing electronic purchasing networks for the full range of different items used onboard ships - ShipServ, MTS, SeaSupplier, and SISCommerce.

Of these four, only two - ShipServ and SeaSupplier - were present in the original dot com era, when there were something like 85 companies trying to set up electronic purchasing dot coms.

Paul Østergaard, CEO and founder of ShipServ

ShipServ is the only company which has survived as a completely independent entity - SIS is 34 per cent owned by the Wilh Wilhelmsen group, MTS was previously owned by Unitor (now owned itself by the Wilh Wilhelmsen group) and SeaSupplier is owned by Stolt Nielsen.

The electronic purchasing companies are the first to admit that mistakes were made in the early years because the complexity of the market was underestimated - there are around 9,200 different companies managing and operating ships and 2,800 suppliers, and they all have different databases and processes.

However one of the initial problems of electronic purchasing - too many IT suppliers - is now fixed. Shipowners have a choice which is broad enough to give them real choice, but narrow enough to give them confidence that whoever they pick will probably still be around and not swallowed up by a larger player. All the surviving companies have solid business plans.

Catalogues and data

One area all of the systems are trying to address is the one of catalogues and coding systems, essential to ensure that a shipowner buys what he thinks he is buying, the supplier can supply what the shipowner wants, and shipowners can compare different suppliers on price.

If there were only one shipowner doing business with one supplier, then making sure they both used the same catalogue would be complex enough. But building a system to enable all shipowners in the world to do business with all other suppliers is a rather complex exercise.

The good news is that the online service companies are getting better at it and the discrepancies between shipowner and supplier databases and data labelling systems are reducing with time.

Terry Kearney, managing director of SeaSupplier, says that the trend is for shipping companies to increasingly use either IMPA standard catalogues, or the catalogues of the specific suppliers they are working with.

There are some instances when it is

essential that a supplier's coding system is used; for example, for supplies of specific chemicals. "If you are buying chemical products from Unitor, you have to use Unitor's catalogue," he says.

"For consumables, the IMPA catalogue will work 85 per cent of the time."

Both ShipServ and SeaSupplier see a process whereby the databases continually improve themselves, by matching a shipowner's database against a supplier's database, so both use the same data sets and labels.

Sometimes different coding systems have to be used for different parts of the world - for example if a supplier normally uses imperial measures, and bags everything according to imperial measures, it isn't very helpful asking him for a metric measure.

It is possible to use different coding systems for more generic items, such as consumables, or lengths of piping.

ShipServ has developed online tools to enable suppliers compile their catalogue listings and then distribute them to customers - shipowners can view the catalogues online over ShipServ TradeNet. If the shipowner isn't using TradeNet, then ShipServ can automatically produce catalogue CDs which can be posted to the shipowner.

ShipServ says that many ship suppliers are keen to work with shipowners to improve the quality of their data, including visiting their offices to go through their databases. Shipowners are understandably reluctant to have all of the suppliers they work with visiting their offices.

Interconnectivity

The issue of interconnectivity between ShipServ and MTS, at the time *Digital Ship* went to press, was unresolved, although with both companies facing increasing pressure from their customers to fix the problem, it seemed likely to be fixed very soon.

Shipowners who want to use both suppliers connected to ShipServ and suppliers connected to MTS currently have to keep switching between the two systems, (being unable to compare prices from one to the other) - or they can integrate both systems into a purchasing software package such as Danaos, Amos, Ulysses or SIS.

MTS has now integrated with SeaSupplier, SIS Commerce and RealMarine, on the basis that no payment is made in either direction for orders transferred over two networks, and it wants the same deal with ShipServ.

ShipServ's business model is to earn revenue on each transaction from both shipowners and suppliers, so long as both have a deep integration with the ShipServ TradeNet network.

Unitor, the big supplier behind MTS (and owner of the company until its recent acquisition by shipping and shipping services giant Wilh Wilhelmsen) argues that it invested in MTS to make itself easy for shipowners to integrate to, and is not prepared to pay any more for integration with electronic purchasing services.

ShipServ has argued for several years that MTS is effectively an extranet for Unitor (a charge both Unitor and MTS have always aggressively denied) and so by integrating with MTS, ShipServ is, in effect, integrating with a supplier, and according to its business model the supplier should pay.

The issue is, in many ways, far more than a normal commercial negotiation, because these were the first electronic purchasing companies ever developed in the maritime industry - an agreement on how money should change hands for transactions going across two online systems could be taken to be an agreement on which company has won and which one is more dominant.

Not surprisingly, there are strong personal feelings at stake.

ShipServ has many friends and supporters in the industry, who have seen the company rise from one of around 85 shipping dot coms, to be the only one to survive without the strong backing of a large supplier or shipowner. This has taken a lot of determination and effort, and having 1,200 vessels using the system for purchasing is a great achievement.

But this is still only a very small part of the market, with around 40,000 vessels. Does ShipServ have the clout to tell Unitor, Alfa Laval, Jotun and the other suppliers behind MTS how they should transact with their own customers? ShipServ will certainly find it hard.

ShipServ

ShipServ says it is becoming increasingly aware of the importance of a collaborative approach between buyers and suppliers in

forthcoming Digital Ship events

- DIGITAL SHIP ATHENS
  Metropolitan Hotel, Athens, October 18-19, 2005
- DIGITAL SHIP AT EUROPORT MARITIME
  November 2-3 2005
  Modern maritime satellite communications, ship maintenance management, information technology in container ports, optimising ship supply
  see www.thedigitalship.com/rotterdam.htm
- DIGITAL SHIP CYPRUS
  Hawaii Grand Hotel, Cyprus, 25-26, January 2006
- DIGITAL SHIP DUBAI
  February 2006
- DIGITAL SHIP OSLO
  March 28-29, 2006

Check our website for the latest event details www.thedigitalship.com

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order to create more efficiency, rather than buyers beating suppliers up over prices and asking for quotes for every single item ordered.

Information technology and connectivity is obviously very important in helping buyers and suppliers work more closely together, but good human relationships ("trust") are important as well.

The company reports 200,000 transactions in the 2nd quarter of 2005, up from 60,000 transactions in the 2nd quarter of 2004 - and it currently has 1100 vessels purchasing through the network.

According to its analysis, the total time between creating an order and receiving goods reduces from 52 to 43 days when using the system, and the time between approving requisitions and making orders reduces from 11 to 8 days.

Its biggest customer, with over 100 vessels, is Anglo Eastern. The next biggest, with 50-100 vessels, are TESMA, MSC, NYK, Trans Mar-Supply, OSG, CEC Shipmanagement and Seatrade Groningen. Customers in the 20-50 category include Høegh, Fairmont, IUM, Lauritzen, MK Shipmanagement, Meridian, Chevron, Keystone, Thome and Vroon.

ShipServ wants to be able to help purchasers look after more vessels with the same number of full time employees, and get better prices and unit costs, save on delivery costs, control budgeting, find new / better suppliers, track key performance indicators, and be able to employ staff who are specialists on sourcing specific products.

An important issue is upgrading the ways that ship suppliers link into TradeNet. ShipServ has several different stages suppliers can go through when linking with the system, including logging onto a website, receiving the communications in electronic format and going through them like e-mails, and a deep integration with their own computer system.

Shipowners do not need to get involved in how integrated their suppliers are, but they should see their service improve as suppliers get more integrated.

ShipServ is helping suppliers put their catalogues together and distribute it to their customers over the TradeNet system, and is mapping together shipowner's catalogues with suppliers.

Brynjar Gevelt, managing director of Marine Transaction Services

The company is also building its logistics solution. It was first launched several years ago but now starting to take off.

It will shortly launch its online invoicing system and then online payment.

Marine Transaction Services

Brynjar Gevelt, managing director of Marine Transaction Services, talked about the integration which MTS has recently made with Royal Caribbean Cruise Lines, with 29 cruise vessels.

Brent Shinall, director of technical purchasing with Royal Caribbean and Celebrity Cruises, said in a testimonial that MTS had provided flexibility and adaptability to find solutions which would work, both for RCL and for its suppliers.

It was experiencing improved cycle times as a result of using the service, he said. Mr Shinall was pleased with how MTS has different options for suppliers as to how much they integrated with the service, ranging from just receiving orders on a website to a deep integration.

Mr Shinall also said he thought that suppliers would benefit from the lower costs they would achieve from being connected to MTS.

RCL uses the AMOS maintenance and purchasing software throughout its fleet, and MTS connected to that.

Of particular importance was the issue of matching invoices with purchase orders and deliveries. "The cost of matching invoices is a real hot issue over there," says MTS CEO Brynjar Gevelt.

RCL also wanted to improve its product quality and product data management, and manage it in a more simplified way.

The e-commerce system is being implemented in 3 stages. The first is to choose an e-commerce provider and engage the major suppliers. Phase 2 is to implement the core and extended e-commerce services. Phase 3 is to roll the e-commerce out to all company suppliers and use electronic cataloguing, invoicing and logistics.

SeaSupplier

SeaSupplier, the online system owned by Stolt Nielsen Transportation Group (SNTG) and used by SNTG, Seabulk, BP Shipping, NYK Line and Teekay, has recently spent $1m having its system completely rebuilt, by Tata Info Technology of India, which will also host the system. The main reason for the rebuild was to incorporate 300 requests for new functionality, sent in by customers.

Having the system built and hosted by a third party means that it is much easier to bring in new customers to the system, because Tata can put as much or as little manpower and computing power into the system as required.

Terry Kearney, managing director of SeaSupplier, says that the cost of technology is really dropping and the options for new hardware becoming much more flexible. The new version uses the Microsoft dot net platform. "We can give our customer much more control," he says.

SeaSupplier is developing a range of different solutions for shipowners and suppliers, so they can gradually increase their integration.

Microsoft technologies are finding their way into the shipping industry, with services such as ShipCentric developing Microsoft based systems for shipping. Mr Kearney believes Microsoft offers shipowners and suppliers an opportunity to lower their software costs, with products normally having just a one-off cost rather than annual licensing fee, and a low maintenance fee.

It is becoming possible to integrate a shipowner or supplier's system into an electronic purchasing system in a matter of weeks rather than months, with very little business disruption.

"The cost of technology is dropping" - Terry Kearney, managing director of SeaSupplier

The next stage of developing SeaSupplier is bringing in logistics information. "There's no reason why logistics can't be connected," Mr Kearney says. "Shipowners send so many faxes to ship agents, and make phone calls to trucking companies. All these people are needed to get the product delivered and to pay the bill."

"Customers said - we need help in logistics - we want to know where the product is. We want all these guys to feed us."

It is now becoming possible to create all these services for electronic purchasing, he says, now the IT companies have bigger budgets and more customers, and technology costs are dropping.

Another important area of development is invoicing, and connecting invoices to deliveries.

"You can order 5 things, the suppliers say we can only deliver you three, and the agent has the delivery receipt," he says.

SeaSupplier has built reporting modules into its latest package for shipowners, SeaManager II. It has tools to determine how many requisitions are being made, and how much work individual purchasing managers are doing, how long items take to be delivered and how money is being spent.

It is trying to develop tools which stop purchasers falling into traps. "One issue we've noticed is when buyers get into a pattern of always sending out three requests for quotes to the same 3 suppliers, but 2 guys never win the business so they don't care about quotes being slow or high," he says.

SeaSupplier also provides all of its customers with comprehensive pricing data, so they can make comparisons and spot trends. For example they can monitor fuel prices in major bunker ports around the world.

The most important issue, Mr Kearney says, is reducing the cycle time (time between making orders and orders being received). A longer cycle time indicates that more manpower is being involved in each transaction, and the work is much complex. For example, if the cycle time is 60 days, it means that everybody involved in the purchasing process is managing 60 days worth of orders all the time.

The benefits to suppliers of joining SeaSupplier is the market visibility.

Mr Kearney cites three stages of online market visibility. The first is when the supplier has his own website. The second place is when he is included in online directories of suppliers. The third stage is when he is built into the purchasing systems, so his name comes up when the buyer is looking for a supplier. "Very few buyers have got time to look up a supplier," he says.

The company is currently developing online catalogue tools, tools to flag up when hazardous goods are being delivered to the ship (and manage the associated documentation), tools to do electronic invoicing and electronic payment tools.

Star and SIS Commerce

Star information Systems reports that currently about 1100 vessels are using its software, and around 450 are using its electronic purchasing system SIS Commerce.

SIS recently signed a deal with Norwegian shipping company Stavangerske to use the Star Maintenance and Star Information and Planning System (IPS) on its 19-strong fleet.

The software system is designed to improve work-flow efficiency, upgrade maintenance processes and enable management of purchasing routines.

At present, an implementation plan is currently being developed, but both Star and Stavangerske believe the system will be fully operational over the next six months.

This is the second time the two companies have worked together, having previously collaborated on another solution called RAST.

Meanwhile Farstad Shipping, a supply vessel operator, has recently implemented Star software solutions in its technical management and purchasing departments for its fleet of 47 vessels. It will use BASS CrewNet and BASS PayNet solutions on all of its ships and newbuilds.

Using SISCommerce: Farstad Shipping. Pictured here is Farstad's vessel **Far Grip** *towing an oil rig*

Helge Warholm, purchasing manager, hopes that the new system "can standardise definitions for spare parts, equipment and installation instructions, coordinate purchases with Star IPS and utilise SISCommerce for e-procurement."

The software enables shore-based offices to interact with vessels to get real time data via the internet. When in need of a specific spare part Farstad can now check the stock level on any of its vessels to source and transfer the spare part from another ship.

Working to standardize definitions has been a necessary part of the process. Previously, the fleet had about 17-18,000 different accounts, which the company has been able to reduced to about 5,900. Once complete, the system will operate on all vessels - including those currently under construction.

Farstad is also in the process of installing the Star Event program, a soft-

ware solution designed for the reporting of accidents, near misses and non-conformities. This module will make event reporting uniform across the fleet and help the company standardise all aspects of safety management.

OVDS, which operates six cruise vessels along the "Hurtigruten" line is using Star Information Systems for its purchasing and maintenance system. It will install the Star Information and Planning System (IPS), with an option to also install Star Central Purchasing System (CPS); it will install the Star Maintenance as well. The new software replaces its previous RAST software built on an MS-DOS platform.

"We sought a system capable of improving work-flow and reducing costs," says Star. "Star Solutions fit the bill."

Installation work began on August 1, scheduled to be operational by next summer.

Star is planning a new development to its Information and Planning System (IPS), which will enable users to communicate via e-mail within the system, and arrange their communications in personal folders. Work orders, purchase orders and non-conformity reports can be sent to named persons or specific accounts, eg superintendents.

People with similar responsibilities can share information and cover for each other during out of office days.

Star has designed a new software for docking projects; the software can be used to integrate the maintenance module with the dry dock, including managing quotes, a software module for yard superintendents, and creating docking specifications.

The company has developed a messaging system which works within its purchasing system, so that staff can leave each other messages without using e-mail.

Shipowners using ILS Mart might find a manufacturer who can produce parts which are declared to be compatible with some of the leading manufacturers of ship equipment, but being sold at a fraction of the price.

The company is providing functionality for suppliers to host their own catalogues on the system, which buyers can search as they search all the products available on the site.

ILS Mart sells both new and second hand parts. There are catalogues of spare parts from the major manufacturers. Several shipbreakers remove all spare parts which look salvageable from a ship being broken up and sell them on the site.

Mariners Annual - provisions database

Mariners Annual, of New Hope, Pennsylvania, has put together what it believes is the most up to date, largest and most detailed database of provisions and bonded stores (alcohol) - with more than 6,000 items.

The company produces an annual directory of provisions and bonded stores, and has worked with the suppliers in the directory to produce its database of items which shipowners buy, with over 6,000 items.

Shipowners can use the database as a basis to make orders of provisions and bonded stores with suppliers around the world.

For example if a buyer wants to order bananas, he finds bananas in the "fresh fruit" category. He can choose if he wants the bananas to be delivered green, half ripe or ripe. He can choose from the standard package sizes which suppliers use for bananas (eg 18 kg box).

Regional foods have been included in the database, including Chinese and Indian food.

Mariners Annual supplies the database on a CD-ROM, including photographs of the items and functionality to put together requisitions and e-mail them to suppliers, which are also on the database. The supplier inputs the prices and e-mails it back.

The database is integrated with ShipServ, (the company has a joint marketing agreement with Mariners' Annual).

It can also be supplied as an Excel spreadsheet so companies can integrate it any way they like. DS

WEBSITES
www.shipserv.com
www.martranserv.com
www.seasupplier.com
www.sismarine.com
www.ilsmart.com
www.marinersannual.com

ILS

ILSmart, the online system for finding and selling spare parts for ships (and aeroplanes), is reporting a steady 10 to 20 per cent growth a year.

The company has a flat fee for companies who want to join, of Eur 3495 - which applies equally to suppliers and shipowners, and applies equally to massive oil companies and one-stop ship suppliers.

ILS does not take any commission out of the sale - it merely connects together people looking for a specific part with people who have that part available.

There is no auction model - ILS says it tried an auction facility but it didn't take off. Nevertheless the company is pleased to be thought of as an ebay for shipping.

"We were an ebay for shipping long before ebay was dreamt about," says Rob Ramshaw, marine sales director with ILS' UK sales agent Intralink. ILS is about 30 years old.

BASS - 80 customers and 500 ships

www.bassnet.no

Shipmanagement software company BASS reports that it currently has 80 customers, and its software is running on 500 ships. Major clients include NYK Line, K-Line, RCL in Singapore and Jebsen.

Barber Shipmanagement, which, like BASS, is also part of the Wilh Wilhelmsen group, accounts for 25 per cent of its business.

The company has embarked on an aggressive push to increase its market share, particularly on its electronic purchasing system, getting companies to move out of Microsoft visual basic applications to something more sophisticated.

BASS is developing application management services, where it takes responsibility for keeping its own software applications running, so the shipping company does not have to do anything.

The primary focus of the company is on the product however, and building the right applications.

BASS is currently tackling the problems of making sure shipboard software works reliably, sending its software to ships on CDs which install automatically.

It has a tool called 'Dr Bass' which will run through a shipping company's entire database and spot things which are going wrong, sending a snapshot of the shipboard computer back to shore as an e-mail attachment for analysis.

The company also has a groundbreaking tool to enable its customers to anonymously share information about accidents, and what they have done to prevent accidents from happening again, called SAFIR.

It is well prepared for the software demands of the oil companies´ TMSA (Tanker Management Self Assessment) code, which forces tanker operators to measure key performance indicators and benchmark their performance against other tanker companies. ■

The future of purchasing

The International Maritime Purchasing Association (IMPA) annual debate brought together the manager of ship supplier SevenSeas with the purchasing manager of Egon Oldendorff, to discuss how both buyers and suppliers can reduce costs and build relationships

THE SUBJECT "reducing costs and building better relationships" was chosen for debate as a result of the concerns and opinions that had surfaced over two previous days of workshops at the 2005 International Maritime Purchasing Association conference, where purchasers and suppliers from around the world had gotten together to discuss some of the major issues facing their sector of the maritime industry.

The major issues that received the most attention included the need for a greater level of research when choosing supply partners, the importance of purchasing strategy to an overall corporate strategy, the tactics and opportunities for small versus big buyers, and the dangers involved in outsourcing, particularly with reference to low-cost services in China.

The panel for the debate comprised three members, under the guidance of chairman Captain Stephen Bligh, chief executive of the Maritime and Coastguard Agency.

The panel was Steve Mullins of PMMS Consulting and the Chartered Institute of Purchasing and Supply; Matthias Huebner, manager of purchasing for Egon Oldendorff; and Peter Machado, group general manager of SevenSeas. The audience included both purchasers' and suppliers' representatives, with all sides being involved in the discussion.

Monitoring suppliers

The first matter to be raised was that of the recent breakdown in the supplier / purchaser relationship between British Airways and Gate Gourmet at Heathrow Airport, UK, which led to serious industrial action and disruption to a number of BA services.

The question asked how this kind of situation can be allowed to develop, and what lessons maritime companies can learn from it and apply to their own businesses.

One of the key points made was that sourcing all of your requirements for a particular area of your business in one place can be dangerous.

"It is irrational to be tied to just one supplier", said Matthias Huebner. "You become too dependent. You outsource for cost reasons, but you should also only be outsourcing to specialists who will provide the service in a more professional way."

It is also very important to monitor your supply chain relationships. "There should have been more noticeable signals before this happened", commented Peter Machado, referring to the BA case.

"Food and personnel are among a company's biggest operational costs, including companies in shipping, so they must be closely watched. You should pay more attention to the signals."

Captain Stephen Bligh, chairman of the 2005 IMPA debate

One of the points that came up a number of times was the necessity for due diligence when choosing a supplier or a number of suppliers.

One member of the audience mentioned that "you can grant a monopoly to a supplying company if you do your due diligence.

"There is a tendency for shipping companies to grant a majority of their business in a particular port to one supplier, and that can be successful. I think the more suppliers you have, but the less you use, the better off you are."

Mr Mullins pointed out that the due diligence process has to be comprehensive. "You need to do a full supplier appraisal", he said. "It is important to do a detailed financial and risk analysis. All different types of risks need to be analysed. Unfortunately, people around the world are doing this really badly."

"You can't be world class driving a desk", he continued, stressing that managers need to visit suppliers.

"But senior management don't see this as part of their role. Companies are doing their due diligence poorly, or not at all."

Other members of the audience pointed out that if you are to have one supplier it is imperative that everyone is clear about the deliverables on all sides, and that it is always incumbent upon the parties to fully investigate their supplier options.

One member remarked, "We must ask - Who can give us the quality we need? Who can give us the service we need? It cannot be all just based solely on costs."

Another member gave an example of a Japanese company that had 154 suppliers - but had a team of 160 buyers working to manage them.

In this case, he said, the buyers were so involved that they were almost running the suppliers' businesses for them.

This can help you to protect your own business - if a problem with suppliers causes problems for your own services to your customers (like the BA episode) this will have a negative effect on your brand value, even if the problem lies with the performance of the supplier company.

However, Mr Machado pointed out that shipping has its own challenges, and that using one supplier may sometimes be a more convenient approach, saying that "ships are moving around the world, we're not the same as other businesses. Our parameters are different."

Outsourcing

A question was asked about the dangers of outsourcing, and how the marine industry is "a little bit different."

While Mr Machado said that "outsourcing is not bad for most things", Mr Mullins warned against following this trend unnecessarily.

"Right now outsourcing is fashionable", he said. "It's very dangerous for a company to do something just because it is fashionable. You must think about what the good reasons are to outsource certain functions."

"Then you must really look hard at the supplier market", he continued, "and really consider why you want to outsource to them. It is important not to take a decision this important, that will cost some people their jobs, just because of the latest management buzzword."

"Sometimes you have to outsource functions, maybe like cleaning or security", added Mr Machado, "and as you get bigger it is necessary to send some things to specialists.

"But you have to do your homework - the company you choose will then be flying the flag for your company, so they need to be right."

The audience seemed to agree with this. "There is a perception that you need to outsource everything", said one participant, "to bow to the dollar pressure to cut costs. But quality needs to be considered. You have to outsource the right things and keep the important tasks."

Another speaker added that "widely speaking, different forms of outsourcing have been in shipping for years, like in ship management. It can be positive, it can be negative. You have to remember that every outsourcing company is working to try and make their own return."

Senior management

The chairman asked the purchasers in the audience if they felt that they were being heard by the senior management of their organisations.

The answer seemed to be 'no'.

"Maritime purchasing hasn't reached the strategic levels it should have, like it has in other industries", said one purchaser. "We're not heard enough. We need to take our opportunities to improve."

Other purchasers said that "we still have a long way to go to get purchasing fully accepted by senior management."

Mr Huebner said that one of the reasons for this was that "shipping has traditionally been more ruled by technical aspects. Commercial factors are not considered highly enough."

continued on page 16

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continued from page 14

Small buyers

The panel also discussed if a small buyer could still get a good deal in today's market.

One audience member felt that it was possible, saying, "(some suppliers) see a big cruise line and see dollars. Sometimes they see a small buyer, say a small Polish fishing fleet, and say 'let's take care of these guys' and give them a good deal. The fat cats don't always win."

A very important point that was made was that, small or big, it is the smart buyers who will get good deals. "A small buyer can maybe offer something like sustainable business that can be attractive to a supplier", said one audience member.

Mr Machado did point out, however, that "a company buying more should get a better price - all things being equal". Mr Huebner agreed, saying that "in general, being a big buyer helps."

Panel member Steve Mullins, Chartered Institute of Purchasing and Supply

Mr Mullins went on to say that there were still options for small buyers; "It's not how big you are, it's how good you are. Marketing to the seller can offset a lack of volume. If you know your supplier, know their finances, know when their year-end is approaching - you can make your deal attractive."

An audience member added that "a smart small buyer won't always be small, and down the road you may develop a very profitable arrangement if you work together early. If you give all of your attention to big buyers it can be dangerous." The chairman also noted that "big buyers can push out the lead time for payment, but the small guys will pay up. And we all know cash flow is king."

China

The position of China as a low-cost supplier was the next item on the agenda.

Mr Mullins pointed out that the picture usually painted of China's giant economy is a little unrealistic, in that "it's made up of 10, 20 or 50 economies all joined together. The supply chain moves across these economies."

He added that "low cost opportunity is transient. You'll have to consider that you'll have to move, move, move to follow it, and that may not be in your best interests."

Mr Mullins made another point about forward planning; "You have to think of the future. If all of the buyers go to China there may be no domestic supply base left if you need it in the future." Mr Machado added that "somewhere down the line costs will catch up. You have to look at the total cost package."

There were some reactions from the floor. "The China issue hasn't hit marine purchasing hard yet - but I think it will", said one audience member, while another warned "Watch out for China to build a monopoly on supply in certain areas and then raise their prices once the competition has been eliminated."

It was suggested that the biggest maritime effect from low-cost Chinese competition had been in the provision of steel to the shipbuilding and repairs markets.

Finding the people

The final topic on the agenda for the debate was a question of whether highly qualified and able people will be in more demand in the modern era.

Mr Mullins believes they will and pointed out that in 1990 there wasn't a single professor of purchasing at any university in the UK, but last year saw in excess of 200 graduates with purchasing MBAs, and that there is an over demand for their services.

Mr Huebner also agreed with this sentiment, and said that "new technology will make purchasing easier, and allow for different levels of purchasing."

The audience also thought that further professionalism would be a big benefit in continued improvements in this area.

"Purchasers need to learn about all areas of the organisation", said one participant. "Purchasers need to have a global perspective - it's very strategic stuff. Professionalism is valuable in this regard."

Despite all of these ideas and opinions about the need for advanced qualifications and intricate strategies, the final word from the audience brought it all back to basics.

"We should have qualified people on both sides, that's important", said one gentleman. "But common sense and a commercial nose is still the key to running a successful business."

It seems most attendees agreed that new strategic purchasing will never replace an old-fashioned nose for a deal. DS

Coming soon - shipboard GSM

Irish technology company Altobridge promises to start marketing reasonable cost GSM services for onboard merchant ships this Autumn, the first company ever to do so

SOFTWARE-BASED communications company Altobridge is getting ready to launch a major assault on the merchant marine market later this year, as live trials of its GSM Gateway technology, which have been underway since May on three, as yet unnamed, vessels, come to a close.

The shipboard GSM gateway is presently commercially available, but it is hoped that by November they will be in a position to announce a full-scale launch of their system in conjunction with a leading satellite communications provider, a move that Altobridge feels should make the merchant maritime market take notice of the further possibilities in shipboard GSM.

While initially developed with the aeronautical market in mind, Altobridge feels that a wide range of opportunities exist in providing their technology to maritime customers, and that this will probably be their most important market in the near future.

The company has already had some success in the megayacht market, but feels that their key customers will be in the merchant marine sector.

The system

The Altobridge product enables users with existing standard wireless handsets to communicate onboard ships of various sizes, utilising any approved devices such as a GSM Handset.

Subscribers roam on the maritime network in the same way that a subscriber roams from one country to another. Calls to and from these roaming subscribers are then charged to the subscriber's home account and appear on the subscriber's bill like any other roaming call.

The users' own GSM devices will communicate with the gateway hardware installed on the ship, sending and receiving information to convince the phone that it is still connected to a mobile network.

The gateway is integrated with the satcoms, which only begin to exchange information with the shore when a call is made or received. The system is set-up to be integrated with any satcom provider, and as such is not restricted to use with one particular system.

"It's essentially a 'Plug and Play' type system", explains Mike Fitzgerald, CEO of Altobridge.

Mike Fitzgerald, CEO, Altobridge, wants to make GSM more accessible for merchant vessels

"We worked hard to enable integration with the systems already existing on the vessels." They felt that this ability to integrate with onboard technology was an area of importance for shipowners.

They believe that their gateway is the only way to provide shipboard GSM service on ships with a small number of people at a reasonable cost.

"We are not a GSM service provider, we are a vendor", says Mr Fitzgerald. ""We just enable the GSM system to be used more cost effectively."

"If you want GSM for 500 people then you need to go elsewhere", he says. "That's not what our system does. But if you want to have GSM for less than 250 people, then you have to come to us - there's no real alternative."

Not always on

While the telephones are always working, there does not need to be continual data communication between the ship and GSM network (about location of phones and so on).

This one of the biggest technical differences between shipboard and shore side GSM. Shoreside GSM antennas continually send data to the international phone network, even if no-one is making phone calls.

On ships, this data would have to be paid for at expensive satcom rates, so Altobridge has found a way to do without it.

Mr Fitzgerald explains that in a situation where there would be constant incoming and outgoing traffic, like, for example, on a cruise ship with hundreds of people with mobile phones, their system would be redundant.

"The value in our system lies in the management of the use of the satcoms", he says.

"Our technology makes sure that expensive satellite time is only used when absolutely necessary. If there is constant traffic then there is no point using our system."

He feels that this makes their system ideal for the significant number of large ships that operate with crews of between 10 and 20 people, giving them the opportunity to use their own GSM phones onboard and stay connected to their friends and family onshore.

Switch off close to shore

The Altobridge system is also configured to automatically disengage when the ship gets close enough to the shore to be within range of the local terrestrial network, so mobile phones will revert to normal roaming mode.

While this should limit the extra satellite based costs to the users, it was also a requirement necessary to stop infringement on the rights of the land-based service providers.

"Mobile network providers pay huge amounts of money for their licences", says Mr Fitzgerald, "so they obviously wouldn't be happy about somebody interfering with their rights. We're set up to make sure that doesn't happen."

Who pays?

While their system provides seafarers with the opportunity to use their phones while onboard in remote locations, the benefit to the shipowner of paying for and installing such a system for use by the crew is a little less clear.

Altobridge feels that their system would lead to a reduction in administration costs, as shipowners and managers would need to devote less time to managing crew calling, and would also mean higher crew retention rates due to an improved quality of life for those seafarers who have to spend long periods away from home.

Whether these factors will prove decisive in driving the uptake of their technology remains to be seen.

The success of their system will also be affected by changes in the

costs of satellite communications, which cannot be controlled by the company.

Further reductions in the price of satcom minutes, with call charges being brought down closer to land-based roaming charges, for example, would make shipboard GSM an even more attractive proposition, but Altobridge are dependent on satcom companies to make their own moves in that direction.

In the long run the company hopes that GSM operators will partner with them in trying to make the technology more widespread.

"We expect that they will begin to offer subsidies for the installation of the gateway units", says Stephen Brunskill, director of business development.

"We will provide them with an opportunity for more revenues." The company says that they have already been in discussions with a number of unnamed GSM operators in this regard.

Future upgrades

The future for Altobridge lies in the continuing upgrading of their system to make the use of onboard satellite bandwidth as efficient as possible.

As GSM technology continues to improve it necessitates the exchange of even greater amounts of data.

"The newest 3G mobile phones send huge amounts of information back and forth", says Mr Fitzgerald.

"To connect this into a ship's satcom system would mean eating up most of the available bandwith. We have to keep improving our system to make sure that we can deal with the advances in mobile communications."

There is also the possibility of linking their technology into cargo tracking systems.

"Instead of a container sending a constant signal to the shore saying 'I'm okay', our gateway can be set up to only engage the comm systems when something changes or goes wrong", he explains.

"The people on the shore don't need to know when things are okay, they need to know when there's a problem."

One way or another, it does appear that the availability of GSM services on board merchant vessels is likely to become more widespread, and that traffic on the systems will continue to increase as people demand further options in communications.

Altobridge is hoping that their system will play its part in the availability of communications around the world. DS

Website:
www.altobridge.com

UKHO invests in ENC infrastructure

www.ukho.gov.uk

The UK Hydrographic Office has invested in infrastructure to support its production of official ENC electronic charts for shipping, which should help it produce and update ENCs more quickly, whilst also guaranteeing the integrity and security of data from hydrographic offices around the world.

Expanding worldwide ENC coverage is a major priority for UKHO, both with its own data and including other providers' data in its Admiralty service. The IT infrastructure is designed to be able to handle the increased number of charts going through the system.

UKHO says that the background infrastructure should "lay the foundations for the next generation of digital products that will set the international standard for years to come."

UKHO is not able to reveal how much money has been invested in the project, but it has a dedicated project team of five staff and can call upon other members of its ENC production team as required.

The initiative builds on the "International Partnering Programme" UKHO has set up to help official hydrographic offices around the world to work better to produce ENCs.

Under the IMO "WEND" principle, all countries are supposed to create their own ENCs - UKHO cannot produce charts of other areas of the world, as it has done in the paper chart era. However it is able to assist other countries in the production of ENCs.

"We are currently working with approximately half a dozen nations in a number of ways. Some nations have asked us to help produce their ENCs, some have asked for us to produce their ENCs on their behalf, and for some we are providing a mixture of both options," says UKHO press officer Nick Tasker.

"In addition to this production help we are heavily involved in assisting some other nations in the development of their own capacity. We are instrumental in helping several International HOs with their ENC scheming, helping determine coverage, scales and requirements."

UKHO is also running ENC training courses in Taunton for cartographers from other hydrographic offices to learn about the production and compilation of ENCs.

France makes African and Caribbean ENCs

www.shom.fr

The French Hydrographic Office has begun producing much needed official electronic navigation charts (ENCs) for the certain African and Caribbean countries where it remains the charting authority, and seas around French overseas territories.

Areas of expanded French ENC coverage -French coastline, central America, North West frica, Gulf of Aden

ENCs are now available for the Bab El Mandeb strait between Djibouti and Aden, and some small-scale ENCs covering the Mozambique Channel and west Africa will also be distributed this year.

In addition some ENCs for French dependency La Réunion (in the Indian Ocean) will soon be produced, while coverage of the French islands in the Caribbean and French Guyana will be completed in 2006.

The France Hydrographic Office (SHOM) says it has produced 140 ENCs in the last 4 years, with priority given to commercial sea lanes and environmentally sensitive areas around France.

It now has coverage of 90 per cent of merchant and passenger navigation routes around France, including the English Channel, the Atlantic Coast and Mediterranean.

It will carry on developing ENC coverage around France, planning to add 100 new ENCs by the end of 2007.

Production plans are presented on the IHO and SHOM web sites, at http:// ohi.shom.fr, under ENC/ENC coverage, and at http://www.shom.fr/, under "cartes électroniques", respectively.

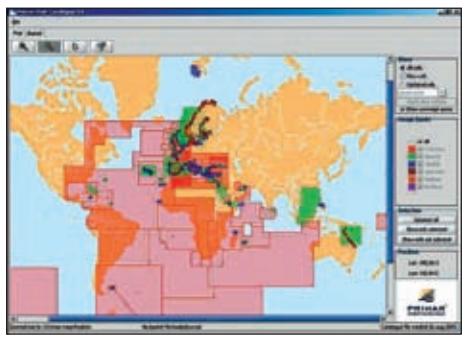
Primar grows ENC coverage

www.primar.org

Primar Stavanger has made some additions to its official electronic chart (ENC) coverage portfolio.

New charts include general ENCs and approach ENCs of the coast of Nordland and Troms in Northern Norway; general ENCs of Spain and Portugal; and overview ENCs of the Mediterranean and Black Sea.

It has introduced general ENCs for the South China Sea, North Australia and the Coral Sea.



Primar's worldwide ENC coverage

Primar and IC-ENC campaign at IMO

The two rival official electronic chart services, Primar Stavanager (operated by Norwegian Hydrographic Service) and IC-ENC (operated by UK Hydrographic Office) managed to put their differences aside long enough to run a concerted campaign at the International Maritime Organization (IMO) NAV 51 meeting in June, to try to persuade countries to produce more official electronic charts (ENCs).

Delegations to the meeting were asked to feed back information on carriage requirements and local ENC availability to their local Maritime administrations and port state control.

Primar and IC-ENC also presented facts about charts and carriage requirements.

Speakers included Admiral Maratos from the International Hydrographic Organisation, Dr Wyn Williams, head of the UK Hydrographic Office, and Frode Klepsvik, head of the Norwegian Hydrographic Service.

Norway pilot services introduced by Primar

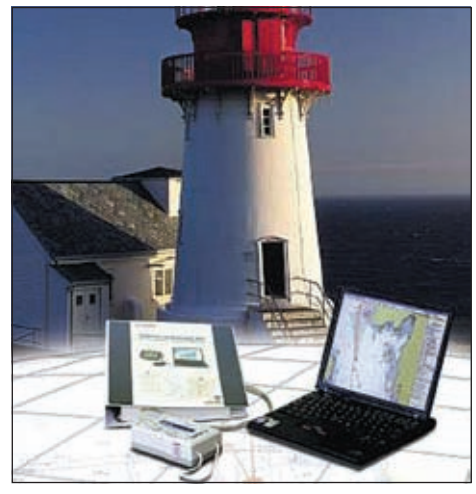
www.primar-stavanger.org

Primar Stavanger has introduced a new support service to provide updatable electronic charting facilities to over 280 Norwegian coastal pilots.

The pilots can be integrated directly into Norway's official electronic chart (ENC) database, so they always have the latest and best quality data available.

According to Primar this system has reduced both costs and complexity in distributing ENCs to a workforce which is continually on the move, and cuts the time taken for a new update to be actively adopted by a pilot to just minutes.

Several other nations are evaluating the service, and Primar Stavanger hopes to be able to offer a pilot supplier agreement to all of its cooperating hydrographic offices.



ENC updates, now more accessible for pilots

Imtech permitted for commercial vessels

www.rhmarine.nl

The Dutch Transport and Water Management Inspectorate (IVW) has confirmed that Radio Holland's UniMACS BlueLine system of Imtech is permitted for use on board Dutch commercial vessels.

Radio Holland have agreements in place to supply and install the system on 4 vessels for Wagenborg Shipping and on 6 vessels for JR Shipping.

The Blue Line configuration meets the technical requirements needed for Dutch flag vessels to be exempted by IVW from carrying a portfolio of paper charts.

The Blue Line bridge consists of ECDIS, X and S-band Radars, a Conning display, an adaptive 'heading pilot' and an optional track pilot. The system has also recently been equipped with Furuno radar scanners.

The BlueLine Bridge - a substitute for paper charts

The ECDIS component of Blue Line is equipped with radar and AIS overlay.

Since it was introduced in 2004 there have been orders for 15 Blue Line bridges, and these will be installed from October 2005. The Blue Line bridge is a more compact system for shortsea and smaller vessels.

Ocean Systems launches VDR

www.ocean-systems.com

Ocean Systems, a company in California which makes ship decision support systems, has launched its own voyage data recorder and data capsule.

The products are dubbed "operation support information voyage data recorder" (osiVDR) and "operation support information protected data capsule (osiPDC).

The capsule is part of Ocean Systems' "vessel optimisation and safety system" (VOSS). VOSS uses real time, stored and forecast data for wind, wave, ocean current and ship performance, to manage the ship's routing.

Five additional modules are available which enable shipowners to do more with the VDR data.

OsiWatch uses VDR data to provide alarm, conning, AIS, streaming audio and radar information anywhere on the ship.

OsiRemote sends specific VDR data to shore by e-mail, so it can be examined.

OsiLog uses data from the VDR to create an electronic log.

OsiPerformance detects and monitors degradations in operating efficiency, which could indicate hull / propeller roughness, poor engine condition, or problems with fuel quality. It can send alerts when parameters are outside acceptable limits.

OsiReplay is a tool for analysing historical data for incident analysis, operations quality assurance and best practise training.

Transas Hong Kong opens

www.transas.com

Transas has opened a new office in Hong Kong, jointly managed by Yao Zhang, Transas China general manager, and Dmitry Semenov, Transas Marine Pacific general manager.

The office will focus on sales and services for navigational systems in the Hong Kong area.

JRC's US east coast warehouse

www.jrc.co.jp

Japan Radio Company (JRC) has opened a new east coast warehouse in the US to support new product shipments to dealers on the eastern seaboard and the Gulf Coast, as well as in Central and South America.

All sales orders, returns and service requests will continue to be processed from JRC's Seattle office. For the time being only finished goods will be warehoused in the east coast warehouse. Parts will continue to be delivered from the Seattle warehouse facility.

US considers real time navigation information service

http://co-ops.nos.noaa.gov/d_ports.html

The US government National Oceanic and Atmospheric Administration (NOAA) is considering putting together an information network to provide seafarers with real time water levels, currents, weather and other data.

The Physical Oceanographic Real-Time System (PORTS) is a program that has been introduced by the National Ocean Service in the US, which aims to promote safe and cost-efficient navigation by providing ship masters and pilots with accurate real-time information to help avoid groundings and collisions.

Data about water levels, currents and weather would be gathered from buoys and sensors in ports and harbours; this information could be given to seafarers and shipowners by telephone and over the internet.

PORTS would also analyse the data to make better predictions about future tides and currents.

It could use the data to be able to load vessels more optimally - a few cm draft clearance means a lot of extra cargo, so shipowners and regulators would know if a ship could carry more cargo safely.

Ships could also know much more clearly in which timeframes certain passages would have sufficient depth of water.

The system builds on a first PORTS project in Florida in 1980, which followed the ramming by a ship of the Sunshine Skyway Bridge in Tampa Bay, causing the deaths of 35 people.

New AIS mapping on SeaSearcher from LMIU

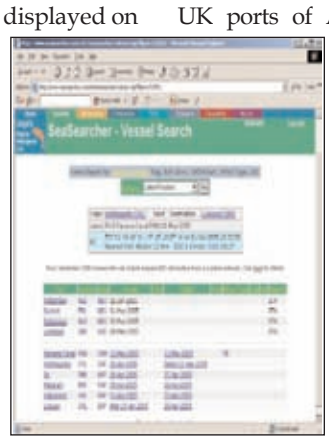
www.seasearcher.com/mt/seasearcher/ais.jsp?tab=ais

Lloyd's Marine Intelligence Unit (LMIU) has launched its AIS mapping capabilities program. The AIS data can be displayed on a map, so users can see where the ships are.

The mapping system was developed in collaboration with Canadian geomatics software company CARIS.

Users can zoom in the maps to see the ships on full scale maritime charts, so they can get a detailed view of all the ships in a port.

It is possible to filter vessel information by type, classification, flag, gross and deadweight tonnages, and by status (underway, berthed or anchored).



Displaying AIS data on maps - LMIU's SeaSearcher

The SeaSearcher tool integrates ship information with Lloyds' database of vessels, companies and ship movements, as well as previous vessel casualties, previous ports called at, other vessels operated by the same company, ownership information, vessel characteristics and port records.

AIS receivers are currently running in the UK ports of Avonmouth, Boston, Dover, Harwich / Felixstowe, Hull, Liverpool, Port of London, Medway Ports, Milford Haven, Plymouth, Southampton and Tyne.

Around Europe, receivers are located in Aalesund, Trondheim and Haugesund, Norway; Belfast, Ireland; Bourgas and Varna, Bulgaria; Rotterdam, Netherlands; Bremen, Germany; Klaipeda, Lithuania; Limassol, Cyprus; Malaga, Spain; and Valleta, Malta.

Around the rest of the world, transponders are working in Balboa and Cristobal, Panama; Boston, Mobile and Wilmington, USA; and Wellington, New Zealand.

Transas China to supply Universities

www.transas.com

Transas China has signed a contract with the Dalian Maritime University (DMU) to supply the school with three sets of TGS 4100 GMDSS simulators, with installation scheduled for completion in 2005. The simulator sets each comprise one instructor station plus sixteen trainee stations.

The company has also agreed a deal with Chongqing Jiaotong University, to supply Navi-Trainer Professional 4000 and TGS 4100 simulators.

The NTPRO 4000 simulator set to be installed consists of one instructor station and three bridges. Each bridge comprises Navi-Conning, ECDIS and Radar stations. The TGS 4100 simulator consists of one instructor plus four trainee networked stations and 16 Tutor SW.

Another contract involves supply of TGS 4100 networked stations and 14 TGS 4100 Tutor SW, to the Yantai Mariners School, situated in North China. The training system is the first of its kind the school has ever imported.

A new army of seafarers? - Students at Chongqing Jiaotong University

Atlas and Martek finish Cork VTS

www.atlas.de

Bremen-based Atlas Elektronik, in association with Irish representatives Martek of Dublin, has completed upgrading the Port of Cork's Vessel Traffic System (VTS) network.

The system includes a Management Information System (MIS) for overall management and traffic control as well as general administration. This will be used for collation and issuance of all port fees, as well as the administration of contracts covering leasing of real estate and warehouse facilities.

The MIS includes a statistics package for planning future port activities, listing of safety measures, and a tool for scheduling of rosters covering VTS staff, pilots and launch personnel.

It includes a real-time vessel database containing historical information on previous ship visits, while providing overviews of movements necessary for piloting and berthing arrangements.

Atlas Elektronic also built vessel traffic systems for the Irish ports of Rosslare, Shannon Estuary and Waterford. All of the systems apart from Rosslare can pick up AIS data and allow harbour masters and pilots to log on via laptop computers connected to mobile phones.

US ship sensors on buoys and rigs

US authorities have unveiled plans to put AIS receivers on oil rigs and weather buoys, sending data to a central computer, to monitor vessels at sea. It is considering using satellites, unmanned planes and commercial jets to monitor ships as far as 2000 nautical miles away.

The move would be an attempt to "move the border as far out as possible", according to US Coast Guard (USCG) official Rear Admiral Joseph Nimmich, and to allow for early detection of possible threats from the 7,000 - 8,000 foreign ships that dock in the country each year.

"Right after 9/11, we started realising that for us to be successful, we have to understand more about what goes on in the maritime world," he said.

A new maritime security strategy is currently under review at the White House, and Mr Nimmich believes it may be granted approval in "six to eight weeks". It is part of an overall security improvement scheme he is heading, dubbed 'Maritime Domain Awareness' by the USCG.

The project has already seen radio receivers being installed on privately owned oil rigs and government weather buoys, to receive Automatic Identification System (AIS) signals that identify vessels and their cargo. The coastguard can then examine the data against intelligence information to look for possible threats.

One of the major weaknesses of this system is that the oil platforms and buoys can only pick up signals a few hundred miles out to sea, so Mr Nimmich has expressed his desire to extend the coverage from the current 75 mile radius to one of 2000 nautical miles.

A 2000-mile reach would include vessels in the territorial waters of many other countries including Canada, Mexico, and parts of Central and South America, although the US has not said if its plans include monitoring vessels in other countries' territorial waters.

Some shipowners have raised concerns about possible problems with data protection.

New radar from JRC

www.jrc.co.jp

Japan Radio Company Ltd (JRC) has launched its JMA-9900 series marine radar system for larger (SOLAS) vessels.

Functions include sea and rain/snow clutter suppression, sensitivity adjustment, interference rejection, bearing and range measurement using a trackball, fixed/variable range markers and electronic bearing line, ARPA targets, and AIS information displays.

The radar has special software which can automatically control gain, tune, anti-sea-clutter and anti-rain-clutter for changing environmental conditions. There is also echo-image processing to provide stable target-tracking, which should reduce target loss and target swapping or transfer.

US seeks to improve Loran C

www.navcen.uscg.gov/loran/modernization.htm

The US Coastguard has embarked on a recapitalisation project for LORAN positioning services, to modernise LORAN positioning infrastructure in the US.

It has synchronised all LORAN transmitting stations to Universal Co-ordinated Time, improved timing stability, installed uninterruptible power supplies to transmitters and improved switching to reduce transmitter downtime to three seconds.

The US Department of Transportation found in a 2001 study that GPS was susceptible to both intentional and unintentional interference.

AMI Marine sets up Cyprus office

UK voyage data manufacturer AMI Marine has set up its first fully owned subsidiary office in Cyprus, staffed with two sales and service personnel.

AMI already has franchise offices in Singapore, South Korea and Houston, and plans to open an office in India.

It has sold about 100 VDRs and 5 S-VDRs to date, with customers including Saudi Oil company Vela, which bought 23 units; Louis Cruise Lines; and Hudong Shipyard in Shanghai.

AMI designs, manufacturers, installs and services its own equipment, and takes responsibility for mistakes. It does not use any sales and service agents who may not understand or care about the equipment. AMI handles training for its franchisees.

Managing director Mike Woods believes that shipowners will often get better service by going to a small VDR supplier such as AMI Marine than the maritime electronics giants, because it has lower overheads and is more focused on the specific task.

He makes the comparison between buying clothes off the shelf from a big company, or going to a bespoke tailor. "Bespoke tailors are not necessarily more expensive. People perceive they are more expensive but its not necessarily true."

Its simplified voyage data recorder price should not be more than $30,000, the company says, including the unit, capsule and installation.

It employs ten full time staff, including 4 service engineers and 2 research and development staff. Projects under development include making a handheld navigation unit, so seafarers can access the VDR data from anywhere onboard the ship.

AMI was originally established to put together interfaces for maritime electronics equipment, and the voyage data recorder services followed on from that.

Interfacing old shipboard equipment to voyage data recorders is not the easiest thing in the world. New technology has standard protocols, connectors and manuals easily available in electronic format; old technology can be custom built, with custom communications, no connectors, no manuals and a manufacturer long gone out of business. "Recording the information is easy, it is translating it that's the thing" says Mr Woods.

QinetiQ approves Kelvin Hughes VDR interface

www.kelvinhughes.com

Kelvin Hughes has announced approval from QinetiQ, the UK Government's nominated body for Type Approval of marine equipment, for a float-free interface to its MantaDigital Simplified Voyage Data Recorder (SVDR).

DNV approves Jotron's S-VDR

www.jotron.no

Jotron electronics has announced that its TRON S-VDR has type approval from DNV.

Jotron's S-VDR is built on the same platform that supports the Jotron EPIRB product suite, and is designed to enable more advanced voyage data recording capabilities.

The Final Recording Medium (FRM) within the unit has a Fast Flash Disk solution based on military and aerospace requirements for data security, and has a powerful Xenon strobe light for visual identification, powered by a seven-day battery once activated. The system operates on EPIRB-enabled GPS.

Common sense condition monitoring

Shipowners should take a common sense approach to condition monitoring to get the best value out of it. We interviewed expert Simon Forshaw from James Fisher MIMIC

CONDITION MONITORING, checking the condition of ship parts rather than just replacing them according to a plan, is growing in importance in shipping.

Many charterers are starting to ask shipowners if they have condition monitoring.

Shore side industries, including the oil and gas industries, have a lot of experience with condition monitoring and techniques are well developed. The shipping industry has been slow to catch on.

OCIMF asked for a preventative maintenance scheme, for shipowners to reach level four in its TMSA Tanker Management Self Assessment guide.

Now the leading class societies, including GL, DNV and LR, have started to recognise condition monitoring and are producing notation and services for it.

Know what's happening

The logic behind condition monitoring is very sound - you are much better off knowing if you have a developing problem with a steering motor and fixing it in time, than waiting until it fails completely, having to fit a new one and having the ship offhire while this happens.

Planned maintenance systems, replacing or maintaining parts according to a timetable, can waste money - because you don't know if the part actually needs to be maintained or replaced when the timetable tells you to maintain or replace it.

Conversely, if the part fails before the timetable told you to do maintenance or replacement, it will cost a lot of money and potentially put the ship offhire while the problem is resolved.

There is a lot to be said for having advance information if a part is going to fail, or if a problem is developing.

Simon Forshaw, general manager of James Fisher MIMIC Ltd, has several examples of shipowners who have saved large amounts of money through condition monitoring.

James Fisher MIMIC provides condition monitoring services for the UK's Royal Navy, and is part of maritime services group James Fisher.

On one vessel, vibration was spotted on a shaft alternator and the output was going down, leading to some concern.

Further analysis showed that a diode cover was loose which could be replaced for just £400 with no downtime (ship going out of service). The condition monitoring service cost £7500 for the first year.

On a sister ship the exact same fault occurred, with the diode cover actually coming loose and falling into the windings and shredding them, with a cost of £45,000 to supply a replacement.

In another project, the condition monitoring system detected a problem with a 15,000 dwt tanker's steering gear, by measuring its temperature and vibration. A small warning light on the bridge indicated an abnomaly. The ship sent a data file to MIMIC by e-mail, so MIMIC could look at the trend in more detail on shore.

"The prognosis was, its not a major problem, you do have some time. The shipping company monitored the issue more closely between the time the problem was identified and the repair; they ordered the spare parts and did the work at a mutually economically more viable more time - when they wanted to do it."

Doing maintenance according to running hours and a pre-set plan has given shipowners a framework by which they can be reasonably confident of their vessels ability to trade when they need it. This strategy can be costly as maintenance is often undertaken when equipment is operating fine.

Because the problem was caught in time, the company did not have to install a new motor (costing £15,000 plus offhire plus potential safety issues if it failed at a critical time); they just replaced a bearing and some seals and had no offhire.

Without condition monitoring, the ship would have not known there was a problem until the motor failed completely, leading to the ship being taken offhire.

"Shipowners follow a planned maintenance system - that's fine - but every now and again - they have a particular issue that bites them in the bottom, and they have to do unplanned maintenance. This cost a lot of money."

Techniques and equipment

A typical list of equipment which can have condition monitoring, Mr Forshaw suggests, would include the steering gear motor, tail shaft, engine, cargo pumps and turbo charger.

Vibration monitoring is suitable for high-speed rotation equipment.

On pumps, monitoring suction and discharge pressures is very helpful - you can quickly spot deterioration in the cargo pump. Also monitoring the motor current is helpful.

Monitoring oil and lube oil condition monitoring has been going on for many years, for items such as gear boxes, with many lube oil companies offering a service free of charge to examine samples of lube oil to check for increasing bromine or ferrous content, which could indicate a problem with a bearing.

The samples are analysed off the ship in a laboratory, which means there is a considerable time delay between taking the sample and receiving the result, by which time any failure the condition monitoring might indicate could have already occurred.

Another technique is monitoring for high frequency sounds. High-pressure air leaking from a compressor makes a high frequency sound, which cannot be heard with a human ear. An ultrasonic detector can hear it.

Thermographic cameras, at around £20,000 each, are maybe too expensive to carry onboard ships all the time. They are good at spotting particular problems such as electrical contacts being too hot. Shipowners might choose to have a specialist with a thermographic camera take a periodic survey of the ship.

Cheaper devices are available which can take spot temperatures of parts of the ship, which could give an easy indication of a possible problem.

Many condition monitoring checks cost absolutely nothing at all and have been done for many years - including checking for leaking oil, checking connections are airtight, checking if things are hot. "These are equally valid condition monitoring techniques," Mr Forshaw says.

Handheld or online?

Shipowners have the option of installing sensors continuously on items of equipment connected to a computer and warning system (called online monitoring), or just going around the ship once a month with a handheld reader.

Obviously an online system is much more expensive, and also requires that if an alarm or warning does ever go on, whoever is manning the bridge or engine room at that time will take attention and know how to deal with it.

Mr Forshaw believes that handheld equipment is appropriate for most shipboard applications. Seafarers can take readings of temperature and vibration for critical equipment.

Criticality

Mr Forshaw advocates a policy of determining the criticality of items onboard the ship, so you can then determine how much to reasonably spend on condition monitoring equipment and services.

For example, a failed turbo charger won't stop the ship from moving but will reduce the speed of the ship and increase fuel consumption. Many shipowners would consider the turbocharger a critical part of the ship.

An example of a highly critical piece of equipment is the refrigeration plant on an LNG ship. "You would monitor that to death," he says. By contrast, the refrigeration units in box containers are not so critical - the most that can happen if one fails is the damage of one container's cargo.

"Its all about criticality," he said. "How critical is a piece of equipment? If it fails, how much does it cost you?"

"In Royal Navy terms, if it impacts on the availability of the ship to fight a war, its critical. In commercial shipping, if it's stopping the shipowner from generating revenue, that's a significant problem."

"Its very easy to go overboard on what you monitor," he says. "Its about bringing it down to the practical implementation - what not to bother with - what to bother with."

"Equipment has got to be monitored in the right way," he says. "Some equipment you will run to failure."

There have been examples of shipping companies who have gone too far identifying potential problems, in Mr Forshaw's view.

"The Royal Navy have spent millions and millions of pounds trying to get things right and identifying every single problem that you might possibly have on a pump. If this pump fails what happens? It might cause a spark, it might blow up the tank etc - you can theorise to death."

"Our approach is a lot more practical - it includes a criticality analysis - first of all an identification of all of the equipment onboard the vessel - we then categorise that into medium low and high risk in terms of failure - that's a relatively swift process."

"People may think they need monitoring more than they actually do," he says.

"We go through a workshop process, an economic sanity check."

"We sit with the customer and say - look - you've made these decisions not us. But are you sure that you're going to be able to resource - sending a man onboard the ship - around the ship - every 4 hours - to measure the vibration of a pump - which actually doesn't need vibration monitoring?"

Similarly, many shipping companies have discussed systems which automatically e-mail a superintendent on shore if there is a potential problem. "Is it worth it economically?" Mr Forshaw asks. "Maybe it is - for certain applications."

"That's where we can add the value - we've got lots of experience with the Royal Navy - practical experience on the James Fisher fleet of vessels."

Simplicity

Keeping systems simple is of course a big concern - seafarers are already completely stretched and have no time to learn new techniques or how to analyse complex data.

James Fisher's approach, developed in its work with the UK Royal Navy, is to put together condition monitoring systems which only cover critical items and then have a simple system of warning lights (indicating 'e-mail this data file back to shore for further checks') if something looks amiss.

Installing condition monitoring systems does need to be seen as more than just implementing a new piece of kit, because it will lead to changes in the way shipowners manage their maintenance.

"We say - lets not get over exasperated about being able to interpret what these things are telling you on the ship," he says. "Lets take it off the ship. We'll provide you with that service."

MIMIC has developed its own software products to manage the data from condition monitoring, with a stress on making it easy to use - instead of being besieged by information they don't understand, the seafarers just have warning lights for potential concerns which they can then look into further.

DS

Website:
James Fisher MIMIC:
www.james-fisher.co.uk/mimic/index.php

Ireland's Maritime College

Euro 51m has been invested into building a seafarer training college in Cork, Ireland, networking together the latest cargo handling, engine and bridge simulators to simulate the entire ship at once. Only the seafarers aren't simulated. Will this encourage more people to take up a seafaring career?

THE SMALL fishing village of Ringaskiddy, County Cork, in the south west of Ireland, was once a part of English defences against the threat of Napoleon, and a major UK navy training base until 1921.

Today the area has been transformed into a modern deepwater ferry port with the aid of EU and Irish government funding, and is now continuing the legacy of maritime education with the newly built, state of the art National Maritime College of Ireland (NMCI), which has been described as the most advanced seafarer training facility in Europe.

Opening less than one year ago, the college is the result of a Euro 51 million project which created the first third level college in the country to be financed, built and operated by a private company, and is used in the education of merchant marine students from Cork Institute of Technology as well as for the non-military training of Irish naval cadets.

Commander Tom Tuohy of the Irish Navy, associate head of NMCI, describes the 14,000 square metre facility as "a one-stop-shop for the provision of professional maritime training in Ireland".

The college currently has about 400 enrolled students from the naval and merchant sectors, with a capacity for 750.

A 270° full bridge simulator - training in virtual reality

While the majority of the present students are from Ireland, Cmdr Tuohy expects that NMCI will attract a large number of international students in the future as the college becomes better established, and says that foreign naval services have also expressed interest in the training facilities available.

The college expects its website, currently under development, to be up and running sometime around November, and believe that this will give them much greater visibility with prospective international students.

Linkages have already been established with international educational institutions, like Memorial University in the UK, BCIT in Canada, MIWB in the Netherlands, and Kalmar in Sweden, and it is hoped that this will help to cultivate overseas awareness of the facilities.

NMCI has also initiated research projects in water ballast management and in telemedicine to take advantage of their high-tech equipment, and this represents another opportunity to make a contribution to innovation in the maritime sector. With the latest simulator technology and the most advanced facilities available, the college hopes to produce a new generation of highly trained international seafarers with the skills to make the very best of their career in the shipping industry.

Investment

One of the benefits of private investment has been the availability of a greater amount of capital than would have been possible with public funds, but there are other advantages too.

"The agreements that are in place for the operation of the college include all of the maintenance and upgrading of the training equipment for the students", says Donal Burke, head of the NMCI.

"We have an agreement in place that lasts for 25 years, and over this time the operating company is responsible for ensuring that all of the training facilities are available during core hours, and paying for any repairs that are necessary."

The company faces penalties for time lost due to the unavailability of any part of the facility, and so will be expected to complete any necessary work as quickly as possible.

The college believes that this will ensure that the best equipment is always available to the students.

"The pressure of upgrades is gone with this system" says senior lecturer Daire Brunicardi. "It's cost neutral for the college and means that the students will have the latest technology."

Simulators

The financial flexibility afforded by this project has allowed the NMCI to install some of the most advanced equipment available in the field of seafarer training.

Some of the most impressive examples of this are two enormous ship bridge simulators with 270° and 360° fields of view, designed to provide an incredibly realistic shipboard experience for the student.

The screens display accurate visual representations of a number of different ports around the world to make the training environment as close to reality as possible, as well as including a complete view of the actual geographical features of the surrounding landscape.

The college's sea survival training facility, with a five-metre deep pool, diving tank, hoist, life raft and helicopter underwater evacuation trainer.

Each simulator incorporates, among others things, steering, radar, AIS, electronic charting and GMDSS communications features, as well as an infra-red camera which allows instructors to monitor and record the students' performance from outside.

Student and teacher can then analyse the decisions and actions taken during the exercises they undertook in the simulator.

"It has proven to be an invaluable training tool", says Cmdr Tuohy.

The simulators, supplied by Norwegian company Kongsberg, are designed to replicate every type of sea and weather condition, and to allow the student to learn to deal with almost every type of emergency situation, like an engine shutdown or man overboard.

Kongsberg will supply yearly software upgrades for the length of the 25 year contract, the longest single deal the company has been involved in, and will be responsible for making sure that the simulator continues to display realistic views of the ports in training.

The system allows for the selection of 32 different vessel types, including merchant, liner, ferry, naval and fishing, providing an extensive range of training experiences.

The college also has three 150° bridge simulators and a 12-station NARAS simulator suite, used for training in a number of different functions, such as VTS and SAR OSC.

One of the most useful aspects of all of these simulators is the fact that they can all be linked and integrated, so that a large group of students operating on different machines can all be part of the same simulated exercise.

"This is the first time that Kongsberg have created a series of simulators with this level of integration", remarked Cmdr Tuohy. "Different aspects of marine training are now being integrated."

This means that people working on a range of different simulators will be visually represented on the screens of each of the bridge simulators, so the students can learn how to react in an environment where other real people are making real time decisions.

The college also has simulators for GMDSS training and extensive suites of simulated engine room trainers, all linked into the same system.

The possibility of getting large numbers of students involved and interacting with each other in a simulated, high-tech maritime environment should allow for the highest possible level of training and preparation for the next generation of seafarers.

Liquid cargo handling

One of the most advanced systems available to the students is the Liquid Cargo Handling Damage Control simulator, a new PC based simulator which Cmdr Tuohy claims is "the only one of its kind in the world."

At its core is Lodic's Shipload loading computer software, which utilises full 3D-models to provide flexibility in creating realistic damage scenarios.

The software connects the instructor and students through a LAN to the same vessel.

Firstly the instructor defines the dam-

age scenario through his interface; he begins the simulation and can observe in real-time.

The students must then respond to the situation; water-ballast, pumps (portable and fixed), sub-division decisions, fire-fighting teams, smoke-diving teams, and fire suppression systems are all available for the students to utilise.

Instructors can introduce new problems at any time and the system logs all actions taken to allow for review and evaluation after tthe exercise, including the possibility of complete playback.

darkness, high waves, driving rain and hurricane-like winds, to help students to prepare for the realities of an emergency rescue situation at sea in the most difficult conditions.

"Other places in Europe would have survival training pools, but there are not many incorporating all of these facilities", noted Mr Burke.

There is also an outside jetty with a free-fall lifeboat, and a fire-fighting and damage control reconstruction unit that is used for a full range of fire fighting and damage control courses.

Seafarers don't need a full bridge simulator to learn about ship navigation

The damage scenarios currently available to the instructors include grounding/beaching and the re-floating of a vessel after grounding, stabilization of a damaged vessel, fire control and general crisis management.

The system provides damage control boards to simulate ship-board equivalents, and includes advanced calculation routines to ensure realistic vessel reactions.

The instructor can initiate further emergencies from his control station and force the students into tough decisions to check their progress and their ability to handle the pressure of multiple emergencies.

Any vessel (or floating structure) can be modelled and installed into the system, to allow specific ship training if required. The vessels currently implemented at the NMCI are a patrol vessel (Navy) and a Ro/PAX ferry.

The simulators can also be separated into different functional teams, having a separate captain, officers, engineers and so on, so that the students have to react to the actions of their colleagues as well as concentrating on their own work.

The college believes that this creates one of the world's most advanced training experiences currently available to prospective seafarers.

Survival training

NMCI also has non-virtual training simulators, like Ireland's only purpose built sea survival training facility, with a five-metre deep pool, diving tank, hoist, life raft and helicopter underwater evacuation trainer.

Instructors can use the equipment to create an environment that replicates total

All of these facilities are operated with safety as the primary concern, and none of the simulators can be operated unless under the complete control of an instructor.

Courses

There are a number of different maritime training courses currently available at NMCI.

They include a Bachelor of Engineering in Marine and Plant Engineering degree, which requires a total of three years of study at the college, 9 months of sea service as a cadet, followed by a further 3 months back at NMCI. The graduate obtains a Bachelor of Engineering and Officer of the Watch (OOW) Engineering qualification.

There is also a Bachelor of Science in Nautical Science degree (one year NMCI, 15 months sea service, one year NMCI), where the graduate obtains a Bachelor of Science and OOW Deck qualification, and a Certificate in Navigational Studies in Seamanship (8 weeks NMCI, 9 months sea service, 1/4 month NMCI, 1 year sea service, 1 year NMCI), where the student will receive an OOW Deck qualification upon completion.

They offer further certificates of competency in engineering (OOW Engineering, Second Engineer Officer, Chief Engineer Officer) and navigation (OOW Deck, Chief Mate/ Master), and a wide range of modular courses. The modular courses are available to seafarers who require training courses in specific areas like Medical First Aid, Proficiency in survival craft, Shipboard security officer, NARAS-O and NARAS-M, and Fire courses. DS

Transas building blocks

Maritime IT company Transas is expanding its global offices, building electronic charts and developing new simulator products. We visited their global headquarters in Cork, Ireland

FROM THEIR BEGINNINGS with a sole office in what was then Leningrad in the old USSR, Russian marine technology company Transas have moved to a system of worldwide centres of excellence surrounding a central international administrative office based in Ireland.

The company is now approaching the end of its fifteenth year in operation since being formed in 1990. In that time Andrey Belentiev, managing director of Transas, has seen a lot of changes in the maritime sector, and envisages many more.

Navigation equipment

"One of the first systems in maritime technology that is still expanding is electronic charting", he says, mentioning how the technology has evolved from the Chart Plotter to the fully approved ECDIS system, including network version, radar overlay and integration with other bridge equipment during last fifteen years.

"We think there are going to be further changes in the ECDIS market. There is a big demand to move completely to ECDIS for some flags by 2007."

While electronic charts have remained a part of Transas' core business, their focus now is on expanding the provision of complete onboard systems, incorporating the full range of bridge functions like INS (Integrated Navigation System).

They feel that their system of having a network of small global offices can help them to provide a better service to their customers in this regard.

Andrey Belentiev, managing director, Transas, looks to the future

Network

The company is organised into what they call the "Transas Global Distribution Network", a network of offices that stretches across 120 countries, where they say they have placed a great emphasis on education and training to be able to provide a high level of support to their customers.

This type of set-up does, however, raise questions of how to maintain service standards across such a range of culturally diverse operations.

"We want to have a group of offices where we can maintain the same standards in every one", says Mr Belentiev.

"We want to have all of the tasks done by the different offices covered by one single group certification" adds Danny O'Donoghue, the company's IT and technical manager. "With one corporate environment we should have one group certification."

The future expansion of Transas itself will probably see growth in their existing international centres.

"We have had our hub structure since 1992, with all of the hubs sharing common resources", says Mr O'Donoghue.

"It's possible that we could open a few more hubs, but mostly we'll be looking for the existing hubs to expand", he explains. "We want to use the skills of the people we've got."

"We may set up new hubs based around projects as they happen" adds Mr O'Donoghue. "So it would be quite fluid in that respect."

Mr Belentiev sees most new growth happening in Asia and South America, and in smaller vessels.

"Our Dubai office is now really expanding", he says. "There has been a lot of growth in demand in that area recently."

The commercial and leisure market is another area where there will be demand for thousands of systems in the near future." Transas hope that their structure will allow them to take advantage of these changes as they happen.

What customers want

Mr Belentiev says that Transas aims to "look in the eyes of the customer" to try and give them the specific kind of service they needed.

"We try to work with the cultural differences that exist in different markets", continues Mr O'Donoghue. "Most of the people who work in the international offices are local to that area."

The amount of customisation of the onboard systems that will be installed is, to an extent, limited.

"We can customise the systems, but costs come into play", says Mr Belentiev. "Also, with onboard systems, the regulations are not too flexible, limiting the scope for customisation."

"We analyse all of the demands of our customers and then try to apply the features that are most demanded", he says.

"Customisation is driven by customer systems", adds Mr O'Donoghue. "The bigger systems are designed around the existing systems, and as the software is all standard, PC-based, there are no integration problems."

"The customer is also a big part of our R&D process", he continues. "When we see the customers' use of the systems it helps us to see how to improve them."

Other products, like Vessel Traffic Systems (VTS), allow greater opportunities for customisation, and also for growth.

"VTS and AIS, both onboard and ship based, is a big area for improvement", says Mr Belentiev. "There are many varied factors involved, like safety, terrorism and the environment. But one day you will be able to press one button and be able to see all of the ships in the world on the screen"

Transas global headquarters in Cork, Ireland

Training

Simulators are one area where advances in technology could lead to exciting new developments. It's an area that Transas think will become even more important in the future.

"Shipboard crews have shrunk from around 50 to around 15 over the last 30 years", says Mr Belentiev. "Now the crew need to have all of the skills used on board. They are now ship operators."

This widening of the skills needed by ships' crew leads the way for more advanced training, and new and improved simulators.

"Integrating training simulators will be one way to offer better training", he says. "We could integrate simulators in, for example, Sweden, the UK and Russia through the internet, with an instructor in another country."

"As the simulators would all have the core program installed, only changes in the training situation data would have to be transferred. The system would then interpret and display that data" he says. "The technology is there, and it is almost ready to be launched."

"It could be possible to have a world wide training network - that's a vision of mine", adds Mr Belentiev. "The goal is to have complete solutions for the industry, with all systems communicating and integrated."

"Maybe in the future we will see simulators of ships before they have finished construction", he continues. "It could be possible for seafarers to train on an actual, particular ship virtually, before it is even finished." DS

Keeping risk constant

The risk homeostasis theory argues that navigators will do whatever they need to do to keep risk to what they perceive to be a steady manageable level, which is different to doing whatever they can to reduce risk. Is there a lesson there? Steve Harding thinks so

IN ESSENCE, risk homeostasis theory argues that in any safety system there is a control mechanism analogous to the thermal homeostatic system in warm-blooded animals that tends to keep risk constant, essentially independent of changes in the system.

In other words, irrespective of the investment made in safety, the system will always seek to re-establish its 'natural' risk level; the problem re-appears, potentially in a far nastier form. Better the devil you know, as they say.

An example from the maritime field, reported in the September issue of *Digital Ship*, illustrates this point.

On 29 September 2004, while on passage from Wellington to Picton and using the ECDIS to operate in automatic track keeping mode, as is common practice where ECDIS is fitted, the ro-ro ferry *Aratere* lost mode awareness and came perilously close to a high-speed collision with nearby rocks.

The New Zealand Maritime Safety Authority's (NZMSA) incident report suggests a key causal factor leading to the incident was the loss of GPS data to the Integrated Bridge System (IBS) due to the shadowing effect of the coastline; the IBS fully complied with IMO standards.

Important as this technical failure was, and it will be referred to later, this should not detract from the wider issues raised by the incident, notably, how far reality is from the fantasy world of the soirees that are now such an essential part of maritime regulatory decision-making.

As NZMSA discovered, no doubt to its horror (as they were culpable), the electronic charts used on *Aratere* had not been corrected for navigational accuracy for nearly two years as the ECDIS CD-ROM drive was defective.

This had been reported, but the owners took the view that repair was an unnecessary cost given that the *Aratere* was, supposedly, an 'official paper based chart vessel'.

Notwithstanding this fact, paper charts were not used, the ship continuing to rely exclusively on ECDIS to 'drive' its IBS. Risk homeostasis had taken hold.

Once upon a time, the OOW's mind was fully occupied, the bridge team working as a well-oiled machine as it manually fixed positions and plotted on paper or reflection plotter. Consequently, the wheelhouse was sacrosanct; there was good reason for the locks and large warning signs on its doors. Concentration could not be disturbed. To do so increased the probability of error and, with that, the risk of catastrophic failure.

With IBS, the OOWs on the *Aratere* had no such worries. Relieved of the burden of using their minds, they could apply their talents to other, more fruitful navigation related matters.

How? As is the case for most modern ships, I doubt you can see much through the windows of the *Aratere*, not while you're sitting in one of those soporific chairs that are de rigour in the wheelhouse.

And you definitely won't hear a thing from outside, not above the din of the thousand and one different alarms that keep going off; all of which sound the same.

So, what is the OOW to do? Listen to music; let the kids run amok; hold meetings with the company's safety superintendent, to discuss anything but safety?

People tend to find a level of risk they are comfortable with, no matter what safety procedures and systems are available

You name it and the OOWs on the *Aratere* were doing it; and that too, no doubt.

The sanctity of the wheelhouse was lost. Everyone onboard had started taking liberties, i.e. risks they'd never countenance before, as was bound to happen because they are naturally inclined to do so as a function of risk homeostasis.

Whatever, even if the *Aratere's* wheelhouse was Piccadilly Circus, this should not have materially mattered: the IBS was in full control.

Were the truth known by those on the *Aratere*, perhaps their risk-taking behaviour may have been somewhat different.

To the great credit of the NZMSA, it had the courage to put the *Aratere's* ECDIS/IBS supplier on the rack; unlike other accident investigation bureaus who shall remain nameless, and extracted the following from the spokesperson of the supplier:

"In general, automatic steering is more effective than manual due to the fact that the computer is able to react faster to cross track errors than a human being."

"But there are however a number of things that may cause an automatic steering failure (jumps in GPS positions, Water log failures, etc.)."

Meaning:

"When sailing on automatic track steering through difficult passages like the Tory channel entrance it is imperative that the navigation officer(s) stay 100% alert to take over using manual steering if anything happens to the automatic steering."

In other words, the supplier does not have absolute faith in its technology and, therefore, sees it as the responsibility of the OOWs to devote all their energies to its continuous monitoring, to intervene manually when the inevitable failure occurs.

But these guys have been reduced to numpties; because the dominant ideology is that technology is always superior to that vermin of the seas, the seafarer, therefore owners must be forced to purchase ever more technology, through IMO mandate, to resolve the safety paradox.

Is it any wonder then that, on 4 October 2004, the Marlborough District Council harbourmaster threw his rattle out of the pram by issuing the direction:

"The use of automated navigation systems that act on their own (for example, linked to GPS or DGPS receivers), without immediate preceding direction of the Master or Officer of the Watch is prohibited."

In New Zealand at least, the technology King has been exposed as having no clothes. I rather fancy others will join suit.

Fortunately, notwithstanding that New Zealand is a long way from London, there is some hope that IMO has taken heed and, in forming opinion, is showing signs that it is prepared to listen to stakeholders other than those with a vested interest in the corporate maritime technology supply sector.

A fine mess

As a child, long before we had shameless product placement masquerading as children's TV, I loved watching Laurel and Hardy.

The plot never varied. Stan and Ollie encounter a problem. With all good intent they try to fix it. Alas, the more they try to improve things, the greater the 'fine mess' they get into. Oh did I laugh, particularly at 'Toads in the Hole'!

Not so funny when it happens to you. And not funny at all if the problem involves large passenger ships that, notwithstanding IMO's ladling of technology for the ostensive purpose of improving safety, appear increasingly prone to getting into a 'fine mess'.

Such is the seriousness of the situation, at least one maritime authority has gone against the flow and banned the use of the very technologies IMO places so much faith in. The use of autopilots is now banned in a New Zealand harbour. What's going on?

A fundamental premise of most, if not all, IMO policy in recent years is that it is possible to reduce the rate and severity of accidents by improving the design of machines, and increasing the skill of their human operators.

Perhaps this explains why IMO's Maritime Safety Committee, at least in the eyes of some observers, has been reduced to shameless product placement masquerading as the 'new' safety panacea, or an interminable conclave that seeks, but never achieves, a re-write of 'War and Peace' - otherwise known as the STW Code. This policy has garnered unquestioning support from certain quarters, particularly, but not exclusively, the corporate maritime technology suppliers.

It is argued that through technology it is possible for the officer of the watch (OOW) to have a better appreciation of both the position of the ship and the surrounding traffic:

"This is particularly true in congested waters such as the Singapore Strait, Hong Kong and the English Channel. The installation and usage of Integrated Bridge Systems, AIS and ECDIS is the only sensible way to go as it enables officers to get a better understanding of the situation and results in reduced stress on the bridge and improved safety," wrote Nils Nordh, executive vice president marine operations and corporate new buildings with Star Cruises.

Conversely there are Luddites, like me, who are less sanguine, arguing that seeking efficiency improvements through technology could have very serious (but hardly unforeseen; it has been said for many years) consequences for safety, arguing that when designed properly and used by trained personnel, such automation can be helpful in improving operational efficiency and safety. However, when designed poorly or misused by under-trained or untrained personnel, automated equipment can be a contributing cause to accidents.

Safety assessment

At the last session of the Organization's Safety of Navigation sub-committee it was decided to defer imposing ECDIS on non-passenger ships pending completion of a formal safety assessment (FSA); better late than never given the Secretary-General's commitment in 1999 to use FSA to inform all rule making from that date.

Providing this is completed with the thoroughness and integrity of previous studies, such as the international collaborative FSA of bulk carriers, and has a sufficiently wide scope to analyse the reality of technology implementation onboard ships, in light of theories such as risk homeostasis for example, it is possible future regulatory frameworks will manage to address the issues identified over a decade ago.

Frankly, the situation could hardly be worse, though it would be unfair to compare past attempts by the authorities to fix a problem with the antics of Stan and Ollie; they were geniuses who knew exactly how to develop a situation to optimum comic effect - the maritime authorities' comical antics are quite unintentional. DS

Steve Harding served as an electrotechnical officer with Shell Tankers for 7 years, and subsequently worked as specialist investigator for the UK Radiocommunication Agency and specialist in satellite navigation, ship tracking systems and GMDSS with the UK Maritime and Coastguard Agency. He has set up his own consultancy, SUVAN Marine, and can be contacted on steve@3gmarine.co.uk

Familiarisation with the bridge

Many navigation problems are caused by seafarers not knowing how to use the equipment properly. With a lot of bridge equipment being different and seafarers rapidly changing ship, how can shipowners sort this problem out? By Dr Andy Norris

IMO'S International Safety Management Code (ISM) makes it clear that personnel working on assignments related to safety and protection of the environment need to be given proper familiarization with their duties.

For bridge operations, this has been openly interpreted as saying that officers of the watch should be familiar with the operation and use of all navigation equipment on the bridge before taking charge of a watch.

In the best shipping companies this requirement is properly documented within their procedures and is rigorously observed in practice.

Unfortunately, at many other companies there is still the belief that because their officers hold relevant certificates of competence, bridge familiarization can be limited to a general reference within the ship's ISM documentation and no thought at all is given as to how it should happen in practice.

Maybe there was once a time when a fully certified OOW could transfer from ship to ship and use the bridge equipment to its fullest extent without the need for any real help. Even complex equipment, such as radar, used to have relatively common controls from manufacturer to manufacturer.

Before the advent of powerful processor technology, familiarization was mainly concerned with determining where the relatively few knobs and switches were on each item of equipment.

Equipment complexity

The advent of affordable and powerful processors, high resolution displays and an irresistible urge to add many 'bells and whistles' has changed the operation of virtually all bridge equipment over the last 20 years or so.

The concept of manufacturers using common control philosophies and layouts, which would be welcomed by many users, is not at all evident on most bridge equipment.

Methods of accessing and controlling menus differ from manufacturer to manufacturer and even across the equipment range of a single manufacturer. Integrated bridges perhaps cause the biggest problem for familiarization.

Although good training is given to staff on a new IBS installation through comprehensive classroom and simulator training, subsequently joining staff are often expected to learn 'by cascade'. That is, the existing staff instruct the new joiner 'on the job'.

Experience has shown that this type of instruction tends to end up, after about a year, with OOWs who can only use the bridge as a collection of individual instruments. Its integrated features, which can be of great benefit to safety and reducing fatigue, are forgotten, lost in the numerous volumes of the manufacturer's manuals.

Lower down the complexity scale, the different methods of operation of electronic chart equipment have made it notoriously difficult for users to migrate from one equipment brand to another. Modern radar displays fall not far behind.

Even comparatively simple equipment like an AIS MKD can sometimes baffle users with, for instance, how to enter and check static and voyage related data. This has caused numerous problems of rogue information being broadcast over AIS. The correct operation of GMDSS and communications equipment can sometimes be equally baffling.

Ship bridge systems - how should shipping companies make sure their officers are familiar with them when they come onboard?

Manufacturers' user manuals are often not much help. They can suffer from being too detailed, making them formidable to access and difficult to find the answer to 'how do I do..' type questions.

They are also written by technical authors who sometimes do not differentiate between the needs and vocabulary of the installer and those of the user.

The familiarization process

Bridge staff learn how to plan and execute passages from the training they receive during the certification process. On newly joining a ship, and before using any equipment, they need only to familiarise themselves with the bridge operating procedures and how to operate each piece of equipment.

The question is - how should this familiarization be done?

Shipping companies need to think about how they cover the more general bridge operating procedures. For specific equipment, familiarization training material is best supplied by the manufacturer.

Although this could be in written form, an ideal would be to have self-training modes of operation on the equipment itself or be available as computer based training modules run on a suitable bridge-based PC.

The designed duration of the familiarization training for a particular item of equipment needs to be as short as possible, but should cover all its basic operating functions - say, 10 minutes for a radar, 15 minutes for an ECDIS and 5 minutes each for items such as GNSS, AIS, and GMDSS equipment. A full Integrated Bridge System will probably need an hour or so.

Items to be included within familiarization training are perhaps ideally specified by IMO; even the order of presentation could be envisaged to be standardised to make the data easier to assimilate by the user because of the familiarity of the format.

IMO situation

There has been increasing interest in improving bridge equipment familiarization training within IMO, both within the Standards of Training and Watchkeeping Subcommittee (STW) and the Navigation Subcommittee (NAV).

The recently released IMO Model Training Course 1.32 (Operational Use of Integrated Bridge Systems including Integrated Navigation Systems) contains advice to new users of a specific system as to what particular aspects they should be familiar with before using the equipment.

An appendix to this Course encourages manufacturers to supply suitable familiarization training material and supplies a guide as to what such training should include.

The appendix suggests various ways that the training can be undertaken: Computer based training on (or off) the vessel; training mode on the fitted equipment; training video supported by self-training manual; stand-alone self training manual; instruction manual to give guidance to experienced users on how to familiarize new users; shore-based training.

At the meeting of NAV51 in June 2005 the Correspondence Group looking at a future revision of the performance standards for INS and IBS was asked to consider the requirements for familiarization and include them as part of the draft revised equipment standards.

This is an important advance - it allows training issues to affect the design requirements of the equipment. It will also make the provision of familiarization material obligatory. All this is much appreciated by the organizations that reflect the interests of end users.

The future

It is to be expected that other new IMO Model Courses will embody familiarization guidance, where relevant. Also, new and revised equipment performance standards may increasingly make the provision of guidance material mandatory.

This may provoke a stronger lobby from end users for the adoption of common methods of operation. It would obviously reduce time and effort spent on familiarization. For a number of reasons manufacturers would not want to see such a rigid requirement: it would stifle the development of better ways of doing things and would also limit market choice, perhaps to the detriment of the user.

However, as ease of familiarization gets higher up the agenda there are a number of things that could happen.

One is that manufacturers may become better at providing equipment interfaces that are so intuitive that familiarization becomes inherently simplified. Another is that IMO could closely define a selectable mode of operation that had to be included on equipment for optional use.

This, for instance, could require certain standard controls, a specific menu structure and a common screen layout. Other optional modes of operation would be permitted that would allow manufacturers to remain innovative and give access to non-obligatory functions.

This perhaps gives the best of both worlds, with the user always able to revert to the 'IMO Mode of Operation'. In particular, pilots, who experience familiarization issues on a daily basis, would embrace this potential development.

It will be certainly interesting to see what actually happens to the user interface over the next decade, now that familiarization is becoming more centre stage. DS

Dr Andy Norris has been well-known in the maritime navigation industry for a number of years. He has spent much of his time managing high-tech navigation companies but now he is working on broader issues within the navigational world, providing both technical and business consultancy to the industry, governmental bodies and maritime organizations. Email: apnorris@globalnet.co.uk

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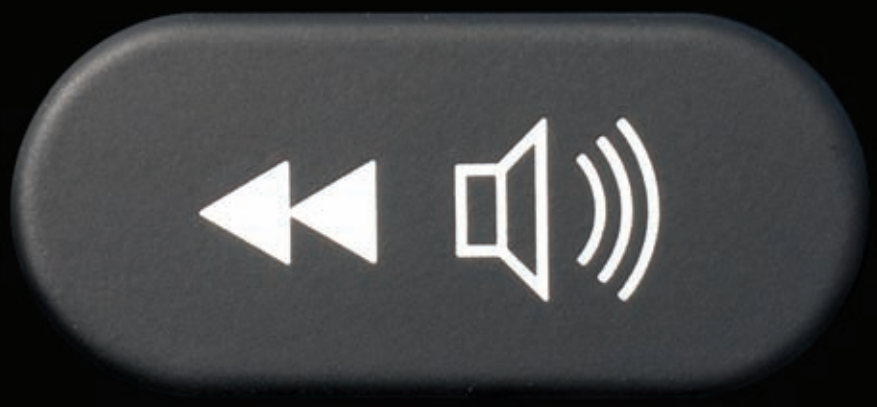

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