University-National Oceanographic Laboratory System

Research Vessel Operators Committee

NEWSLETTER

CONTENTS

Editor's Note

This is the final issue of the newsletter this year. I apologize for it being so late but Paul and I have been struggling with the agenda for the 1999 RVOC meeting and we thought it best to hold off publishing this issue until we had something resembling a final agenda.

By now you should have all received an information package on the meeting from Tim Askew. If not, drop one of us (Tim, taskew@hboi.edu, Paul,pwl@ldeo.columbia.edu, or me srabalais@lumcon.edu) an e-mail and we'll make sure you get what you need for the meeting.

See you in Fort Pierce,
Steve Rabalais

From the Chair

Dear RVOC'ers:

As always this time of year is busy with ship's schedules being finalized, proposals coming due, and annual meetings being held. It is worth pointing out the need for information in support of some planning efforts:

-A Winch And Wire Symposium is planned for later this year. Currently it looks like it will be scheduled around the beginning of December. Originally this meeting's location was planned for Arlington, VA, however it now appears there will be a change of location and it will be held in New Orleans to somewhat overlap with the Workboat Show. In conjunction with this symposium Jack Bash had sent out a questionnaire on your winch, wire, and over the side handling capability. Just a reminder we need to get this questionnaire completed and in.

-Joe Coburn of WHOI has agreed to prepare an inventory for the NSF of portable vans/labs currently in use at the various institutions. As part of this inventory he sent out a questionnaire on this. Our goal is to have this completed for the RVOC meeting. Areas that will be addressed as part of this inventory include-

-Are these portable lab/vans Coast Guard compliant?

-Establishment of standards that our portable van/labs should comply with?

-Begin to establish a schedule for replacement or upgrade of these units

We are firming up our plans for the 1999 RVOC Meeting hosted by Harbor Branch Oceanographic Institution from 2-4 November. At this point you should all have received a packet from Tim Askew with information on accommodations and the social activities that are

planned. I encourage you to get your reservations made and respond to Tim's questionnaire.

A draft of the agenda is included in this Newsletter. Any comments, items for Special Reports, or the Round Table items should be forwarded to Steve and I.

Finally, I would note that Don Heinrichs the Head of OCFS at the NSF will be retiring at the end of this year. I know I speak for everyone when I extend our congratulations and best wishes to him in his future endeavors.

Best Regards-

Paul Ljunggren

NSF Training Programs Results

In response to the Fleet Review Committee's recommendation to improve quality control in UNOLS ship operations, NSF/OCE asked operators to submit addenda for crew training to their current Ship Operations grants. Following is a list of the training programs that were funded.

TRAINING	# TRAINEES	MEET STCW*
ABS/ISM	2+	
AC/DC DRIVES	1	
ARPA RADAR	23	**23**
AUDIT (Int)	6	
AUDIT (lead)	1	
BASIC SAFETY STCW	143+	**143+**
BRIDGE RES MGMT	30	**30**
DC MOTOR DRIVES	2	
DETROIT DIESEL	2	
DYNAMIC POSITIONING	3	
ELECTRICAL	2	
ELECTONIC ADV	8	
EMD ENGINE	9	
EMD TECHNICAL	1	
F/F ADV	64	**64**
F/F BASIC	45	**45**
FIRST AID	2	**2**
FIRST AID 2	5	**5**
FIRST RESPONSE	9	**9**
GMDSS	22	**22**
ISO 9000	2	
MEDICAL	26	**26**
MEDICAL SPECIAL	2	
6 SIGMA	6	
PRG LOGIC CTR	2	
WIRE/WINCH	3	
SOFTWARE TRNG TAPES	3	
PREVENT. MAINT SFTWR	2	
LEADERSHIP	1	
GENERATOR	1	
	428	**369**

The following UNOLS institutions received funds from this program: U. of Alaska, Bermuda, Scripps, Lamont, Delaware, Harbor Branch, LUMCON, Miami, Oregon, Michigan, Moss Landing, URI, Smithsonian, A&M, UW, WHOI, WHOI/ *Alvin*.

Wire and Winch Symposium Scheduled for December 1999

The UNOLS office has announced a NSF funded Wire and Winch Symposium to be held on December 1-2 in New Orleans La. One of the thrusts of the meting is to address the future needs and requirements of the sea-going community with regards to such equipment. The symposium will bring together researches, ship operators, as well as various manufacturers of winches, wires, and cranes. The results of the meeting will be published as a handbook for wire and winch technology which should replace and update the old Hnadbook that was written in 1982.

The Symposium will coincide with the Workboat Show which is scheduled for December 1-3 in New Orleans.

Draft Agenda for 1999 RVOC Meeting

1999 RESEARCH VESSEL OPERATORS COMMITTEE MEETING
Harbor Branch Oceanographic Institution
Ft. Pierce, FL
0800 Tuesday, 2 November 1999
HBOI Marine Education Center Annex

0800 Registration and Coffee/Pastry (Spouses/Guests Invited)

0830 Welcoming Remarks
- Tim Askew, Operations Manager
- Rick Herman, President and Managing Director
- Paul Ljunggren, Chairman, RVOC

0900 Old Business
- Minutes of the 1998 Meeting
- Defibrillator purchase- Mike Prince
- Primer on small research vessels- David Powell

0930 New Business
- Labs/Vans inventory and standards- Joe Coburn
- RVOC Website- Steve Rabalais

1000 Break

1020 Committee and Liaison Reports
- UNOLS, Jack Bash
- Safety Committee, Tom Smith
- Ship Scheduling Committee, Mike Prince
- RVTECH
- FIC & AICC, Joe Coburn

1100 Agency Reports
- National Science Foundation - Dolly Dieter
- Office of the Oceanographer of the Navy- Dr. Pat Dennis
- Office of Naval Research - Sujata Millick, Tim Pfeiffer
- Naval Oceanographic Office - Paul Taylor, Gordon Wilkes
- NOAA - CDR Elizabeth White
- USCG - Cdr. George Dupree, CDR Steve Wheeler, Dr. Jonathan Berkson
- U.S. State Department - Tom Cocke, Liz Maruschak
- Others

1200 Lunch

1315- Special Reports

Any one wanting to make a presentation during the special reports; please advise the Chairman or Vice Chairman prior to the meeting. Special reports, which are not completed prior to the afternoon break, will be held over to be completed later in the meeting.

- Representatives from other countries:
  - SACLANT - Chris Gobey
  - Canadian Coast Guard-Terry Tebb
  Southampton Oceanographic Centre - Paul Stone
  - Other Countries

- Research vessel updates; new construction, operations, engineering, foreign ports and operators recent experiences in foreign ports:
  - University of Hawaii New AGOR - Bill Coste
  - RSMAS Catamaran update- David Powell
  - SIO- ISM experiences to date Tom Althouse
  - WHOI/SIO- Update proposal to support NOAA Antarctic research
  - WHOI SWATH- Joe Coburn
  - Great Lakes Science Center ,R/V KIYI- Bob Nester
  - Skidaway Institute R/V Savannah Update- Steve Carignan
  - Florida Institute of Oceanography New ship -Gene Olson
  - Other operators with special reports

1515 Break

1530 Insurance and Liability

- Report will feature Dennis Nixon discussing liability and insurance issues.

1830-2030

- HBOI will host "A Taste of Aquaculture" buffet dinner at the Larizza Reception Center.

1999 RESEARCH VESSEL OPERATORS COMMITTEE MEETING
Harbor Branch Oceanographic Institute
Ft. Pierce, FL
Wednesday, 3 November 1999
HBOI Marine Education Center Annex

0830 Academic Fleet Review
Dolly Dieter will review the recommendations and what they mean to the operator specifically and the community in general.

0930 National Marine Fisheries Service-FRV40
Discussion by Jim Meehan of NMFS on the status of the proposed new fisheries research vessels for NMFS; number planned, the ship's capabilities and special requirements for the different regions/fisheries.

1015 Break

1035 Seanet
OMNET will provide an update on SEANET including overview and current status, billing, and future plans.

1145 Lunch

1300 Shipboard Activities Logging System

Presentation by NOAA on their shipboard logging system as it relates to shipboard activities.

1345 Computerized Machinery Maintenance Systems

Jamestown Marine will give a presentation on Computerized Machinery Maintenance Systems. They will provide an overview of what a good system should be able to do and include a demonstration of some CMMS systems so you the systems can be compared and contrasted.

1515 Break

1535 Ozone-Shipboard Applications
Ozone is currently employed in some water treatment and air quality systems. It has the ability to destroy microorganisms and, next to fluorine, is the most powerful oxidizer. Ken Hughes will give a presentation on ozone technology and its applications on board ships.

1615 Tour of HBOI Marine Operations Facilities

1999 RESEARCH VESSEL OPERATORS COMMITTEE MEETING
Harbor Branch Oceanographic Institute
Ft. Pierce, FL
Thursday, 4 November 1999
HBOI Marine Education Center Annex

0830 Unfinished Business

1000 Break

1015 Round Table Discussion
The Round Table is limited to Marine Superintendents or their equivalents from the institutions represented at the meeting. Marine Superintendents will select and discuss topics of mutual interest. Submit any items that you would like to discuss; to the Chair or Vice Chair prior to the meeting. Other items will be developed during the course of the meeting. Suggested round table topics:

- Seanet
- Personnel evaluations
- Selecting a Naval Architect
- Personnel data base
- The new UNOLS office

1145 Lunch

1300 Continue Round Table

1400 Business meeting
- Assignments to committees, panels and work groups
- Review of action items pending
- Suggestions for the 2000 Agenda and meeting format
- Vote on host for 2001 meeting

1500 Adjourn

Notes and Clippings

Regulatory
I. GMDSS 101
II. Safety Belts in Fall Arrest Systems
III. Ballast water Plants and Animals
IV. Rocking the Boat STCW
V. DSC Equipment
VII. OSHA Diving Exclusion

Insurance
I. Disability Discrimination

New Equipment
I. You've Got e-mail
II. Northwind Marine RIBS
III. New Seismic Vessel
IV. Ballast Water Technology

Management
I. YSK Leadership

Misc.
I. Pneumatic vs. Hydraulic Controls
II. Loran Extension
III. Tailor Made Forecasts
IV. Support ROV Projects
V. Integrated Nav Systems
VI. Shipping Software Guide

Training
I. Overhead Crane Training

Regulatory

BOATS & GEAR: GMDSS

lish contact with, and transfer information to, another station or group of stations." DSC technology has been around for about 10 years, but because a VHF with DSC costs about twice as much as a standard VHF, it isn't yet ubiquitous.

Ultimately, information transfer is what GMDSS is all about: ship to shore, shore to ship, and ship to ship.

In addition to a NAVTEX receiver, an EPIRB, two SARTs and survival craft radiotelephones, an A3 GMDSS installation includes:

• VHF installation of a transceiver capable of operating on channels 6, 13, 16 and 70, and capable of maintaining continuous DSC watch and of initiating DSC distress alert transmissions.

• MF/HF (medium frequency/high frequency) installation of transceivers capable of operating on 2182 kHz using radiotelephony and 2187.5 kHz using DSC, as well as all safety and distress frequencies between 1,605-27,500 kHz.

• An INMARSAT ship-earth communications station, type A, B or C, capable of transmitting and receiving distress and safety telegraphy, initiating and receiving distress priority calls, and maintaining watch for shore-to-ship distress alerts.

While it's both possible and legal to mix and match components when installing a GMDSS suite, the usual practice is to purchase a packaged set from one manufacturer. Furuno, SEA, Raytheon, JRC, Skanti and Sailor all offer GMDSS console systems. In addition, components from these companies along with SGC, Icom, Trimble, Ross Engineering, Navico, Simrad, and SP Radio have been approved for GMDSS use.

A typical A3 console includes a keyboard and message display terminal for both an SSB (Single Sideband) radio and an INMARSAT-C transceiver. Both are connected to printers. A DSC watch receiver, a DSC controller and a radio telex modem are interfaced with the SSB so it can operate as required for GMDSS. The red button for distress calls is on the controller. The INMARSAT unit must also have a single distress button wired in.

Also required but not necessarily wired into the main console are two DSC VHF radios.

BASIC TRAINING

That's the basic equipment. Then you have to have licensed operators to use it. Current regulations require two operators with FCC GMDSS certificates; one of who is designated the primary operator. Getting the certificate requires passing a multiple-choice examination; it doesn't require taking any classes. An

FCC certificate also doesn't mean you really know how to operate the equipment, according to Capt. John Scragg, an instructor at the Pacific Northwest Radar School in Seattle, a USCG-approved training center.

Scragg teaches a 70-hour GMDSS course that prepares students for the FCC exam and also satisfies Standards of Training, Certification and Watchkeeping requirements. By February 2002, all GMDSS operators will be required to be STCW certified. This means taking a 70-hour class from an approved school. This also means that the Pacific Northwest Radar School, the Elkins Training Co., Cal Maritime Academy and other approved schools will be increasingly busy as the 2002 deadline approaches.

Gregg Trunnell, director of Pacific Northwest Radar School predicts that "80 percent of the companies will wait until the last minute" to get their onboard personnel in training, a delay that could be expensive. Trunnell said his school now charges $1,750 for the 70-hour course, which is up from $1,350 a year ago. He said he expects classes just before the 2002 deadline to cost $3,000 or more.

Even after training, operators may have a tough time because the equipment they trained on isn't the same as the equipment onboard a particular vessel. While GMDSS equipment all does the same thing, it isn't all operated the same way. The situation is something like the difference between various computer operating systems.

GMDSS also requires that vessels either have a certified onboard equipment maintainer or a contract with a shore-based maintainer. Trunnell said that most companies have or will opt for the shore-based maintainer because the onboard option also requires carrying spare parts, testing equipment, manuals, etc, a requirement that even large ocean-going ships would find difficult to handle.

For more information about GMDSS requirements, equipment and training, visit the USCG Website (www.navcen.uscg.mil/marcomms/gmdss) devoted to the subject. ■

Safety Belts in Fall Arrest Systems...Good Riddance

In recent years, one of the more controversial things OSHA has done in the shipbuilding industry is prohibit the use of safety belts in Personal Fall Arrest Systems. Although it is fair to say most of the industry saw the wisdom in this, there were a large number of companies that felt the switch to fullbody harnesses was a needless expenditure that would not result in any significant improvement in safety.

One shipyard reported to OSHA it was not in favor of immediately switching to safety harnesses because they owned approximately 4,000 safety belts and replacing them immediately would cost $570,000.

While a half a million dollar investment might make a company think twice, I believe it is a very reasonable price to pay for the vast improvement in the fall protection afforded by fullbody harnesses.

When used in a Personal Fall Arrest System, the safety belt presents several problems, some of which are not well known.

The most widely recognized problem with safety belts is injury associated with "jack-knifing;" when a person falls and the body folds in half in response to the arresting force.

If the safety belt is worn properly, with the D-ring in the back, this results in the "nose-to-toes" posture. A large amount of force is suddenly directed at relatively soft tissues during jack-knifing which can result in a lacerated liver, ruptured spleen, broken ribs, or back injury.

If injury does not occur from the initial application of force during jack-knifing, the force associated with prolonged suspension from a safety belt can have serious consequences.

While suspended in a safety belt, the entire weight of the body is supported by a few square inches of material immediately below the ribcage. Compression in this area impacts three critical anatomical structures: the aorta; the vena cava; and the diaphragm. The aorta and the vena cava are the two largest blood vessels in the body. If the flow through these vessels becomes restricted, changes will occur in the blood pressure and the heart rate, which can result in the individual losing consciousness, or possibly, developing ventricular fibrillation.

Experiments with dogs have demonstrated suspension in a safety belt can induce ventricular fibrillation, which usually ends in cardiac arrest. The diaphragm is the muscle primarily responsible for respiration. Suspension in a body belt forces the organs in the abdomen against the diaphragm and restricts its range of motion. This causes labored breathing and, over time, can lead to asphyxiation.

The Air Force conducted a study of individuals suspended in safety belts and found the combination of impaired circulation and respiration was unbearable to most test subjects in less than two minutes.

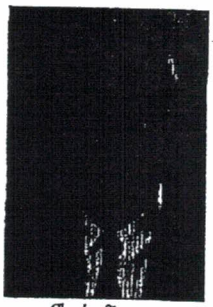
A possibility usually worse than jack-knifing is falling out of the body belt. Most people wear the safety belt around their waist, which can result in a head-down position after the arrest, which can cause the belt to slip off. If you read the instructions on the use of a body belt, you will discover the device is supposed to be positioned just below the ribcage — not on the waist.

Since most people's center of gravity is located above the navel, this positioning tends to rotate the body into a head-high posture after the arrest.

If the safety belt slips with the body in a head-high posture, the safety belt is caught under the armpits, thereby preventing a fall to the ground.

Fullbody safety harnesses do not suffer from any of these problems. They are designed to distribute the forces of a fall arrest across the body in a controlled manner so as to minimize the potential for injury.

One way this is accomplished is by orienting the body vertically during the fall arrest. The human body is best suited to dealing with large forces in the vertical plane since we spend most of our day in an upright posture.



Charles Simpson

The other way this is accomplished is by designing the seat of the fullbody safety harness to transfer most of the arrest force to the body. The seat of the harness contacts large bones, such as the pelvis and femurs, and the large muscles in the legs and buttocks. These structures require forces larger than those typically associated with a fall arrest to produce significant injury. Even if significant injury does occur, the injury is not likely to be life threatening.

Although OSHA no longer considers safety belts acceptable for fall arrest applications, they are still allowed in positioning systems.

The reason for this is that in positioning systems the safety belt serves as a restraining device that prevents the wearer from falling.

Since the wearer is never actually subjected to the force of a fall arrest while wearing the safety belt in this application, none of the problems associated with the use safety belts in fall arrest systems occur.

Charles Simpson, CSP, is a New Orleans-based consultant, specializing in safety issues related to hazardous chemicals. He can provide assistance with training and the development of written safety programs. Contact him at Safety Consulting Associates; tel: 504-624-8060.

Measures Announced to Prevent Environmental Damage from Harmful Aquatic Plants and Animals

The USCG announced measures to prevent environmental and health problems resulting from harmful aquatic plants and animals carried from abroad in ships' ballast water, a move reflecting the Department of Transportation's commitment to controlling and preventing the introduction of these species.

A new interim rule, effective July 1, requires ships operating outside of U.S. waters to report their ballast water management practices. It also establishes voluntary ballast water management guidelines for all waters of the U.S. The USCG is taking these actions to implement the National Invasive Species Act (NISA) of 1996.

Current federal regulations require ships entering the Great Lakes and upper portions of the Hudson River to conduct an open-ocean exchange of their ballast water prior to using these waterways. During this procedure a ship replaces the water in its ballast tanks with water that is less likely to contain potentially invasive species. This is currently defined as water from a sea area over 200 miles from shore and with a depth of 6,561 ft. This operational process has drawbacks, including ship safety concerns, but it is the best solution available at the moment.

The interim rule requires a ship with ballast tanks, after having operated beyond the 200-mile-wide Exclusive Economic Zone, to provide information that documents the ship's ballast water management efforts. This information will be collected by the USCG and entered into the National Ballast Water Information Clearinghouse (NBIC) database. The NBIC database will aid the USCG and other interested parties in identifying the patterns of ballast water management and delivery in waters of the U.S.

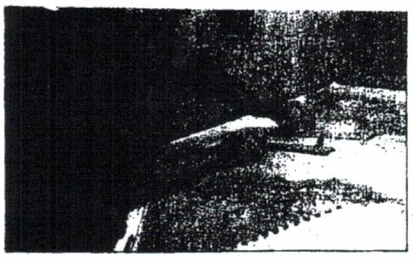
The regulations and guidelines in this rule implement voluntary national guidelines of NISA and will help control the spread of invasive species by:

- Promoting ballast water management for operators of all ships in all U.S. waters;
- Recommending voluntary ballast water management guidelines for operators of ships entering U.S. waters after having operated beyond the 200-mile-wide Exclusive Economic Zone; and
- Requiring operators of ships entering U.S. waters, after having operated beyond the Exclusive Economic Zone, to submit a ballast water management report to the Coast Guard.

Aquatic nuisance species invasion through ballast water is recognized as a serious problem threatening global biological diversity and human health.

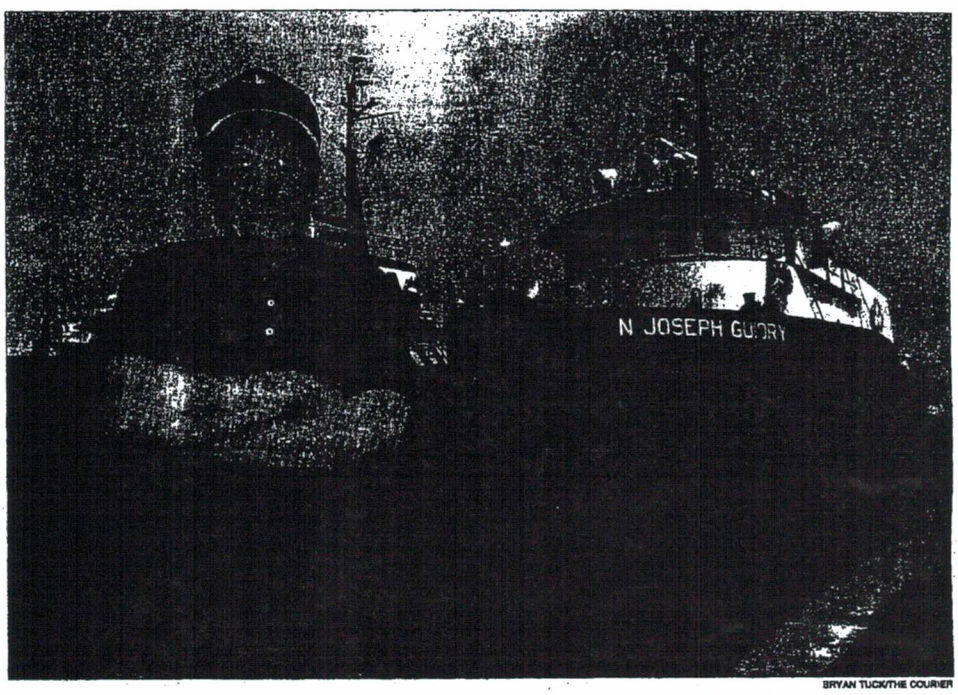
One of the primary pathways for the introduction and spread of nonindigenous aquatic species is a ship's ballast water.

A few of the aquatic species that have had the most dramatic invasive impacts in recent years include zebra mussels, which invaded the Great Lakes in 1986; Asian clams, which disrupt the food chain of northern San Francisco Bay; hydrilla, an aquatic plant that clogs waterways in 40 states; and purple loosestrife, another aquatic plant that has invaded 40 states where it displaces native vegetation and disrupts ecosystems.



Rocking the boat

The debate over new maritime rules has escalated recently into a power struggle, with the mariners' association claiming workers are not represented fairly and industry groups claiming the maritime unions are using the issues as a tool to unionize the Gulf Coast's offshore oil-and-gas industry.



BRYAN TUCK/THE COURIER

TOP: Drake Galjour works on navigational plotting recently at the Larose-based Lafourche Merchant Marine Training Services Inc. The school trains mariners seeking Coast Guard licenses, but it does not offer the soon-to-be-required Standards of Training Certification and Watchkeeping classes. **ABOVE:** Harvey Gulf towboat captain Ervin "Doc" Duet stands in front of his boat docked Thursday at Port Fourchon.

By MATT GRESHAM
The Courier

PORT FOURCHON – Ervin "Doc" Duet stepped off a 110-foot towboat last Monday after 32 days offshore.

The 52-year-old Galliano native has spent 32 years working on the waters of the Gulf of Mexico and most of the world's seven seas. The father of three has never been an activist or a rabble-rouser, but recently, he says he feels his way of life is being threatened.

That feeling made Duet speak out. Duet said mariners, those who work on Louisiana's many supply boats, lift boats and tugboats, are being squeezed by increased training requirements. Through his Cajun lilt, Duet says "boat people" are getting a raw deal.

"The biggest thing for me is I'm seeing a heritage that's disappearing," he said. "I'm thinking about the future generation. We have a tremendous shortage of young people because of the regulations now. I'm just trying to let the people know."

The issue is a new set of training standards for mariners implemented by the International Maritime Organization, an international body that regulates the maritime industry. Based in Britain, it has more than 100 member nations.

The training regulations fall under the International Convention on Standards of Training Certification and Watchkeeping, or STCW, as it is called by those in the business. No certification, no work.

The new regulations have sparked much debate here in south Louisiana, mostly due to a new group called the Gulf Coast Mariners Association, which is funded by five maritime unions.

Association officials have stirred mariners' emotions, saying the new rules could force some out of business. On the other side, industry groups such as the Offshore Marine Service Association have gone on record saying most mariners along the Gulf Coast are exempt from the rules and are in little danger of losing their livelihoods.

The debate has escalated recently into a power struggle, with the mariners' association claiming workers are not represented fairly and industry groups claiming the maritime unions are using STCW issues as a tool to unionize the Gulf Coast's offshore oil-and-gas industry.

All the while, no one knows exactly how or who the new training standards will affect, including the U.S. Coast Guard, whose job it is to enforce the regulations.

WHAT IS STCW?

The STCW certification requirements were first introduced in 1978 by the International Maritime Organization. The United States did not join the group until the early 1990s, however, and the organization amended the regulations in 1995.

The regulations affect mariners from masters and engineers to ordinary seamen, but only for those onboard vessels that weigh more than 200 gross (U.S.) tons and venture into international waters.

The training courses include Basic Safety Training,

BOAT, *continue on 7A*

Bridge Teamwork Procedures, Global Marine Distress Safety System and ARPA (radar) training.

However, the waters that are affected is a source of controversy.

The Gulf Coast Mariners Association says vessels that exceed the 12-mile limit are affected, while Offshore Marine Service Association has said crews are not subject to STCW as long as they operate within a 200-mile limit on domestic voyages, which are trips between U.S. ports.

The 200-mile limit is not final and neither is the final course load for STCW requirements, but industry leaders say the exemption will stick.

"Every utility boat and 98 percent of lift boats and tugboats fall into the exemption category," said Bob Alario, president of the Offshore Marine Service Association. "In essence, the largest part of the offshore fleet is exempt, and they don't have to worry about STCW one iota."

But mariners' association officials say no one is sure how the International Maritime Organization's final ruling will be interpreted.

"We're not sure how it will be implemented," said Sean Cunniff, a research analyst for the mariners' association. "The way the rule making process works is the (IMO) has to issue a final rule. (The Coast Guard) has issued an interim rule, but the Coast Guard is saying the final rule won't be implemented until 2001 or 2002."

STCW requirements go into effect Feb. 1, 2002, and due to lengthy and costly training procedures, some say the final ruling may come too late for mariners.

"The Catch-22 is even though the clock is running for mariners to come into compliance, the Coast Guard isn't sure what they have to do yet to become compliant," Cunniff said. "So it could be kind of guesswork for mariners to find out what they need for certification and that's part of the problem."

While Gulf Coast Mariners Association officials have touted the new training standards as a "crisis," Offshore Marine Service Association officials say the regulations are little more than a speed bump.

In a letter from Coast Guard Capt. Mike Rosecrans to Alario, the Coast Guard supported portions of industry group's interpretation.

The letter said in part: "This means that personnel on vessels working in the offshore drilling, exploration, and exploitation industry that are under 200 GRT have no new training requirements imposed by STCW or U.S. regulations implementing STCW."

Rosecrans even went a step further stating: "Personnel on vessels under 200 GRT may be issued STCW endorsements, if needed for international voyages without additional proof of qualification or additional training. These endorsements will limit personnel to specific vessels or classes of vessels."

However, it's these limitations that worry some mariners, and Coast Guard officials say the STCW debate will continue.

Dan Hall, the Coast Guard's acting chief of the Regional Examination Center in New Orleans, said STCW can be interpreted differently and there may never be a specific interpretation for domestic mariners.

"There's so much to this, it's so complicated, that there will be a lot of kicking it around," he said.

Hall said vessels that travel between U.S. ports within 200 miles of the coastline probably won't be affected. But the Coast Guard has the right to check STCW training on international vessels in U.S. ports, and other countries will check U.S. vessels in their ports.

"Everyone has their own interpretation of the law," he said. "What we are trying to do is standardize these interpretations. It's going to be a long, drawn-out process."

In a telephone interview, Rosecrans said the 200-mile limit exemption is not listed in the regulations, but said it is a general rule of the waters, which fall in what is known as the Exclusive Economic Zone.

"I can't say for sure, it's not my decision," Rosecrans said of final interpretation carrying the 200-mile exemption. "I don't expect any changes. I may be wrong later on as things develop, but I don't see any changes right now."

While mariners are concerned about the new standards, Hall says there is a simple solution.

"This is one of the most outstanding attempts to enhance maritime safety worldwide," Hall said. "Yes, it's going to cost some money. Yes, it's going to make some rich folks of the training schools. But no one forced people into this line of work, and some people are just going to have to bite the bullet and get certified."

Hall said his office would suggest any mariner working offshore to become STCW certified for safety's sake.

"The thrust of this thing is to raise the level of safety and environmental protection on board vessels," Hall said. "The maritime field has finally taken note that we're losing enough ships and enough lives, and something needs to be done on a worldwide level."

FOR MORE INFORMATION

MARINER CONTACTS

Offshore Marine Service Association
990 N. Corporate Drive, Suite 210
Harahan, LA 70123
(504) 734-7622

Gulf Coast Mariners Association
761 W. Tunnel Blvd.
Houma, LA 70360
(504) 580-4100

INFORMATIONAL MEETING

Morgan City Municipal Auditorium
Tuesday at 6:30 p.m.

MARINERS' CONCERNS

It was 1975, and Doc Duet was in the North Sea aboard a vessel chasing down a drilling rig that had broken loose from its mooring in 60-foot seas.

Armed with his first license Duet said he received from a "school" in a Larose barroom, the vessel achieved its mission safely in the harsh environment.

"There's never enough safety," Duet said, snuffing out another Kool cigarette. "When you go out there in the ocean, it's a completely different environment. The best thing is to use common sense."

Duet said common sense tells him that increased safety is positive for the industry. But, he said, common sense also brings to light other questions like the cost and availability of training.

He says increased regulations would thwart local people from entering the industry, thus creating a labor shortage. According to Duet, the regulations could also leave small boat companies at a disadvantage.

"The big companies can afford to train everyone, and small companies can't afford to do that," he said. "The increased regulation is going to make it harder to attract young people to the industry. So, the bigger companies want this so they can say, 'Hey, we have a labor shortage.' And then what are they gonna do? Bring in foreign labor."

Duet said common mariners cannot afford the training, which could cost more than $5,000.

"People can't afford it down here," he said. "This is a way for the bigger companies to hire foreign labor and get around the Jones Act."

The Jones Act provides that any vessel used in domestic trade has to be built in the United States and have a 75 percent U.S. ownership.

Gary Chouest, president of Edison Chouest Offshore Inc., a privately held boat company in Galliano, said Duet's remarks are not accurate.

"The large boat companies would never want the Jones Act to be pierced," Chouest said. "The day it is broken you'll have Norwegian, British and Japanese boats in here working the Gulf of Mexico. So big companies would never support changing the Jones Act, because we would get foreign competition."

WHERE'S THE TRAINING?

Companies like Edison Chouest have already dealt with the higher training standards for years. The company operates more than 100 boats, and half of those exceed the 200-ton exemption limit.

Chouest said the company's overseas crews have had to meet standards similar to STCW for about five years now.

Until recently, the company has had to "outsource" training programs or use local facilities to train their employees.

Chouest said the company is currently building an in-house training center to have the ability to train its boat crews to STCW standards. While it's an added expense, Chouest said, the training standards are good for the industry.

"Everything STCW represents is for the betterment of the individual," he said. "No one likes change. But, if you take a nonbias look at this, it's good for the industry."

Chouest said mariners along the Gulf Coast have to realize the waters in which they work are connected to the rest of the world's.

"It's a minimum standard, not only for us, but for international mariners," he said.

Edison Chouest's training facility will be the only one in the area, and mariners like Duet said they need choices. Duet said "boat people" need training centers, just like the vocational-technical schools offer welders.

"Some people have been pushing the government for a grant so people could go to a local school at a reasonable price," Duet said. "We're not asking them to pay for everything. Just give us a choice where we can go to school. That's all."

Duet said the large boat companies will train their employees at no charge, but mariners who work for smaller companies would have to foot the bill.

Currently, the closest school for any type of STCW training is Houston Marine Training Services in New Orleans. The training center is now offering discounted training.

In a recent press release, Houston said it was offering Basic Safety, Bridge Teamwork Procedures and Global Marine Distress Safety System classes at a cost of $2,850 per student.

WHAT'S THE STAKE?

With the STCW issue raising controversy throughout the local maritime ranks, most industry officials blame the Gulf Coast Mariners Association for the confusion. The group rejects those charges and says it is only trying to offer mariners' a voice.

The association, which has offices at 671 W. Tunnel Blvd. in Houma, has been active in the area since April. Technically, the group is not a union and has a local board. However, it is funded by unions.

On the group's local board is Ray and Penny Adams, proprietors of the Lafourche Merchant Training Service in Larose. The group plans to add two additional local members to its board later this month.

"It's obvious to everybody that (mariners) need a voice, a mechanism to influence policy and regulations," Cunniff said. "And the unions wanted to make sure they had the ability to do that. So, they helped start this association at the prompting of mariners."

Cunniff said the group is trying to stress that it's an association and not a union.

"There's a lot of fear about joining a union and what it would mean, and people want to know they are joining an association that will look out for them, but not necessarily a union."

To industry officials, the association should just as well be a union.

"The GCMA has been flatly spreading erroneous information and they insist on creating confusion," said Alario of the Offshore Marine Service Association. "What they are trying to say is these mariners have no voice and they are not represented. That's all bull!"

Alario said his group represents 90 percent of the maritime industry operating in the offshore oil-and-gas business.

"These people are trying to drive a wedge between the employer and the employee," Alario said. "It was founded by the unions, and it is there attempt to establish a foothold on our business."

Duet said he joined the Gulf Coast Mariners Association to get more involved in his industry's decision-making process.

"Someone has to let the public know, and they have to be behind it," he said about standard changes. "They have to stop being afraid of this association."

Cunniff said much of the marine industry has overreacted to the presence of his group.

"They are saying that we're a union or we're staring a union," he said. "They are intimidating their workers, trying to get them not to join. We don't want people to feel intimidated. We know companies are intimidating folks. It's important for these mariners' companies to support them."

Alario said the mariners' association's comments are just a front.

"They saw an opportunity to come in using a shield," Alario said. "My view is they saw an opportunity to use a legal front through the GCMA and convince a number of people they had no interest except to organize an association.

"They saw STCW as a vehicle that was causing confusion, and they chose to ride that horse."

Alario said the association will not stop with mariners.

"I'm convinced we're a stepping stone into the oil industry," he said. "There's nothing to prevent a maritime union from organizing other areas of the industry like shipyards and fabrication yards."

For now, some debate will continue about the affects of STCW and the organization of the Gulf Coast Mariners Association.

In order to answer some mariners' questions, the Offshore Marine Service Association and the Coast Guard will hold a public meeting on the issue Tuesday in Morgan City. The meeting will be at the Municipal Auditorium and will begin at 6:30 p.m.

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AT A GLANCE

Inland Insider

Big changes in license suspension procedures loom

BY FREDERICK B. GOLDSMITH

On April 6, 1998, a Notice of Proposed Rulemaking was published that could have a big effect on the lives of many mariners. Specifically, the NPRM will dramatically alter the procedures that the Coast Guard follows when it seeks to take action against a mariner's license or MMD. Such actions are called Suspension and Revocation (S&R) proceedings.

At present, S&R proceedings are more akin to criminal cases in which the Coast Guard serves the mariner with written charges and a notice of when and where the hearing will occur. The mariner generally just has to show up, with or without an attorney, and put on his or her case before an administrative law judge. At the hearing, the Coast Guard has to prove its case, even if the mariner fails to show up.

Under the NPRM, the new S&R procedures closely resemble those followed by parties during a civil lawsuit: the Coast Guard files a "complaint" and the mariner files an "answer." No longer can the mariner just show up. He must now — most likely with the help of an attorney — formally answer the charges in writing, "specifically deny" anything that he or she disagrees with in the charges, and tell the USCG in the answer what "affirmative defenses" he or she intends to raise at the hearing.

And contrary to current S&R practice, the NPRM affords the Coast Guard the right to appeal the administrative law judge's ruling. Current rules permit only the licensed mariner to appeal.

If the mariner evades being served with the complaint, fails to answer the complaint, or fails to specifically deny the charges in the complaint, the mariner can be hit with a default judgment in favor of the Coast Guard.

Under present S&R procedures, the USCG must serve the mariner with its charges and specifications in person or by certified mail. This means the S&R proceedings do not officially begin until the mariner has the Coast Guard's written charges and specifications in hand. The NPRM was worded to relax this "personal service" requirement by allowing the Coast Guard to simply mail its complaint (by regular mail). The mariner is then required, under the NPRM, to answer the complaint within 20 days or face a default judgment, just like in civil litigation in state and federal courts.

Herein lies the big problem. As we all

Continued on page 21

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RTCM COMMITTEE TO DEVELOP RECOMMENDED PRACTICES FOR DIGITAL SELECTIVE CALLING EQUIPMENT DESIGN AND IMPLEMENTATION

Prior to development of the Global Maritime Distress And Safety System maritime distress calling and coordination relied primarily on ship-to-ship communications, essentially relying on every ship being a "lifeboat" (potential rescuer) for every other ship. The GMDSS amendments to the International Convention for the Safety of Life At Sea have replaced this concept with a ship-to-shore based safety system that relies on use of automated systems including Digital Selective Calling (DSC).

As a result of concern with the number of erroneous HF DSC distress alerts and alert relays received by U.S. Coast Guard HF radio stations, the U.S. Coast Guard (USCG) and Federal Communications Commission (FCC) entered into an agreement to have the FCC test DSC radios for compliance with requirements. The limited testing reported to date included only certain capabilities of HF DSC transceivers intended for use on ships.

Results of the initial HF DSC tests indicated distinct differences in the implementation of standards by manufacturers. Problems included:

- One model occasionally inserted in a distress relay menu the wrong identity of vessel in distress. If the error was not caught and manually changed by the operator, the relay message identified the wrong vessel in distress.
- One model easily allowed the operator to create and transmit a distress relay from received distress acknowledgements, distress relays, and distress relay acknowledgments.
- All models except one allowed users to relay distress alerts that had previously been acknowledged.
- Three models appear to retain position information manually entered into radios indefinitely, although one model lost position information when unit was powered off.
- Two models continued transmitting distress alerts on one DSC distress channel, after an acknowledgement was received on another channel.
- Alarms sound on all radios each time a distress alert is sent or received, a distress acknowledgement is received, a distress relay is received, or a distress relay acknowledgement is received. One false distress alert will sound a distress alarm on a nearby ship's radio 16 times, assuming seven relays of that alert are transmitted and acknowledged.

(continued from page 1)

Subsequently limited testing of VHF DSC radios has been undertaken and a report is in preparation. Preliminary reports indicate that for VHF DSC equipment as well there are a number of problems in operational use of the equipment, indicating differences in the implementation of standards.

In order to identify specific DSC problem areas and potential solutions, RTCM Special Committee 101 has been tasked with development of a document providing RTCM Recommended Practices For Digital Selective Calling Equipment Design and Implementation. The document is intended to be used as a source document for manufacturers, standards developers and regulatory bodies concerned with improving effectiveness of the DSC system. Results of the USCG/FCC tests and development of this document will be the primary agenda item for the RTCM Special Committee 101 meeting being held in conjunction with the RTCM Annual Assembly Meeting the week beginning May 9, 1999 (See Calendar in this Newsletter). RTCM members concerned with these issues are invited to participate in the SC101 meetings and, if not yet on the SC101 mailing list, to forward request to the RTCM Office for inclusion of their names on the list.

On July 22, 1977, [42 F.R. 37650] the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) issued final public notice of the adoption of a permanent diving standard which became effective on October 20, 1977. OSHA's original diving standard, 29 CFR Part 1910 - Subpart T "Commercial Diving Operations," established mandatory occupational safety and health requirements for commercial diving operations. The standard applies wherever OSHA has statutory jurisdiction. Consequently, diving in any natural or artificial inland body of water, as well as diving along the coasts (state territorial waters) of the U.S. and possessions listed in Section 4(a) of the OSH Act [29 U.S. 655] is covered. For coastal states and territories, the state territorial waters extend three nautical miles seaward from the coast line, except for the Gulf Coast of Florida and Texas, where the territorial waters extend for three marine leagues (approximately nine nautical miles). For states bordering the Great Lakes and St. Lawrence River, all waters in the Great Lakes and associated rivers up to the international boundary line with Canada are State territorial waters.

ORIGINAL EXCLUSIONS

The original OSHA diving standard provided three specific exclusions which remain in effect as follows:

1. Instructional diving utilizing only open-circuit compressed air SCUBA within the no-decompression limits – OSHA concluded that a valid distinction existed between SCUBA diving instructors and commercial divers which warranted an exclusion. The SCUBA diving instructor, who is an employee, is student oriented, not task oriented. The dive site is not determined by the location of a particular job as it is in commercial applications, where operations must of necessity be conducted under environmental conditions which are often adverse. The SCUBA diving instructor, by contrast, selects a location which is usually clear, shallow, and warm. Indeed, a swimming pool is the dive site for most SCUBA diving instruction. Such dives are discontinued if the slightest difficulty occurs. SCUBA diving instructors do not utilize construction tools, handle explosives, or use welding or burning tools. As a result of these factors, SCUBA diving instructors are rarely exposed to adverse sea states, temperature extremes, great depths, poor visibility, or heavy work loads, some or all of which are common to the majority of commercial diving operations.

However, OSHA took into consideration that some diving techniques and conditions pose greater potential hazards than others, regardless of the purpose of the dive. Thus, this exclusion for SCUBA diving instruction was limited to a restricted diving range, a particular diving mode, and specific equipment. The exclusion from the standard applies only to instructional diving which uses open-circuit compressed air SCUBA and is conducted within the no-decompression limits. The standard defines no-decompression limits as the depth-time limits of the "no-decompression limits and repetitive dive group designation table for no-decompression air dives" of the U.S. Navy Diving Manual, or equivalent limits which the employer can demonstrate to be equally effective. No distinction per se is made between instructors of prospective recreational divers and instructors of prospective commercial divers.

However, by its very nature, the training for commercial divers involves diving that is surface-supplied, uses mixed gas as a breathing gas, requires decompression, often involves adverse environmental conditions, or involves the use of underwater tools and equipment; each of these factors potentially increases the hazard of the operation. It is emphasized that when instruction exceeds the specified limits, the OSHA diving standard applies. It is noted that individuals engaged in recreational diving for their own personal enjoyment, and not otherwise related to their respective employments, are not within the jurisdiction of the OSH Act, and therefore are outside the scope of OSHA's diving standard. On the other hand, SCUBA diving for a commercial rather than instructional purpose is covered by the OSHA diving standard, regardless of equipment or depth-time range.

2. Search, rescue and related public safety diving by or under the control of a governmental agency – OSHA received a number of comments from persons engaged in diving incidental to police and public safety functions, and the Agency concluded that an exclusion was appropriate for such applications. The "by or under the control of a governmental agency" language is intended to make the exclusion applicable to all divers whose purpose is to provide search, rescue, or public safety diving services under the direction and control of a governmental agency (e.g.; local, state, federal government) regardless of whether or not such divers are, strictly speaking, government employees. Diving contractors who occasionally perform such services privately on an emergency basis, and who are not under the control of a governmental agency engaging their services, do not come under this exclusion. Such divers may, however, be covered by the provision concerning application of the standard in an emergency. In excluding these search and rescue operations, OSHA determined that safety and health regulation of the police and related functions are best carried out by the individual States or their political subdivisions. It is pointed out that this exclusion does not apply when work other than search, rescue and related public safety diving is performed (e.g., police divers repairing a pier).

3. Diving governed by the Protection of Human Subjects regulations of the Department of Health, Education and Welfare (HEW) or equally effective rules or regulations of another Federal Agency – Diving operations which are governed by 45 CFR Part 46 are not within the scope of OSHA's commercial diving standard. Such operations involve research and development or related scientific activities requiring human subjects and receive HEW grants or contracts. Compliance with HEW regulations is mandatory for such employers or contractors, and the regulations are designed to promote safety and health.

Similarly, any other Federal agency which adopts rules orregulations that are equally effective (i.e., similar in design, purpose, and effect to those of HEW) are covered by this exclusion. The exclusion is supported in the record on the grounds that it would permit continued scientific research designed to extend the safe limits of diving physiology and technology. The long-term safety and health interests of divers are best served by the continuation of this research, and such diving cannot reasonably be expected to comply in every respect with a standard which is designed to reflect current commercial diving operational practice.

EMERGENCY PROVISION

The original OSHA diving standard also included a provision for emergency situations, which remains in effect, when the overriding consideration is the preservation of life and the protection of the environment as follows:

The "Emergency Provision" permits deviations from the requirements of OSHA's diving standard in situations where death, serious physical harm, or major environmental damage is likely,but only to the extent that such action is immediately necessary to prevent or minimize the harm.

No exemption is provided by the emergency provision for situations where purely economic or property damage is likely. Further, the emergency provision is not intended to substitute for the statutory variance procedures under Sections 6(b)6(A), 6(b)6(C), 6(d), and 16 of the OSH Act. This emergency provision anticipates the unique circumstances for which diving services are sometimes needed and thus obviates the need for a continuous OSHA variance capability to make ad hoc determinations in emergency situations. Although temporarily exempt from inappropriate substantive portions of the standard in such emergency situations, employers are required to notify the nearest OSHA Area Office within 48 hours and upon request of the Area Director, to submit a record of the notification, with an indication and explanation of what deviations from the standard were taken as a result of the emergency. This reporting requirement enables OSHA to monitor the use of this exemption.

SCIENTIFIC DIVING EXEMPTION

The original OSHA standard for commercial diving operations did not exempt diving performed solely for scientific research and development purposes. Subsequent to the publication of OSHA's original standard, the Agency received numerous requests from various individuals and organizations to reconsider the applicability of the standard to

educational/scientific diving. Proponents for exempting educational/scientific diving noted that it was customary for the educational/scientific diving community to follow well-established, consensual standards of safe practice. They pointed out that the first set of consensual diving standards was developed by the Scripps Institution of Oceanography of the University of California (Scripps) in the early 1950s.

Further, in 1973, diving safety boards and committees from ten major educational institutions involved in scientific diving met and accepted the University of California Guide for Diving Safety as a minimum standard for their individual programs. Therefore, it was contended that most diving programs at educational institutions were complying with this consensual standard, with limited modifications for regional and operational variations in diving, before the publication of the OSHA original diving standard. The educational/scientific diving community pointed to their excellent safety record prior to OSHA's publication of a diving standard, and attributed their safety record to the effectiveness of self regulation by their community. Additionally, they noted that significant differences exist between commercial diving and educational/scientific diving. For example, the educational/scientific diver is an observer and data gatherer who chooses the work area and diving conditions which will minimize environmental stresses, and maximize the safety and efficiency of gathering data. In contrast, it was noted that the commercial diver is an underwater construction worker, builder and trouble shooter whose work area and diving conditions are determined by the location and needs of the project.

Based on the concerns expressed by the educational/scientific diving community, on August 17, 1979, OSHA published an advance notice of proposed rulemaking (ANPR)[44 F.R. 48274] to obtain additional information concerning which provisions of the OSHA diving standard were causing the most difficulty and what modifications to the standard should be considered. The responses to the ANPR, together with other information and data contained in OSHA's commercial diving record, convinced the Agency that there was a significant difference between educational/scientific diving and commercial diving; that the safety record of the educational/scientific diving community represented evidence of its successful self-regulation; and, as a result, an exemption for educational/scientific diving might be justified. Accordingly, on March 26, 1982, OSHA published a notice of proposed rulemaking [47 F.R. 13005] to exempt diving "performed solely for marine scientific research and development purposes by educational institutions" from the OSHA diving standard. Although it was proposed to exempt only educational institutions which perform scientific diving, in the notice of proposed rulemaking OSHA requested responses to three specific questions in order to solicit data and information for determining if the exemption should include other segments of the scientific diving community. The original comment period for this notice of proposed rulemaking was May 10, 1982, however, on May 26, 1982, OSHA published a notice [47 F.R. 22972] extending the comment period as requested by the American Academy of Underwater Sciences to June 18, 1982, and scheduled informal public hearings for June 29-30, 1982 in Washington, D.C., and July 7-9, 1982 in Los Angeles, Calif. Following completion of the public hearings, the submission of post-hearing comments, and receipt of arguments and briefs relating to the hearing issues, the Administrative Law Judge certified the record on September 3, 1982.

Based on the overwhelming support from comments and hearing testimony, as well as other information contained in the record, OSHA concluded that an exemption was justified for all scientific diving, not just solely scientific diving performed by educational institutions. Therefore, OSHA decided to broaden the exemption to include all segments of the scientific diving community. Based on the record, OSHA's exemption for scientific diving included specified conditions that scientific diving programs must meet before members of the scientific diving community may avail themselves of the exemption. On November 26, 1982, OSHA exempted scientific diving from coverage under 29 CFR Part 1910, Subpart T, Commercial Diving Operations, provided that the diving meets the Agency's definition of scientific diving and is under the direction and control of a diving program utilizing a safety manual and a diving control board meeting certain specified criteria [47 F.R. 53357; 1910.401(a)(2)(iv)].

The November 1982 scientific exemption, however, was subsequently challenged by the United Brotherhood of Carpenters and Joiners (UBCJ) under Section 6(f) of the OSH Act. The union filed a petition for judicial review of the final rule regarding the scientific exemption, and on April 4, 1984, the Court of Appeals issued a memorandum and court order which required further action regarding this final rule. In compliance with the Court's memorandum and order, OSHA published a notice on July 18, 1984[49 F.R. 29105], which reopened the record, and required a determination of the interpretive guidelines that OSHA proposed to use in determining which enterprises may avail themselves of the exemption for scientific diving. Final action regarding this court order was concluded and published by OSHA on January 9,1985 [50 F.R. 1046], "Commercial Diving Operations - Exemption for Scientific Diving - Final Guidelines." This notice established the final guidelines that OSHA uses, in conjunction with the exemption criteria contained in the final rule [47 F.R.53357; 29 CFR 1910.401(a)(2)(iv)], to determine whether a scientific diving program can avail itself of the exemption from the OSHA commercial diving standard. It is emphasized that the absence of any factor specified in the guidelines [Appendix B to 29 CFR Part 1910 - Subpart T, Commercial Diving Operations] or the final rule [29 CFR 1910.401(a)(2)(iv)] renders a diving program ineligible for the exemption.

The final rule [29 CFR 1910.401(a)(2)(iv)] which became effective on November 26, 1982, exempts any diving operation which is, "Defined as scientific diving and which is under the direction and control of a diving program containing at least the following elements:

(A) Diving safety manual which includes at a minimum: Procedures covering all diving operations specific to the program; procedures for emergency care, including recompression and evacuation; and criteria for diver training and certification.

(B) Diving control (safety) board, with the majority of its members being active divers, which shall at a minimum have the authority to: Approve and monitor diving projects; review and revise the diving safety manual; assure compliance with the manual; certify the depths to which a diver has been trained; take disciplinary action for unsafe practices; and, assure adherence to the buddy system (a diver is accompanied by and is in continuous contact with another diver in the water) for SCUBA diving."

In addition to the final rule, Appendix B to 29 CFR Part 1910, Subpart T (Commercial Diving Operations Standard), "Guidelines for Scientific Diving", became effective on January 9, 1985. This appendix provides guidelines that are used in conjunction with the final rule to determine those scientific diving programs which are exempt from OSHA's diving standard. The guidelines are as follows:

1. "The Diving Control Board consists of a majority of active scientific divers and has autonomous and absolute authority over the scientific diving program's operations." The first guideline concerns organizational structure. OSHA concluded that the organizational structure of the scientific diving community's consensual standard program is not only vital to the integrity of scientific diving programs, but effectively serves to segregate scientific diving from commercial diving.

The Diving Control Board required of scientific diving programs contains several ele-

ments that distinguish between commercial diving and the exempt scientific diving programs. These distinctive elements include absolute authority over diving operations, the autonomy inherent in the Diving Control Board's decision-making powers and responsibilities, and peer review.

OSHA's intent was for the Diving Control Board, primarily consisting of the divers themselves, to regulate the diving activities in a manner consistent with that described by the scientific diving community during the rulemaking process. Therefore, OSHA requires that Diving Control Boards have this autonomous and absolute authority over scientific diving operations. OSHA also concluded that the peer review system has successfully regulated scientific diving programs and, therefore, OSHA mandated that the majority of members of the Diving Control Board be active divers. OSHA's intent with respect to this "peer review" was that the active divers required to make up the Diving Control Board would be scientists who actively dive, since at issue was the control of a scientific program. Thus, OSHA will interpret the membership requirement as it was intended in the final rule. The "majority of active divers" on the Diving Control Board must also be scientists.

> *"Based on the overwhelming support from comments and hearing testimony... OSHA concluded that an exemption was justified for all scientific diving."*

2. "The purpose of the project using scientific diving is the advancement of science; therefore, information and data resulting from the project are non-proprietary." The second guideline concerns the restricted purpose of the project. In part, the definition of scientific diving is "diving performed solely as a necessary part of a scientific, research, or educational activity" [47 F.R. 53365; 29 CFR 1910.402]. The National Oceanic and Atmospheric Administration (NOAA) Diving Manual notes that "marine research using diving as a tool has been important in understanding the ocean, its organisms, and its dynamic processes." Such diving includes the study of fish behavior, ecological surveys and benthic surveys (the aggregate of organisms living on or at the bottom of a body of water).

Scientific diving is an adjunct used in the advancement of underwater science. For example, representatives from the scientific diving community noted during public hearings and in written comments that "Our objective is to promote the advancement of science and the use of underwater methods", that "Research and the furtherance of scientific knowledge are their (the divers) primary goals", that results are "shared worldwide," and further that coverage of the scientific diving community by Subpart T, Commercial Diving Operations, may cause "irreparable damage to the underwater scientific effort of the United States." Because the exemplary safety record which led OSHA to promulgate the scientific exemption to Subpart T was created by diving with the restricted purpose of advancing science, OSHA limited the scope of the exemption to diving intended to advance science.

OSHA recognizes that the advancement of science cannot occur unless such studies are made available to contribute to and enhance scientific knowledge. Therefore, OSHA's intent was to restrict the exemption to scientific research dives that result in non-proprietary information, data, knowledge, or other work product. The requirement that information be non-proprietary applies to scientific, research, and educational activities engaged in by scientific divers. Material available to the public for review is non-proprietary, whether or not it is published; material not available for review is proprietary.

3. "The tasks of a scientific diver are those of an observer and data gatherer. Construction and trouble-shooting tasks traditionally associated with commercial diving are not included within scientific diving." The third guideline concerns the tasks performed. The scientific diving definition in the standard states that such diving must be done by

Insurance

Beware costly mistakes in disability discrimination

By Phillip M. Perry

Employers want to do the right thing for disabled workers. Given the demands of federal and state laws, though, employers need to be wary of actions-- many of them well-intentioned-- that can trigger costly lawsuits for disability discrimination.

It's not easy to know what the law requires. Largely absent are the clear cut policy guidelines that have proven so useful in guiding supervisors away from age and sex bias. In contrast, disability law requires that each case of potential discrimination be handled on its own merits.

Imagine yourself in this situation. Sarah, one of your most valuable supervisors, has been acting strangely for the past several months. The problem started when she complained about losing sleep because aliens in flying saucers were hovering over her house at night. Everyone thought she had gone off the deep end, but ignored the problem.

This morning, things took a turn for the worse. When Sarah arrived at work, she was bleeding profusely from the scalp. "It's the God damned aliens," she told her staff. "They attacked me on the street."

Alarmed, employees from Sarah's department march into your office. "We are afraid of this woman," they say. "She has to go."

What do you do?

Whatever your response, you incur risk. You sense that Sarah is becoming dangerous. If you ignore the issue, she may hurt someone. On the other hand, Sarah has not really threatened anybody. And you understand that mental illness is protected by the Americans with Disabilities Act (ADA), as well as state laws. That means that if you fire Sarah, you are facing a costly discrimination lawsuit.

The above story is based on an actual event. Later in this article, we'll hear from the attorney who defended the employer against a resulting lawsuit. See if his advice on how to handle Sarah concurs with your own decision.

If you haven't yet had to make a tough call on a disability-related workplace issue, you soon will. One out of five Americans is disabled, according to the Census Bureau. As the workforce ages, you will receive more requests for reasonable accommodations to allow disabled employees to perform essential job functions. And the ADA protects any employee who has a substantial mental or physical disability (See the sidebar: "Who is protected?")

You face the risk of a costly lawsuit with every decision you make. Is an employee really disabled or just gold bricking? Is a requested accommodation reasonable or too expensive? Is that task essential or can the job be done another way? Answer any of these questions incorrectly and you end up on the losing end of a disability discrimination lawsuit.

Worse, employers are often sued for being too helpful. Suppose you ask an obviously troubled employee if he has seen a psychiatrist. Later, after you dismiss the individual for poor work performance, you get hit with a lawsuit. The charge: your question proves that you perceived the employee as being disabled and that's why you fired him. The ADA protects employees who are "perceived" to be disabled, even if they are not disabled in reality.

In navigating the troubled waters of the ADA, you need some guidance. In this article, seven attorneys who specialize in ADA lawsuits tell how to stay on the winning side of the law in common work place settings. At the start of each situation, pick the decision that seems best. Then see if the attorney concurs.

Situation 1: Judy visits your office and says, "I need several weeks off. I have been feeling very depressed."

You decide to:

A. Grant Judy the requested leave, since she has claimed she has depression, a condition covered by the ADA.

B. Probe Judy about the reasons for her depression, to make sure her problem is genuine.

C. Ask Judy to bring in a doctor' s certification that she is depressed.

Here, "C" is the best response. "Start by asking Judy to produce medical documentation to support her statement that she has a mental disability," says Gary Phelan, a partner with the New Haven, Conn., employment law firm of Garrison, Phelan, Epstein, Chimes & Richardson. The ADA allows employers to require proof prior to providing an accommodation.

Avoid probing Judy about the reasons for her mental condition. "Employers often get into trouble when they step into the role of physician," says Phelan. "Even if you try to be helpful, you end up dealing with stereotypical beliefs which may have no basis in fact. So leave the analysis to an outside medical provider."

Once you have proof in hand that Judy is entitled to accommodation, determine alternative ways to accommodate this disability. "If Judy's request does not seem reasonable, you may respond with another proposal," says Phelan. "If it enables Judy to perform her job it would comply with ADA." You might ask: "Is there anything we can do here at work to help you do your job better?" This question keeps the concentration of workplace activities, while allowing Judy to open up with additional suggestions for accommodations, other than taking time off. This can be valuable, since other solutions may be far less costly than leave. Maybe Judy needs to have her desk moved away

(continued)

Get more information

For more information check out the web site of the U.S. Equal Employment Opportunity Commission (EEOC) at http://www.eeoc.gov/. Look especially for "Facts About Employment Discrimination," then "Your Responsibilities as an Employer."

from an obnoxious co-worker. Or perhaps Judy just needs a 15-minute break every 90 minutes.

"Employers should not just respond 'yes or no' to employee requests for time off or other accommodations," says Phelan. Allowing too many accommodations is costly to your business. And disallowing the wrong ones can get you sued for disability discrimination.

Situation 2: During his annual performance review, Bill says "I am feeling a lot of stress at work."

You decide to:

A. Ask Bill how you can help him do his job so that his work experience is a better one.

B. Ask Bill for the reasons why he is stressed.

C. Attempt to find out if he is covered by the ADA by asking if he has seen a medical doctor or psychiatrist. If you need to terminate or demote Bill at a later date, Bill may sue you for disability discrimination, claiming that your question proves you perceived him to be disabled, and you took negative action for that reason.

Bill is not saying he is depressed, which is considered a disability by the ADA, but stressed, a condition which is not. The correct answer is "A." You want Bill to open up and explain what you can do to improve his work experience.

"You should not invite Bill to tell you more about his mental health condition," cautions David K. Fram, director of ADA services for the National Employment Law Institute, Washington, D. C. "You do not want to ask what is stressing Bill, or whether he has seen a doctor about it. Concentrate on work performance. Maybe Bill says he needs a break every two hours – in that case, provide it." If Bill volunteers the information that he is depressed, then you can require that he obtain a doctor's certification to that effect.

If Bill continues to exhibit stress, or to issue complaints, you might suggest outside help, but be sure to use language that does not suggest you consider him to have a disability. Fram suggests a statement such as this: "Bill, you have a right to request reasonable accommodations if you have a disability." Let Bill volunteer the information that he has a disability.

Situation 3: Anna, who operates a cash register and computer keyboard, says she is getting sore wrists.

A. Send Anna to a medical doctor for a report.

B. Ask Anna if she is able to continue in her job, and if she says "yes," then let her.

C. Terminate Anna because she cannot perform an essential function of the job.

Is Anna expressing a disability that is covered under the ADA? Not yet. On the other hand, this sounds like a condition which may worsen into repetitive stress injury (RSI), which would be covered by the ADA. The correct answer is "B."

Obtain additional information about the severity of the problem. "You can start by asking, 'are you saying you can't perform this job?'," says James J. McDonald, Jr., a partner with the

Newport Beach, Calif., employment law firm of Fisher & Phillips. "If Anna says 'Yes I can' then there is no need to do anything."

On the other hand, if Anna says she can no longer do the job, she is in effect disclosing that she has a disability. "You should ask Anna to see a physician and obtain documentation that she is restricted from running the equipment," says McDonald. The physician will also suggest solutions, such as the use of wrist braces. "If braces or other solutions do not help, then see if there is another vacant job for Anna," suggests McDonald. "Remember that you are not required to modify essential functions or create a new job if the employee cannot perform the functions of the original job."

Let' s take this scene one step further. What if Anna claims she can continue to do her job but starts expressing increasingly severe symptoms, such as stopping her work and rubbing her wrists, and telling co-workers she is in severe pain. At what point should you step in and suggest action?

We ran this one by attorney Phelan. "Even though you are not legally required to take action, it may be helpful for you to figure out what may be causing this," says Phelan. If the pain is work-related, then it would be short-sighted to avoid taking action that would sidestep workers comp claim down the road, or having the situation deteriorate into a real disability. Get the individual involved and come up with solution. Can you do something to modify the way the equipment is set up?" It is also usually a good idea to ask "Is there something we can do to help you do your job?"

It is not necessarily a risk, says Phelan, for you to tell the employee "I am not a doctor; it would probably would be better for you to contact a doctor." In this case, you are not admitting that you perceive the individual to have a disability. You are simply responding to her statements about physical pain.

What would be risky, says Phelan, is to say something like: "You can't do this job anymore. Your condition is only going to get worse so we are firing you." That statement is dangerous for two reasons. First, it shows that you perceive the employee to have a disability. Second, it shows that you have not attempted to accommodate the disability.

Situation 4: Sam, one of your long-time top quality workers, has recently been arriving late and acting withdrawn from other workers. You feel he may be experiencing psychological difficulties. What should you do?

You decide to:

A. Offer to be Sam's sounding board for any problems he may be having.

B. Treat Sam' s lateness strictly as a performance problem and institute your normal disciplinary procedures.

C. Ask Sam's co-workers if they know of anything troubling Sam.

The correct answer is "B." Sam has

violated your workplace rule that everyone must arrive on time. "Treat Sam's lateness as a performance problem," says Ann Reesman, general counsel at the Equal Employment Advisory Council, a Washington, D.C.,-based association of over 300 employers organized for the purpose of promoting the elimination of workplace discrimination. You should call Sam to your office and inform him that he has violated your lateness rules. Institute the same disciplinary action that you would use on any other employee. Says Reesman: "Don't assume that Sam has a disability. You're an employer, not a doctor."

Asking co-workers for information could spark a defamation lawsuit.

Situation 5: Jim is caught drinking on the job.

You decide to:

A. Terminate Jim for violating your policy against imbibing alcohol in the work place.

B. Ask Jim if he suffers from alcoholism, a disability which is protected by the ADA. Provide time for rehabilitative medical treatment if he says yes.

C. Ask Jim to explain why he violated your rules, to see if he volunteers the fact that he is an alcoholic.

Avoid asking "Are you an alcoholic?" If you need to discipline Jim later, such a question can be seen as evidence that you perceived Jim to have a disability. Instead, ask Jim questions that give him the opportunity to volunteer information. For example: "You know we have a zero tolerance policy against drinking on the job. Why did you do this?"

Thus, "C" is the best response in this situation.

Why not just fire Jim at once?

"Under the law if Jim has not come to you and said he has a disability in the form of alcoholism, then you are free to terminate him for drinking on

Who is disabled?

The Americans with Disabilities Act (ADA) protects individuals afflicted by:

- Deafness
- Blindness
- Wheelchair use
- Epilepsy
- Mental illness/depression
- Diabetes
- Cancer
- Heart disease
- Learning disabilities
- AIDS/HIV
- Recovering alcoholism
- Recovering drug abuse
- Multiple sclerosis
- Bad backs

Conditions Specifically Excluded by the Act:

- Kleptomania
- Pyromania
- Psychoactive substance abuse disorders
- Homosexuality
- Transvestism
- Voyeurism

The act also protects an individual who is "perceived" to have a disability, even if the person is not actually disabled. Additionally, you may not take adverse action against a person because he has a disabled relative (and you believe the employee will spend too much time taking care of the relative, for example.)

In order to be protected by the ADA, the individual must be able to perform the "essential functions" of a job. To help him do so, you are required to provide "reasonable accommodations" which do not pose "undue hardship" on your business.

-Source: EEOC.

the job," says Lawrence R. Levin, a partner at Levin & Funkhouser, Chicago. "But if you want to have a policy intended to help your people-and you want those people to feel part of a team, it is useful to give a person with an alcohol problem the opportunity to make that fact clear."

If Jim says he is an alcoholic, you can move on to the next step. Levin suggests being very straightforward and direct, with words such as these: "For the benefit of you and our company we want to keep you as employee. If you are going to remain you have to agree immediately to go into a rehabilitation program to overcome your problem and get you to a point where you are able to handle the issue you have with alcohol consumption. If you complete that program and abide by it then we will put all of this behind us. If on the other hand you are not willing to solve this problem, then we will have to terminate you."

Have Jim visit a doctor to certify he is an alcoholic, and have the doctor suggest the best rehabilitation program.

Situation 6: Sarah is exhibiting increasingly bizarre behavior that leads to fears of violence.

You decide to:

A. Fire Sarah.

B. Move Sarah to another job where she is not in contact with people.

C. Suspend Sarah and require her to see a psychiatrist, and to bring back a certificate that she is fit to work.

It's vital to learn how to tackle employees like Sarah. Emotional and psychological impairments accounted for 15 percent of discrimination complaints filed with the Equal Employment Opportunity Commission (EEOC) last year. That was up from nine percent five years earlier.

But these cases require tough judgment calls, according to Robert J. Nobile, a partner with the New York office of Winston & Strawn: "Which claim do you want to risk: disability discrimination from the terminated employee, or wrongful death from the estates of the four or five dead former employees?" In cases where the employee represents a threat to co-workers, the prudent employer will often take the risk of the discrimination lawsuit.

In the real-world event upon which our opening story was based, Nobile barred the woman from the office, put her on leave with pay, and required her to see a psychiatrist. If the psychiatrist were to say she was fit for work, she would be allowed back into the office.

The woman refused to visit the psychiatrist and sued the company for taking adverse action against her because of a perceived disability. Although she lost her case, it was an expensive one for the employer.

A key point here is that the ADA allows a "direct threat defense" for terminating an individual whom you perceive to have a disability. It is up to

you to demonstrate the threat.

Situation 7: Allan presents you with a doctor's note that says he needs every Monday and Friday off to attend to a medical condition.

You decide to:

A. Challenge Allan's doctor to explain the designated schedule.

B. Grant Allan's request.

C. Terminate Allan.

While you must honor genuine requests for accommodations, you are not completely helpless. "If an employee provides a doctor's note that doesn't make sense, you can question it," says Christopher Bell, an attorney formerly with the EEOC and who is now managing partner with the Minneapolis office of Jackson, Lewis, Schnitzler & Krupman. "For example, you may wonder why a psychological condition would keep someone from working Monday's and Friday's? You have a right to get more medical information to see if the person has a legitimate psychological condition and whether the accommodation medically necessary.

Suggests Bell: "Ask the doctor: Allan wanted to work Monday's a Friday's, would there be a medic reason for you to tell him not to do so?"

The ADA also allows you to get second medical opinion when y question the decision of one doctor.

As we have seen from the scenar in this article, the ADA preser employees with "gray area" situatior Many cases will be so ambiguous th employers must make judgment ca and hope for the best.

While it's costly to defend agai discrimination lawsuits, there is so good news for employers who try to the right thing. "Many court decisic have supported employees who sh they have made good faith efforts," sa Wendy E. Parmet, professor of law Northeastern Law School in Bost "When businesses lose disabili discrimination cases, you often see set of facts that show the employers not even try to work with their disab employees." □

How a "zero tolerance policy" helps

Establishing a "zero tolerand policy" can go a long way towa avoiding legal liability from AD lawsuits, according to Robert Nobile, a partner with the New Yor office of Winston & Strawn.

The policy prohibits inappropr ate conduct in the workplace. Thr is defined as abusive, harassing, c intimidating manner. It als prohibits violence or threats c violence.

"This policy sends a message t employees that the company will nc tolerate any form of offensiv behavior," says Nobile.

With such a policy in place, it i much more difficult for someone t bring a disability lawsuit fo adverse employment action. If yo discipline an employee for threaten ing a co-worker, for example, th disciplined employee may try to sa you disciplined him because yo thought he was mentally ill. But yo can point to your zero toleranc policy as the real reason, and sho that it was used to discipline other as well.

Key point: A "zero toleranc policy" does not require that a employee be discharged for viola tions — only that appropriate progressive discipline is taken.

New Equipment

SATCOM

You've got e-mail

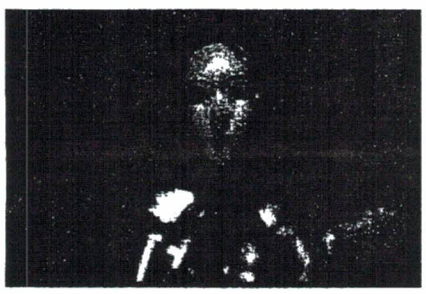
plugging the shipping industry into the Internet via satcom

One of the most exciting developments unveiled at last month's Seatrade Cruise Shipping Convention was a turnkey internet access package for cruise ships. Demonstrated by Digital Seas International, Inc., New York, and Maritime Telecommunications Network, a subsidiary of ICG Satellite Services, Inc., Miami, the package allows cruise lines to offer passengers the opportunity to get on line either from an Internet Cafe, or from their cabins.

Until now, plugging ships into the World Wide Web has not been a cost-effective proposition, because of the vast amount of data involved in downloading from many websites.

MTN is the leading provider of C-band voice, fax and data communications to the cruise industry, the U.S. Navy and to offshore oil and gas platforms. It also provides ship-to-shore live video and radio broadcast capabilities in C- or Ku-band. It is C-band (which is not to be confused with Inmarsat-C) that is being used to deliver the Internet Cafe capability to cruise ships.

C- and Ku-bands are used by international broadcasting and telecommunications companies for high-bandwidth products such as live broadcasts of sports events. In simple terms, they are a lot beefier than than the bandwidths used by Inmarsat, whose satellites still carry the largest share of day-to-day marine satcom traffic. Though C- and Ku-bands offer far more capabilities than Inmarsat bands, the downside is that they require appropriate shipboard installations ... and these carry a hefty price tag: around $300,000. Nonetheless, using C-band already makes commercial sense for vessels such as cruise liners, geophysical survey ships and aircraft carriers.



Digital Seas' genie Sandy will welcome cruise ship passengers to the World Wide Web. For most ships, though, internet access is limited to e-mail, which is now competing strongly against the old-style telex

ICO—one of the newest entrants in the satcom market—is deploying a constellation of MEO (medium earth orbit) satellites. Headed by former Inmarsat head Olof Lundberg, ICO has signed an agreement with Rydex to offer value-added services, such as e-mail, to maritime customers

For the moment, the internet cafe demonstrated in Miami is a highly desirable addition to the range of passenger facilities available to cruise lines competing to give their guests ever broader entertainment choices. Not-so-longer-term, it demonstrates a technology that could be used to plug ships into corporate intranets. At that point, we really would be seeing the ship as a truly integrated part of the overall corporate management structure.

This, of course, is something that has been much discussed ever since satcom made it possible to just pick up the phone and call the office. Since then, a vast range of ship/shore communications and data transfer capabilities have remained open, with World Wide Web access remaining a sort of "last frontier."

Before getting too carried away with all this, a reality check may be

Rush for Inmarsat-C installations in response to GMDSS deadline

The February 1, 1999 deadline for compliance with GMDSS (Global Maritime Distress and Safety System) requirements found thousands of ships still not fitted with GMDSS installations. According to Trimble Navigation, Ltd., Sunnyvale, Calif., there has been a "frenzy" of buying and installation activity by owners playing catch up. Some flag administrations have reportedly been giving waivers to complete compliance for ships that have GMDSS compliant Inmarsat-C and EPIRB installations—putting more pressure on suppliers of these particular items.

Trimble Navigation says the rush to install equipment during a brief port turn round has favored its compact Trimble Sentinel system, with Inmarsat-C transceiver, computer and GPS integrated into a single unit.

Inmarsat-C is a key element of GMDSS. It provides global communications for routine two-way messaging, two-way distress messaging, distress alerting and reception of SafetyNET broadcast messages. A number of IMO resolutions have taken effect in recent years changing Inmarsat C requirements and equipment meeting the new Inmarsat C system definition has greatly improved reliability and features that assure its availability in an emergency.

IMO Resolution A.807 (19) provides for Distress Alerts to be sent by pressing dedicated distress buttons only. Distress Alerts contain the Inmarsat-c ship earth station identity, the ship's position, the type of emergency (optional) and time and date when the alert was sent. Distress Priority Messages are free form text messages created by the ship's staff describing the nature of an emergency. Both Distress Alerts and Distress Priority Messages are routed directly to a Rescue Coordination Center from an Inmarsat land earth station. The same IMO resolution requires the ability to generate a Distress Alert both from the position at which the ship is normally navigated and at least one other location.

There must be provision for automatic and manual input of position to the Inmarsat-C equipment. Position information is stored in the equipment's Distress Alert memory to be included in the Distress Alert message if sent. The information is also used to filter SafetyNET messages.

A side effect of the boost given Inmarsat-C by the GMDSS requirement is a jump in Internet e-mail usage by ships. Ships can, of course, use Inmarsat-C to reach fax machines, telex addresses or a mail box at an Inmarsat land earth station. But Inmarsat service providers have greatly expanded their capability for Internet e-mail processing and the system is far more user friendly than it was just a few years ago.

Circle 120

salutary. As we noted last month (*MARINE LOG*, March 1999, p.51) a recent survey of BIMCO members showed that 30% of shipping companies are small, operating less than five ships; 48% of companies have fleets of six to 20 ships; only 22% of companies have fleets of 21 ships or more. Of the small companies, only 25% had shipboard computers linked to the home office, for medium sized companies that rose to 53%, and for large companies the level was 70%.

Looking ahead, the requirements of both the ISM Code and the revised STCW convention can only add to the management load on both ship and shore staffs. It's an indisputable fact that most companies have been forced by competition to cut shipboard staff to the legal minimum. Something else we noted from the BIMCO survey in last month's issue, was that shore staffs have gotten pretty skeletal, too. For many companies, the answer is going to be to seek third party management. But whether a ship is managed from the owner's office or the ship management company's office, it seems very evident that we will see more reliance on IT.

The good news in all this is that the options for communicating and data-sharing between ship and shore are getting broader and more capable. Competition is also growing, so affordability should be less of an issue.

One of the fastest growing providers of satcom bandwidth, Stratos, was started by entrepreneur Derrick Rowe as New East Wireless Telecomm. New East acquired IDB Mobile, a company that spurred competition in the maritime satcom market by buying Inmarsat satellite minutes from Comsat (which was legally obligated to sell them) then resell those minutes at prices lower than Comsat's. After the IDB acquisition, New East became Stratos and

Boatracs offers crew e-mail and more

Introduced recently by Boatracs, San Diego, Calif. and Transcommunications, Inc., BoatCOMM is a pre-paid service providing crew members with e-mail, discounted long distance phone rates and voice mail capabilities. The major benefit: it allows crew members to use the Boatracs system and to be billed separately. Boatracs' fleet customers can offer the services to crew independently from their own communications.

Boatcomm allows Internet e-mail to be sent and received directly from the vessel using the OmniTravs mobile communications system. Another Boatcomm feature, P/E-mail, is a preprogrammed e-mail message that can be sent directly to the vessel via a touch tone phone, allowing messages to be sent to a crew member when a computer or other e-mail device is not accessible.

BOATRACS/INMARSAT

Boatracs now provides complete Inmarsat data solutions including hardware, software and service. Hardware is provided by various manufacturers. The system allows data to be sent and received from vessels, office locations and any other registered Internet e-mail address. Positioning information is also sent from the GPS system resident in the shipboard equipment. Boatracs is acting as a service provider offering Inmarsat and telecommunications services via British Telecom's worldwide network and will provide "extremely competitive pricing."

Circle 121

subsequent acquisitions have included Teleglobe's mobile satellite business (and status as Inmarsat signatory) and the marine business of American Mobile Satellite Corporation, which operates a geostationary satellite with a "footprint" covering North America and a lot of surrounding ocean. Teleglobe, meantime, has a 35% interest in Orbcomm, a provider of LEO (low-earth orbit) satcom services. Stratos also is a distributor for services offered by two Iridium LEO "gateway" companies.

Put simply, the corporate philosophy seems to be to offer satcom services over just about anything that's up there and to attract customers with whatever communications package best meets their needs.

For most marine customers, most of the time, the satcom service of choice (or necessity) will be Inmarsat.

Inmarsat is an intergovernmental agency that's turning itself into a commercial enterprise. The good news for the consumer is that this transition is likely to sharpen the competition between Inmarsat service providers.

E-MAIL

The need for GMDSS compliance has brought Inmarsat C terminals aboard most ships. Inmarsat is now actively encouraging shipowners to use Inmarsat C's e-mail capability instead of telex for short messages. Short means short: less than one page of A4 text, with Inmarsat A or B recommended for longer messages or

Iridium phone can be docked in special module for easier shipboard use

those with file attachments. Inmarsat is also promoting the use of e-mail for shore-to-ship messages. At press time, around nine Inmarsat service providers were offering the service, while a slew of companies providing various communications packages for maritime users are promoting e-mail packages or add-ons to their existing products.

LEOS AND MEOS

Ever since Peter Arnett used an Inmarsat set up to report from Iraq in the Gulf War, people in Inmarsat's London headquarters have had the idea that there are hotter markets out there than the shipping community.

Now Inmarsat will compete for those markets against companies such as Orbcomm and Iridium, with their constellation of LEO (low earth orbit) satellites and, ironically, ICO with its MEO (medium earth orbit) constellation, which becomes operational next year. ICO was spun-off from Inmarsat in 1995 and is headed up by former Inmarsat chief Olof Lundberg.

The LEO and MEO companies offer a basic service where a handheld phone can be used to access the worldwide telecommunications network either through a cellular network or, where cellular is not available, a satellite. The LEO and MEO satcom services are taking the marine market very seriously. At last month's Cruise Shipping, for example, we saw an example of an Iridium phone suitable for bulkhead mounting—which should address some doubters' niggles about standing on a bridge wing in an icy gale with a tiny little satellite phone.

Inmarsat spin-off ICO plans voice, fax, data and messaging services including call-waiting, call-forwarding, voice mail, short messaging services and cellular access. "providing ships of all sizes with an economical and compact solution." These services "will be appropriate for trading/fishing ships, cruising/passenger ships and yachts and will be ideal replacements for traditional terrestrial services for medium and small ships. It will offer a range of maritime terminals and "straight forward end-to-end charges."

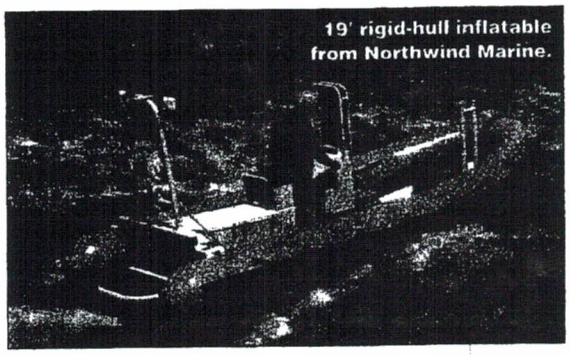
ICO has just signed a memorandum of understanding with Canada's Rydex that, it says, will allow its maritime distributors to offer "value-added communications services to end-users across a number of market sectors." Rydex maritime communications software products include applications for automatic data communication, e-mail and shipboard information technology support. Recently, too, ICO signed a contract with NERA for the delivery of handsets together with a marine communications terminal into which the handset can be mounted. **ML**

Northwind Marine is going to EXTREMES

Northwind Marine, Inc. has added a new line of 19' rigid-hull inflatables to its long list of aluminum workboats produced at the Seattle yard. The *EXTREME 19* was named for its intended firefighting and rescue missions in extreme rough water conditions. It was tested by a U. S. Navy Seal team.

The rigid hull features a 20° deep-V bottom structure with four longitudinal stringers and six transverse frames. The two watertight flotation compartments in the hull will allow the boat to stay afloat even with deflated tubes.

Wing Inflatables, Arcata, Calif., developed the boat's thermo-welded and machine-shaped tube system with 44-oz. industrial grade polyurethane. The tubes are attached with a rope bolt, which is a cord molded along the tube



19' rigid-hull inflatable from Northwind Marine.

Northwind Marine

side and attached through a slotted channel on the outside edge of the hull.

The tubes are also mechanically fastened to the inside of the hull.

"The tubes are coated on the bottom with Tuff-coat for abrasion resistance," said Northwind's president, Bruce Reagan. "In the stern, we have a second layer of material to take the high level of wear in that area. The polyurethane tubes have much higher abrasion and puncture resistance than either Hypalon or PVC and can withstand greater internal air pressure, although built-in relief valves eliminate any danger of bursting."

Outboard power options are available, but the standard propulsion system is a 6-cylinder, 175 hp Mercruiser Sport Jet capable of speeds over 40 mph. This gives the boat a running draft of only 5". Payload capacity is 1,450 lbs., or approximately 10 persons.

A Lake Tahoe, Calif., customer bought an *EXTREME 19* earlier this year to use as a high-speed fireboat. It was equipped with a firefighting package capable of pumping 1,000 gpm at 100 psi, and the boat's successful performance has prompted orders for two more.

A modified 17'×7'6" model was recently delivered to Holland-American Alaskan Cruises for use as a tender and scout boat aboard a new 112' catamaran. The Australian-built passenger vessel will make regular runs on the Yukon River between Eagle, Alaska, and Dawson, Yukon Territory.

To help avoid hitting any rocks and shoals during the 1,400-mile trip up the river at 20 knots, the *EXTREME* will run ahead and scout the deepest channel.

"This boat differs from the 19-footer in that it has a deeper, 26-degree V-bottom," said Reagan, "and the inflated collars have more of a taper forward to compensate for the proportionately higher bow of the aluminum hull.

"As a result, when coming down hard in rough surf, the bow has more buoyancy and lift before the tubes come in contact with the water." ■

— C.B. Summers

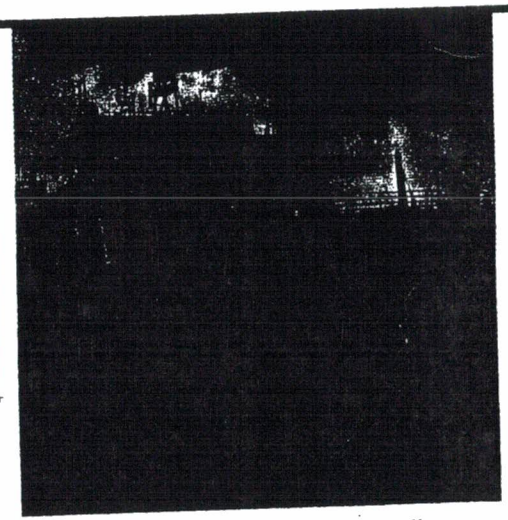
CIRCLE 225 ON READER SERVICE CARD

Schlumberger Launches New Generation Seismic Vessel

New technology allows for greater coverage with one ship

Schlumberger Oilfield Services recently launched the Geco Eagle, the first of a new generation of integrated seismic recording vessels. The launch follows an extensive program of upgrades to an existing fleet that has resulted in Geco-Prakla operating most of the world's highest capacity 3D seismic vessels.

Schlumberger has developed proprietary in-sea equipment that is designed to outperform other commercially available systems. In particular, lightweight towing leads and new streamer designs, combined with Monowing(a) II deflector technology, have provided recording spreads over 1,400 m wide without the aid of additional vessels. With 20 towing points and up to 120 km of seismic streamer, the vessel will have double the capacity of any other seismic vessel afloat.



Geco Eagle design retains a relatively conventional hull, but a new ultrawide back deck wing, based on a design used by aircraft carriers, provides space for storage and deployment of large spreads of in-sea seismic recording equipment.

Geco Eagle is designed to remain at sea for up to five years without a port call. The vessel's first assignment is offshore Brazil.

Going Deeper More Efficiently?

Profile Technologies filed a provisional patent application with the U.S. Patent Office which extends its technology into the realm of oil exploration. According to CEO **G.L. Scott**, "This new patent application expands the reach of our technology

■ New ballast water technology tested

Velox Technology and the Norwegian company Tech-Trade will stage tests of a ballast water treatment system in Vancouver harbor, B.C., in mid-April.

The OptiMar Ballast Water Management System uses two key processes— a centrifugal system that separates sediments and other particles, and ultraviolet light treatment that kills any organisms remaining in the clear water.

The companies' focus is on developing a shipboard system that could be installed or retrofitted downstream from the ballast water pump on any vessel. Kempton said the developers are aiming for a 100 percent "kill rate" in the treatment process.

The test is particularly significant because, while some groups have suggested that ballast water exchanges do not remove a high enough percentage of organisms, so far there have been only vague suggestions as to how this might be accomplished.

Management

Leadership in the New Millennium

Leadership in the new millennium will pose greater challenges than ever before. Science and technology have torn down the barriers of distance and time. Increasing age, gender and ethnic diversity provide a rich environment for new ideas and unlimited opportunities. Conversely, it is also a time of unprecedented uncertainty. Successful systems and policies of the past are no longer even acceptable. Members, employees, customers are more demanding than ever before. Providing opportunities for personal as well as professional growth are required. Open communication and unencumbered freedom are considered ahead of compensation and benefits when selecting allegiance.

"Whatever you look for you will find and whatever you find will continue."

What will give us the competitive edge for the commitments of time and money from customers? Will the pursuit of cerebral and technological superiority bring us out ahead of the pack? Or is there a price to be paid in the exclusive pursuit of the newest and latest? It seems in the process of filling our heads; many are draining their hearts. Experts predict that more than 18 million Americans will experience some sort of depressive disorder in the next year. Depression has been identified worldwide as the number 4-world health threat. Is this the inevitable result of our current evolution or simply an opportunity to evaluate our focus? What can we do within our businesses, families and communities to stem this alarming tide? Peter Kramer, in the book listening to Prozac said: *What changes in response to the spirit of your times is the information to which we attend."*

Unfortunately the information that seems to float to the top in our media, break rooms and minds is dis-information. We are a culture with rampant ADD "Attention Discontent Disorder". I believe it is our responsibility as leaders, managers, executives, family and community members to help those we touch focus on the opportunities instead of the obstacles. We need to train not just for technical competence, but personal mastery. To help people not just earn their livings, but enjoy their lives. Cynicism, apathy, and indifference are not a result of the external world, but of our internal focus. We can enjoy the allegiance of all we touch by helping them develop the tools not just to do the job, but to enjoy the experience.

Don't Know

How do we help people enjoy the process? First it is by letting go of our old ways of seeing our jobs, our employees, members, families, but most of all ourselves. Dee Hock, the creator of Visa, said *"the problem is never how to get new, innovative thoughts into your mind, but how to get old ones out."* Allow yourself not to know. Listening is an important part of all our jobs, yet most grade schoolers are better at it than we. They're better because they don't have to know. They don't have to be right. Somewhere in life many of us give up the desire to be happy for the need to be right. This might also help to account for the reason children are so much better at participation than adults. A room full of children asked for volunteers would see every hand in the air, while the same room packed with adults would join in an examination of their belly buttons. Choose not to know and participate like children.

Don't Conform

Earl Nightingale said *"The opposite of courage is not cowardice, it is conformity."* It is easy and safe to conform but the price of peer acceptance is mediocrity. The price of mediocrity as a business is death. Ask yourself what is it that you or your organization does that makes you memorable.

Be Surprising

Don't just do what people expect. Doing just what people expect whether it is for your employees, members, spouses, children or bosses is boring. It doesn't make you any different, and it doesn't show people you care. Sixty-seven persent of the reason you lose people is just because they think you don't care. Surprise people, show them you care. Earlier today we called our phone company to complain about a billing error. The first person we talked to was a bureaucrat; he continued to regurgitate the same thing over and over without ever really listening. Fed up, we finally asked to be transferred. I am embarrassed to say I carried my attitude over to this new representative. When she finally recognized the error, she resolved it immediately. The surprise came when after noticing all our international calls, she signed us up for a super international saving program and adjusted $57.00 off that bill, even though we had not been enrolled in that service! What started out to be a negative experience turned out to be a wonderful experience for both of us. She graciously accepted my apology and can look forward to my loyalty years to come.

Hire Unreasonable People

Many people seem to have given up on the idea that work can and should be fun. In fact it often seems their life's mission is to prove to others this very fact. Find those

people whose past performance demonstrates they like to help people.

Fire Reasonable People

Get rid of all those people who have become experts at all the things you can't do. Don't allow the cancer of negativity to eat away at the spirit of enthusiasm you are trying to create. In their book Built to Last, James C. Collins and Jerry Porras found that one of the common denominators in very successful companies is that they create such a strong and cohesive culture that *"you will either fit and flourish or be expunged like a virus"*. Don't tolerate mediocrity and, even more so, those terrorists who snipe every new and creative idea.

Provide Unreasonable Training

Not just the *"how tos"* of the business or association, but help people want to. Help develop a passion for what they do. John Scherer, a friend, colleague, and internationally recognized organizational consultant, would call this TOV. TOV is a word from the Old Testament used to represent the YESSS feeling we have when our hearts are overflowing with enthusiasm. Max Dupree used what he called *"Tribal Story Telling"* to share his belief system in his book Leadership is an Art. The Customer Comes Second by Hal Rosenbluth is also a wonderful resource for unreasonable training.

Give Unreasonable Freedom

The biggest obstacle to successful service in almost every business I have seen is management. Managers, who think their job is to make every decision, define every process and control every situation. They are afraid to get out of the way and let, in fact encourage, the front line to not just do their job, but to "Astonish" people. According to a study done by Wilson Learning, 70% of customers are in the zone of indifference. They are ready to leave as soon as something better comes along. Give people the freedom, tools, training and opportunity to turn these people into advocates.

Encourage Unreasonable Goals

Despite every effort to hire, train and empower, most people have been conditioned to fear failure and to seek the pathway of least resistance. If you want people to do exceptional things, you must provide **Exceptional** encouragement. A study by Harvard University and the Dale Carnegie foundation determined that 75-85% of the reason we get good results is through creating desirable consequences. Focus your energy on celebrating not just the wins, but every effort in the process. Use every opportunity to make people feel like heroes. Ernest Becker wrote in The Denial of Death: *We have to feel and believe that what we're doing is truly heroic, timeless and supremely meaningful. The crisis in modern society is that people no longer feel heroic."*

"Somewhere in life many of [illegible] give up the [illegible] be happy [illegible] need to be right."

Make More Mistakes

Tom Peters says, "Fail Forward Fast". This is true not just for us, but for everyone we work with. Everyone needs the opportunity to make mistakes and be praised for the effort. Remember what it was like teaching your child to walk; you praised every attempt-stumbles, falls and all. Yet with adults, many feel their job is to focus on and eliminate mistakes. The fact is whatever you look for you will find and whatever you find, will continue. This is true with your customers, employees and even family. It is our job to focus, and to help others focus on celebrating what is right, not discouraging what is wrong.

Recognize, Recognize, Recognize

William James has often been called the father of American Psychology. He said, *"The deepest craving in human nature is the craving to be appreciated."* Steven Covey says a one to one; one positive to one negative, relationship with someone else is a negative relationship. Two positives for every one negative is a neutral relationship, it has no emotional power. It takes three positives for every one negative to have a positive relationship with someone else. Do we spend three fourths of our time catching people doing things well?

Have Fun

We do everything better when we are having fun. We are more creative, have more energy, experience less stress, we are even healthier, yet few seem to make it a priority. Examples of successful organizations who make fun a priority, like Southwest Airlines, abound. The link between happy employees (or members) and successful organization is undeniable. Find ways to make your organization more fun than anyone else's. Use resources like Managing to Have Fun by Matt Weinstein or Heart at Work by Jack Canfield and Jacqueline Miller. Ask your staff to develop a "Spirit Committee"; make it as high a priority as everything else you do. Work can and should be fun. Most of us will work more than 83,000 hours in our life times, and most seem to spend much of that time reasonably close to miserable. Unfortunately, our memory is very "state specific". In other words, when we are miserable, we tend to only remember miserable things and the cycle begins. Break the cycle by purposely encouraging fun feeling. We don't have to be solemn to be serious.

Use Fun as your secret weapon for growing your business, retaining staff and enhancing friendships. Because as Clarence Darrow said, ***"When You lose the ability to laugh, you lose the ability to think."***

Randy Morgan is the Founder of "Morgan Systems Uninhibited." Headquartered in Boise, Idaho, Randy consults with organizations in the areas of customer service, leadership, and most of all fun. His most recent release is the "Attitudes for Astonishing Service" video series. Please contact Randy Morgan at P.O. Box 2133, Boise, Idaho 83701, Phone: 800-893-9002 or 208-853-3961, Fax: 208-853-2369, E-mail: randy.morgan@worldnet.att.net.

What do you think of this article?
Please circle on Bingo card
903 - Interesting
904 - Not Interesting

Misc.

Controlling Influence

Both electronic and pneumatic controls have a niche.

BY BOB GUSTAFSON, CORRESPONDENT

Sometimes the old way of doing things isn't so bad, at least not according to Ric Shrewsbury, vice president of Western Towboat Co. Inc.

"You know, the old direct-reversing engine was actually faster than manual-over-air controls that we have on some of our tugs today," said Shrewsbury. "It was just a question of going right into that gearbox. Once you got used to it, it was real fast."

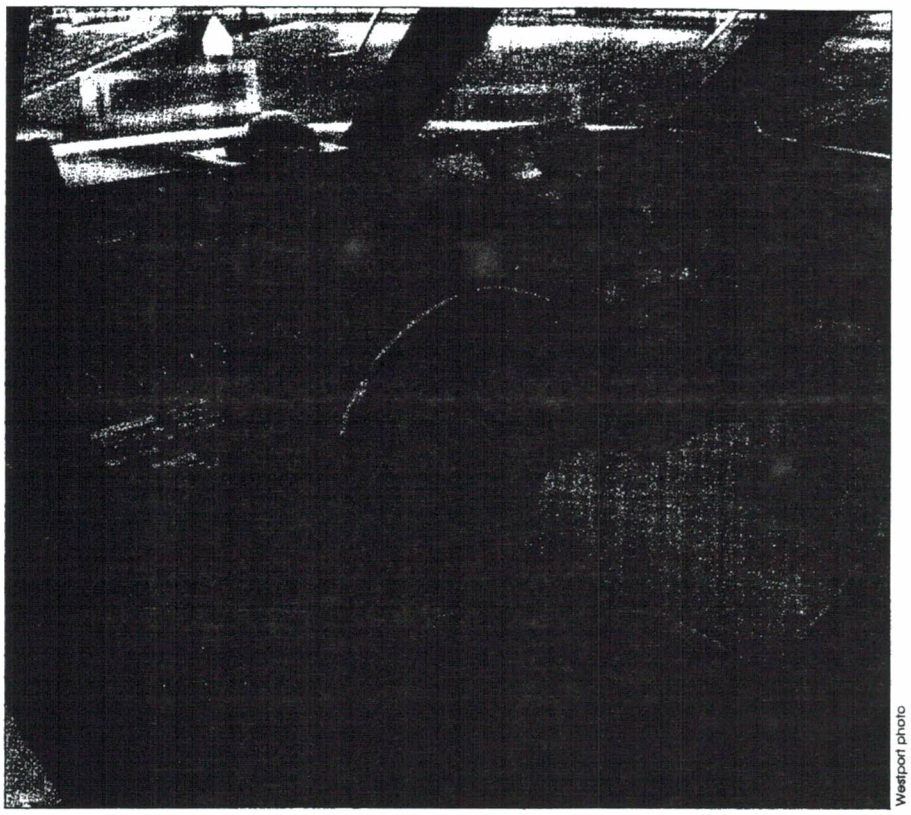
When asked why the direct-reversing engine is virtually extinct now, Shrewsbury replied, "The machinery was not as reliable as what we have now. With technology, you give up one thing to gain another."

Western Towboat is unusual in that the Seattle company builds its own tugs. Its first construction project was a 60-hp, 50-footer in 1948. Currently, they are working on a 110', 4,400 hp Z-drive.

Shrewsbury was quick to add that propulsion controls "will become more computerized and electronic" in the next few years. "You're already beginning to see propulsion and steering together on some of the boats," he said, referring to Z-drive controls.

With the old direct-reverse engines — as with current dedicated equipment — the engine controls served one function and one function only. Today, however, controls can be more multifunctional or integrated, especially electronic controls.

Tom Kobelt, vice president of Kobelt Manufacturing, Surrey, British Columbia, said his company is working with a group of naval architects in New Hampshire to "control boats, not just engines." Kobelt designs and manufactures a long line of electronic controls for everything from main propulsion and bow and sternthrusters to deck machinery.



Westport photo

Some say that all control systems will eventually be electronic. But others say there will always be a place for traditional pneumatic systems.

Kobelt said he sees "a lot more controls integration down the road; economics is going to push the drive toward electronics packages." But, he added, "Maintenance depends on someone who's comfortable and familiar with electronics and computers."

CONTROL IQ

"We had an interesting test when having to run from Hurricane Bonnie (August 1998)," said Don MacPherson, technical director for HydroComp Inc., Durham, N.H., the "group of naval architects" referred to by Tom Kobelt. "The fuel savings were very substantial, maybe a little too good, perhaps because initially nobody believed us."

MacPherson was talking about HydroComp's "Smart Engine," which they describe as a package of "intelligent voyage management and propulsion (control) systems." It provides data display and logging, automatic engine control, voyage management, and post-voyage analysis.

MacPherson said the Hurricane Bonnie test was run in conjunction with U.S. Coast Guard research and development in Connecticut. "Fortunately for us, the Coast Guard had their own independent measuring device, and they determined that our fuel readings were

realistic." He added that HydroComp spent a year testing Smart Engine with the Coast Guard.

In its simplest terms, Smart Engine collects data and uses it to control a vessel in the most efficient way possible, whether it means controlling and maintaining speed or controlling and maintaining rpm.

A variety of data including location from the vessel's GPS receiver, fuel consumption rate, and even controllable pitch propeller settings, are collected by a host computer. The system displays information in real time, identifies alarm conditions, monitors the status of a voyage, and logs data for future use. It also automatically manipulates the throttle to maintain target speeds or rpm.

"Smart Engine takes all this information and continues to learn, to decide and adapt," MacPherson said. "If on average we're a little slow, it boosts the throttle. It takes into consideration different environments and conditions like wind and current and reacts automatically."

MacPherson also noted that there are both economic and environmental benefits with Smart Engine. "With the Marine Mammal Act in effect, you have to maintain strict speeds and rpm. If you don't, it can be pretty expensive.

"It's a work in progress, and the potential is really exciting," he concluded.

Tammy Cannon, marketing manager for Mathers Controls, Burlington, Wash., said her company's state-of-the-art product, MasterCommand, has been built on the success of MicroCommand.

The latter, which was the company's first electronic control, was developed in 1987, a time when the comfort level with electronics was low. "People were kind of afraid that electronics and water didn't mix," said Cannon.

She described MasterCommand as "a lot more intelligent." Among the systems features are port and starboard propulsion control processors with built-in automatic redundant controls. "If one side fails, the other side will pick it up," Cannon said. And because the product is completely based on digital technology, "it can be hooked up to GPS," said Cannon. This feature makes MasterCommand "the ideal interface with dynamic positioning systems."

Mathers claims that MasterCommand is 20 percent faster than comparable pneumatic systems. And it incorporates a combination of automatic fail-safe backup, self-diagnostics, and digital technology "to keep the system performing under all operating conditions."

The system is sufficiently flexible so that it can operate with engines equipped with electronic, pneumatic or mechanical governors coupled to hydraulic or pneumatic clutches, and on reverse and reduction gears fitted with solenoid, pneumatic or mechanical selectors.

Cannon believes that in the next five years "all systems will be electronic. You'll be able to communicate purely

electronically right to the engine."

AIR HEADS

Not everyone has jumped on the electronic-control bandwagon. Gabe Centofanti, president of Centofanti Marine Systems, Clairton, Pa., said that no one should count out pneumatic and electropneumatic control systems just yet.

"A lot of operators are sold on air," said Centofanti. "Pneumatic controls are going to be around for a long time.

"Look at the rivers where there are close to 200 towboats all using air. It would take something drastic to change to electronics."

He said the switch could even work the other way around. "The owner of a boat with electronic controls came to us because the engine kept stalling out in certain situations. We installed pneumatic controls and the boat's working just fine."

Centofanti also noted that engineering improvements apply to pneumatics as well as electronics. "We've eliminated copper and replaced it with thermoplastic," he said, "and we're using fittings that don't require crimping, just like an O-ring seal. As more people learn what's now available in pneumatics, more people are going to go for them."

Centofanti believes that the choice of pneumatic or electronic controls has to do with the design of the boat and people who run it: "A lot of boat personnel are better fitted to run pneumatic controls. Detroit (Diesel) electronic control heads are great on a yacht, but people who like heavy brass, for example, will like pneumatic systems best."

The key to the future of the controls industry is flexibility, according to Gary Kaminski, Western Hemisphere sales manager for Morse Controls, Hudson, Ohio.

"Control manufacturers and steering manufacturers have to be flexible, look at boat structure, power, and then custom design," Kaminski said.

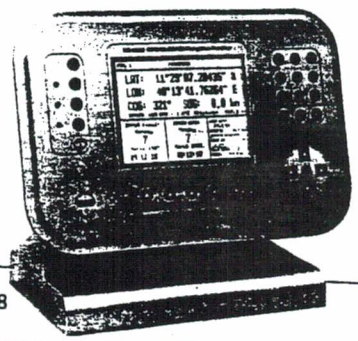
Rick Jameson, president of Control General Marine Controls, Schriever, La., agrees with the custom approach. "We custom design and build everything," he said. "When you come to us, we're going to provide you with what you need, not what we build."

The use of integrated controls might be fine for what he calls "landmark boats," but "most boats will continue to keep separate controls," he said. "It's what our customers want, and you have to remember integrated systems require a lot more sophistication on the part of the crew." In other words, sometimes the old way of doing things isn't so bad.

All in all, the modern mariner can select from a full spectrum of controls choices, from state-of-the-art integrated electronics to traditional pneumatics — and almost everything in between, except maybe direct-reversing engine gearboxes. ■

ILA demands confirmation of Loran extension

The International Loran Association (ILA) has urged the US Government to announce without further delay that the Loran positioning system will be continued. At its Annual General Meeting in December last year, it also re-affirmed its view that a complement to GPS is necessary, and that Loran is the system best to provide it.



◆ **MAN combines GPS and Glonass. But could Loran be the long-term GPS back-up?**

The future of Loran currently hangs in the balance. Although the US Department of Defence has tabled a decision to extend the Loran operation beyond 2000, the official announcement of that decision has yet to be made. In the meantime, projects such as Eurofix (Compuship August/Sept 1998) continue to demonstrate that use of Loran and GPS in concert can yield excellent performance at little additional cost.

According to the ILA, hybridised solutions like Eurofix offer unparalleled accuracy, availability, integrity and reliability in all applications. When Loran transmitters are synchronised to UTC, an integrated receiver can treat a Loran station as a "pseudo satellite," thereby greatly enhancing GPS availability and reliability.

ILA's call for clarification of the Loran situation comes at a time when civil users who have developed almost complete reliance on GPS and its differential derivatives are becoming concerned at the vulnerability of a "single-source" solution.

According to ILA, the characteristics of the Loran signal mean it is "simply not subject to the same vulnerabilities as GPS." ●

TAILOR-MADE FORECASTS

Routing services use their expertise and your electronics to send customized weather reports to your boat.

BY MICHAEL CROWLEY

When you are debating whether to prospect one more spot — several hours' steam away — or head for home, you probably rely on one of two methods for predicting the weather: your intuition, or an outside source.

With the intuitive method, you check which way the wind is blowing, glance at the barometer, look at the clouds and apply rules of thumb passed from one generation to the next.

With the second method, weather information from an outside source is electronically delivered and spares you the burden of having to depend on you and your ancestors' judgment.

Thanks to radio airwaves and satellite transmissions, you can receive weather warnings, forecasts and weather maps. Modern technology can deliver fascinating images to your wheelhouse.

The questions are, do you have the expertise to interpret them? How much of the information applies to your situation?

And while radio reports, weather maps and satellite images contain the best available information, they are compiled with large areas in mind.

As a result, the conditions they describe may not pertain to where you are or where you're going.

That's where routing services come in. Routing services offer commercial fishermen specific weather analysis for whatever track they want to take, either going to or coming from the fishing grounds, and the weather patterns that might hit once they're on the grounds.

In addition, they are compiled by people with a lot more experience in analyzing weather patterns than the average fisherman has.

HEAVY WEATHER is a fact of life for fishermen, but a good understanding of developing weather fronts may help you avoid the worst of the storms.

"We give a constant weather forecast that's tailored to an individual's needs," says Ken McKinley with Locus Weather in Camden, Maine. By contrast, he says weather reports issued by the National Oceanic and Atmospheric Administration are very general and "designed to appeal to as many people as possible."

Government weather forecasts are "very broad-based," agrees Bob Rice, whose been telling about weather patterns for 4 years and runs Weather Window, a rou ing service in Wolfeboro, N.H. "It coul be the same forecast for waters betwee Montauk [N.Y.] and Cape Race [New foundland]," says Rice.

PLOTTING WEATHER

For the most part, the trend in marine electronics toward integrating different functions on a single screen — radar and GPS, for instance — hasn't been much help if you wanted to know which way the wind was going to blow.

An exception to this, however, is a software package put out by MaxSea that allows weather data to be overlaid on both raster and vector charts.

Data can be sent via e-mail or single sideband, and all that's needed to present it is a PC or Mac, MaxSea software and, of course, the electronic-chart display.

Meteorological data is converted to a GRIB file, which is a standard format for data and allows for fairly fast transmission of digital information. Onboard the boat, the MaxSea Fishing or MaxSea Fishing Pro software transfers the weather information onto the electronic chart along with a grid pattern.

MaxSea software allows wind bars, with direction and velocity, on a 1-degree (about 60 nautical miles)-by-1-degree grid, says Fred Prior with NetSea in Pocasset, Mass., MaxSea's U.S. representative. The exception is in Alaskan waters, where a 12-mile-by-12-mile grid is available.

In either case, the grids also display barometric pressures, swell height and direction.

Information is updated daily in either configuration. Data from the National Oceanographic and Atmospheric Administration or from a private weather service can be used.

The basic unit is MaxSea Fishing, which has a single GPS input and costs $995. MaxSea Fishing Pro, which can also be used with loran TDs, has other tracking and location-marking functions and costs $3,995.

Color SSB transmission

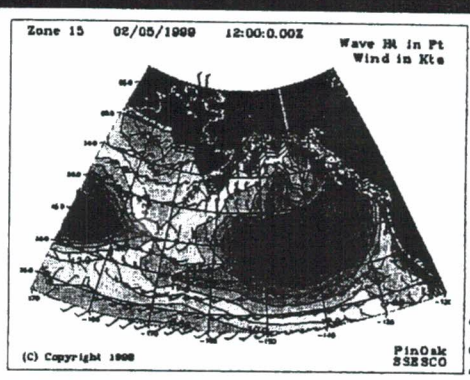
If you rely on a single-sideband radio to obtain weather information, you can expand your capabilities through the services of PinOak Digital, a fairly new company that provides economical digital-data transmission, including 16-color NOAA weather maps. Weather maps that private routing companies have generated can also be sent.

PinOak Digital can send the same weather information as a satellite-based system, but at much less cost, says Peter Detwiler, the company's founder. Charts can be updated every six hours.

The secret to the PinOak Digital system is a software package that "provides the power of a huge transmission and antenna system through the software and microprocessors," Detwiler says. "With typically a 150-watt radio, you get the throughput of a 6,800 watt radio," he says.

Key to the increased transmission and reception capabilities is a computer code, called code gain, which tells the microprocessor to ignore atmospheric noise, discard man-made noise and pickup only a code that turns characters into symbols.

Because it varies, Detwiler couldn't give a specific price for using the system, but he estimates that it is 90 percent less than satellite transmission. PinOak Digital gets more data out of software and microprocessors through high frequency; consequently, Detwiler says, "we don't have the huge infrastructure or satellites all over the world."

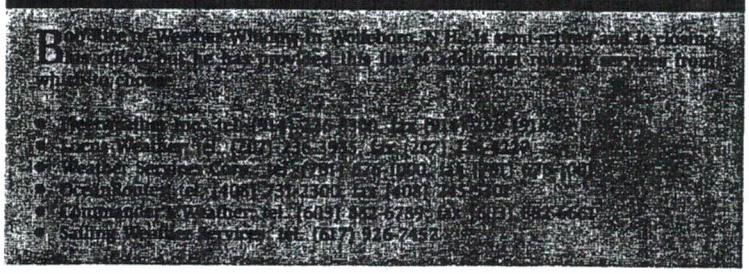


IN THE NORTH PACIFIC this is the weather map you'd get from PinOak, only in color, via your SSB.

The cost of the PinOak Digital system is $1,720, which includes modem, cabling and software.

Of course, you need a single-sideband radio and computer onboard. — *M.C.*

A ROUTING-SERVICE DIRECTORY



"They don't have the time to break the forecast up into different sectors. We do," he says. "Georges Bank is different from Scotia Shelf. We provide the detail to each specific area."

Most routing services spend much of their time providing information to yacht delivery crews, ocean racers and sailors making transoceanic passages, so the services work with weather patterns anywhere in the world.

It's essential that providers of custom weather service for fishermen understand the fishing operation and particularly, the boat. "That way," says Rice, "we can detail our predictions for when the boat is empty or loaded or in between. The thresholds change and routing companies can adapt to the changing thresholds, whereas the government sector can't."

"Basically," adds McKinley, "we need to know as much as possible."

Custom weather companies would work very well with commercial fishing operations when boats are part of a quota system or days-at-sea management programs. "There's no point in going out and getting beaten up on those days you have to fish," says Rice.

If a captain is debating whether to fish a few more days or run in to catch a price, a custom weather service would tell him what the weather conditions for each option is likely to be.

The same holds true for a skipper in the Aleutians trying to decide whether to sell in Kodiak, Seward, Ketchikan or Seattle.

"There's the flexibility to do those things as long as there's good communications with the boat. The forecasting can be initiated anytime, whenever they require it," says Rice.

The information can be sent to a vessel by single-sideband, fax or e-mail transmitted via satellites.

And land-based faxes, McKinley notes, work well as a form of communication if the fisherman goes out every day.

The fisherman gets weather maps for the forecast period, text describing any fronts and how they are expected to change, and wind, sea state and, possibly, sea temperature reports.

(However, even the best meteorologists can goof, so some services will provide an error factor to help you judge whether the forecast is going awry and what is likely to happen when it does.)

The cost for these services varies with a fisherman's needs and where he will be fishing. "There's not much that can be done for less than $100 per day," says Rice. "Though if there's a long-term commitment with a retainer, then that price can be cut." NF

For contact information on companies mentioned in this article, see page 65.

Continued from page 23

peeled shrimp overseas.

"Naturally, the processor wants a stream of product coming in over the longest period of time to take advantage of the market," Saunders says.

Does the fleet accept this arrangement?

"If it keeps the price up, if it keeps the price stable, yes," Saunders says.

"Without the processors we can't move any volume of shrimp," Goethel asserts.

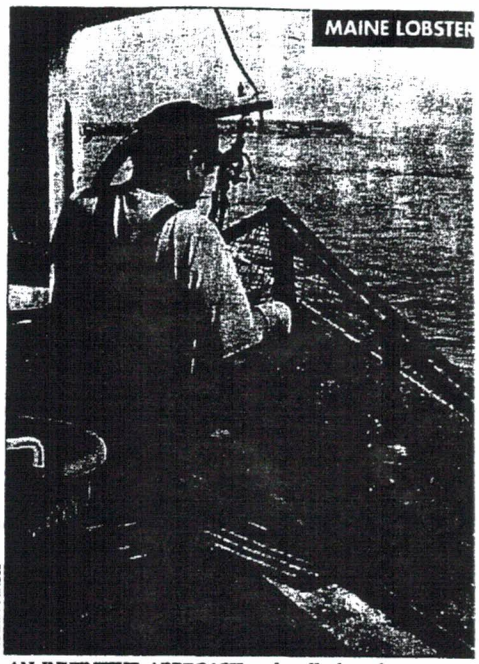
Again, it's a fine line. Will the demands of the market mesh with the demands of the resource? In California, as long as managers remain flexible and responsive to both sets of demands, both the resource and the market have been satisfied.

"During environmental down-times like El Niño [when returns shrink and so do the fish], quotas are low enough to ensure that the run will survive," says Ernie Koepf, who's fished herring since 1977.

Adds Joe Garofalo, manager of Sea-K Fish Co. in Sausalito, "In those bad times, a low extraction rate is better than none, and, thanks to steady, conservative management, it allows us to maintain some semblance of a fishery. That helps keep interest in the market place by demonstrating that the fishery hasn't collapsed."

It's a tightrope walk with a large-mesh safety net. But the Alaska salmon, California herring, New England shrimp and Maine lobster fisheries have been able to keep their balance between markets and stock abundance, between fishermen and scientists, between caution and prosperity.

"You can never be satisfied with status quo," says California's Henry. "Fishermen, biologists and regulators have to be willing to implement new fishing methods and new fishing behavior based on lessons learned during progress of the fishery. The fishery has to be structured so it can respond quickly to change or new information. This should be a constant process whereby everyone in the fishery is constantly striving to improve it." NF



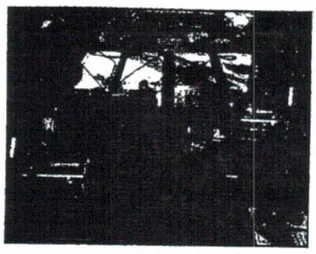
NORMA PEAUSE

AN INVENTIVE APPROACH to locally based management led to the lobster zone councils in Maine.

Charlie Ess, Mick Kronman, Sam Smith and Dexter Van Zile contributed to this story.

Improving Vessel Capabilities To Support ROV Projects

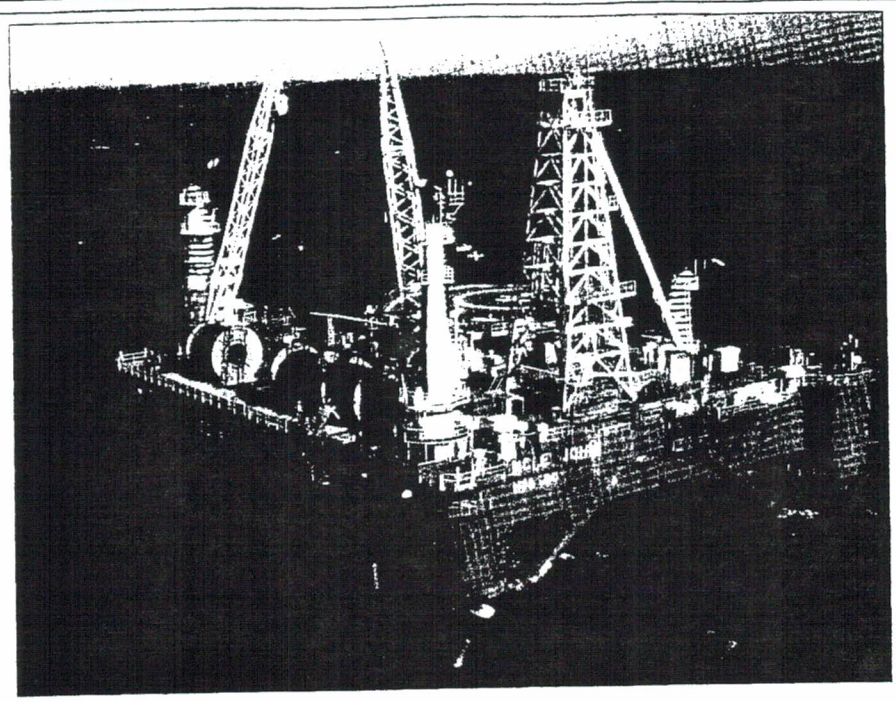
By Doug Stroud



Trico Marine's *Spirit River* (inset photo shows twin launches with Canyon Offshore ROVs)
BUILDER: Eastern Shipbuilding Group
FLAG: USA
CLASS: ABS, A1 AMS - Loadline
USCG Subchapter "L"
SOLAS Ready
GROSS TONNAGE: Under 1600 ITC
LENGTH: 230 feet
BEAM: 48 feet
DEPTH: 16 feet
LIGHT DRAFT: 8 feet
MAXIMUM DRAFT: 13 feet
DECK SPACE: 174 feet x 42 feet

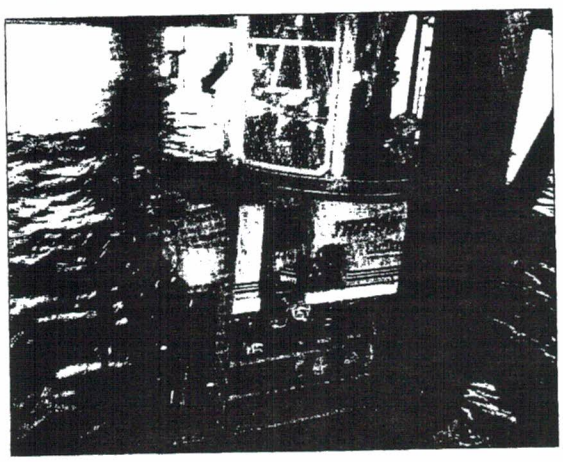
The following article is meant to stimulate thoughts on the utilization of conventional vessels in support of deepwater remotely operated vehicles (ROVs) and technical construction projects. It is based on improving the scenarios for utilization of existing Gulf of Mexico vessel assets for "spot" or call-out applications as well as scheduled deepwater work. It is meant to address contractors and clients who do not own or require access to large, integrated vessel assets, such as dynamically positioned vessels with permanent built-in ROV and diving services. Pictured throughout the article are various examples of ROV deployment vessels working around the world today.

The "call-out" market still represents a substantial share of the subsea work performed by ROVs on spot market vessels. Although it is clear that the demand for well-equipped vessels that offer dynamic positioning (DP), additional accommodations, and deck space is at a high level, many of these assets are committed long term and may not be available for short term work. Operators still demand the best available vessels for their jobs, especially on high profile deepwater projects and for winter weather conditions. Although DP vessels are increasingly present in the Gulf of Mexico



Cal Dive's *Uncle John*

A semi-submersible multi-service vessel capable of supporting a variety of marine projects, Cal Dive International's *Uncle John* is the centerpiece of its deepwater fleet. A Celegic DPS 902 fully redundant, dynamically positioning system, combined with the vessel's column stabilization, allows it to conduct operations year round in the harshest of ocean environments. A 100 horsepower Perry Tritech Triton XL work class ROV system (pictured at left) is permanently installed. Operating through a designated moon pool and assisted with a cursor that allows deployment of the ROV below the water line, the Triton XL is depth rated to 6,600 feet (2000m) and is upgradable to 10,000 feet (3,000m).

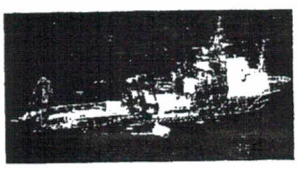


(GOM), there is also still a demand for conventionally positioned vessels with clear deck space, extra accommodation space, and other features that enhance deepwater project support capabilities such as ROV deployment, umbilical lays, and other space-intensive applications. In the cost environment today, vessel clients are looking for cost effective, efficient offshore vessels to meet their project needs.

In the current world of offshore operations, emphasis is placed on pre-planning of operations, simulations, dry land testing of all components, and support equipment, but the real key is what happens out on the water. A good deal of the success of an offshore construction, intervention, or maintenance project depends on the capabilities of the floating platform or vessel selected to perform the work. Often the selection of the vessel and associated requirements is left to the last

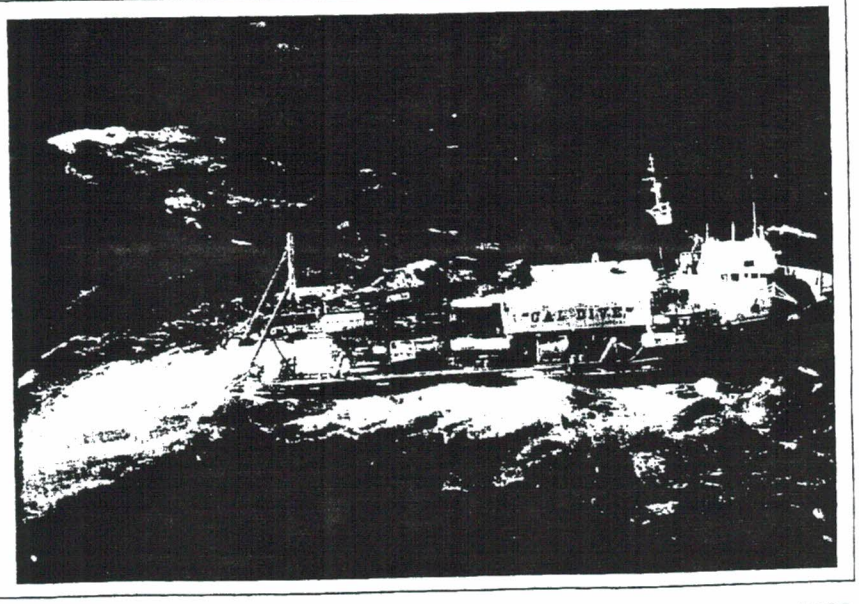
Cal Dive's *Merlin*

This vessel was specifically designed for deepwater ROV intervention, survey, and coring. Twin moonpools on the aft deck facilitate deployment and recovery of the ROV in rough seas. At almost 200 feet in length, the vessel offers a large clear deck area which can handle 300 tons, a 40-ton continuous bollard pull capability, and unusually large fuel capacity that provides up to 30 days of continuous offshore operations. Special features include dynamic positioning, dual-mode LBL / USBL acoustic system, follow sub mode, hydraulic A-frame, stern roller with gate, anchor handling winches, fire fighting class one, four point mooring capability and accommodations for 42 individuals.



Cal Dive's *Cal Diver V*

Pictured at right, the DSV *Cal Diver V,* one of CDI's Gulf of Mexico vessels, is home for a 50 horsepower Scorpio ROV that is depth rated to 1,000 feet (300m). Like most of CDI's fleet of ROV systems, this one is portable rather than permanent. The vessel can achieve 10 knots with its 1,700 horsepower engine and can accommodate as many as 30 crew members. It boasts a length of 168 feet , width of 38 feet , and draft of 13 feet. There is 1,064 square feet of clear deck space with a cargo capacity of 490 tons. The ROV is deployed by the 40-ton A-frame seen at the rear of the vessel. CDI ROV deployment vessels are used for such marine activities as construction support, jumper installation, umbilical installation and hook up, subsea pipeline repair, drilling rig support, and deepwater subsea tree installation.



minute and the vessel operators are not included in the planning phase of the program. This practice is partially due to the vessel operators' past and current charter procedures and a lack of understanding of the operational needs of the ROV operating companies and deepwater mission requirements.

Few traditional vessel companies have made a point of trying to enhance their vessels to support deepwater and ROV applications, or to pursue this market actively, other than on a "call-out basis." Traditional supply and logistic applications such as drill rig support, supply runs, and personnel transport still provide the majority of supply boat company revenues and therefore they are emphasized more, and rightly so. However, the increased market potential for deepwater vessel services can be lucrative if forward-thinking vessel companies address it correctly. A few philosophical shifts and minor vessel equipment changes could dramatically increase the ability of a modern "vessel only" company to support the deepwater and ROV operations market.

Philosophy and Attitude

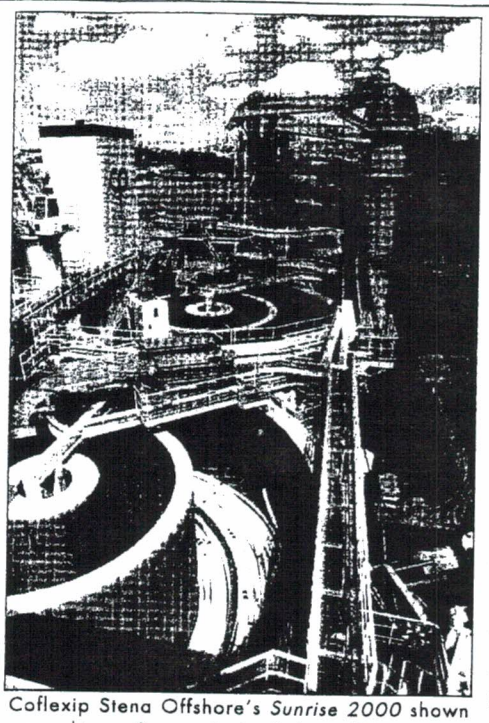
Most subsea projects mandate System Integration Testing (SITs) for all equipment and hardware before the systems go offshore. The vessel companies are typically not involved with this phase. In many instances, the first time a vessel crew member sees the equipment is when it is loaded onto his boat. He has no understanding or knowledge of the operational sequences and durations of the expected tasks. Earlier involvement of the vessel crews or vessel company representatives would enable the crews to better understand handling requirements and how precise vessel positioning would need to be at various times during the project.

The vessel company should also receive deck footprints and layouts of the equipment in advance. This would allow the crew to plan gas free and tank clearance requirements prior to loadout and also allow input as to better positioning of the equipment for optimized handling. This is especially true for crane and A-frame placements, which require U.S. Coast Guard stability approval (for U.S. Flag Vessels), with the additional loads and height impacting on vessel safety. The vessel is a key component of the operation, and yet, is the least likely to receive attention in preplanning activities.

The work class ROVs that operate in today's offshore environment bear little or no resemblance to those that first began supporting offshore oil and gas work requirements 15 to 20 years ago. Deeper depths and larger vehicles generally mean larger cables, larger winches, more flotation, and bigger launching systems, and thus, more deck space requirements. In addition to the larger ROV systems, additional auxiliary services are added to vessels, including surveyors, specialty contractor personnel, and client representatives, which means more accommodation needs and increased catering costs. Vessel companies wishing to succeed in the long term ROV service market must actively seek these projects out and have a philosophy of wanting to provide advantages to ROV and subsea contractors.

Equipment Additions

The advantages mentioned above can be achieved by adding features to call out vessels that reduce ROV/survey/seismic spread mobilization time and



Coflexip Stena Offshore's *Sunrise 2000* shown aproaching a Campos Basin platform off the coast of Rio de Janeiro.

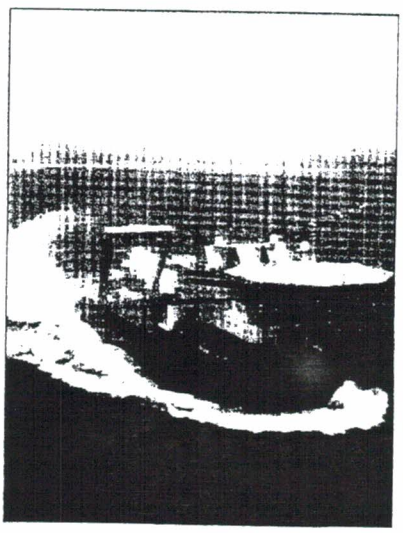
Coflexip Stena Offshore's *Sunrise 2000*

The pride of the COS deepwater pipelay vessel fleet, the *Sunrise 2000* has the ability to lay flexible flowlines and umbilicals simultaneously in waters up to 6,560 feet (2,000m) deep.

In order to provide both visual and remote intervention capabilities, the vessel has two Perry Tritech Triton XL work class ROV systems. Each is depth rated to 6,560 feet (2,000m). The vessel set a world depth record of 5,605 feet (1,709m) for flexible pipe in 1997, working for Petrobras in Brazil's Marlim Sul field.

The *Normand Pioneer*

Coflexip Stena Offshore recently celebrated a new addition to its fleet. Chartered for a five-year period, the *Normand Pioneer* began work in March 1999. Following completion of sea trials, she embarked on her first project, awarded by Ranger Oil UK for work on its Kyle field.



The latest addition to the Coflexip Stena Offshore fleet, the *Normand Pioneer*.

The 312-foot long, 79-foot beam, 6,000 ton vessel was built by Ulstein Verft (Norway) for Solstad Rederi (Norway) according to specifications laid down by the CSO Group. With 27,800 horsepower, the vessel is powerful enough to tackle tough trenching operations in deepwater.

The *Normand Pioneer* has two moonpools, the aft one designed for pipelaying and the forward one for work class or observation ROVs. The vessel is designed and arranged for a wide spectrum of subsea installation work and services. The 3,280 square foot work deck strengthened to 10 tons per square meter allows transport of project equipment or deck cargo up to a total of 2,500 tons. Accommodations have been provided for a total of 73 people.

The key feature of the Normand Pioneer is her versatility. She can easily be transformed from a trenching vessel, with excess of 270-ton bollard pull, to a flexible pipe or umbilical installation vessel, by removing her A-frame and adding a carousel and Vertical Lay System (VLS). During the course of the charter for CSO, the *Normand Pioneer* is scheduled to carry out trenching and pipelaying work in the North Sea area as well as other locations around the world.

Oceaneering's *Ocean Intervention*

Oceaneering's new build, the multi-service vessel (MSV) *Ocean Intervention* (right), was designed and equipped to work in water depths beyond the range of saturation divers; there is no saturation diving system onboard. Instead, it has a permanently installed Millennium ROV, rated for work in depths to 10,000 feet (3,033m). The Millennium is deployed using a cursor system through the vessel's forward moonpool, allowing for launch and recovery in rough weather conditions. The aft moonpool was designed for deployment of subsea hardware. In addition to its equipment, the vessel has two 18-foot by 18-foot moonpools.

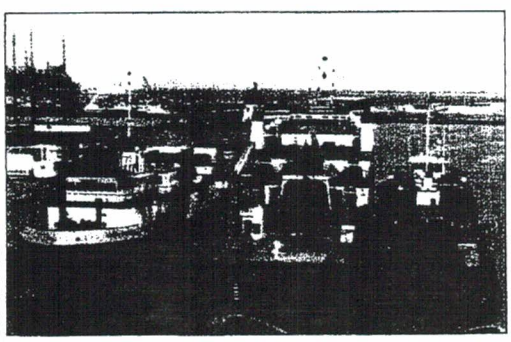
The propulsion plant is diesel electric with Caterpillar 3500B series engines (two (2) 3516B generator sets at 1,825KW, one (1) 3508B generator set at 910KW) generating 4,600KW on the 600V bus. These are high efficiency and low emission electronically controlled engines.

Main propulsion is by a pair of Aquamaster US2011, Z-Drives. Each one is a 2,000HP, fixed pitch, azimuthing stern thruster. These are driven by tandem GE752 DC motors, powered by SCR from the 600V bus. There are also two 1,000HP, fixed pitch Kamewa TT-2000 tunnel thrusters in the bow, each also driven by a GE752 motor.

The Dynamic Positioning control system is a Kongsberg Simrad SDP-21 dual redundant system. The dynamic positioning equipment also includes two internal retractable hydrophone poles, a Sonardyne hydroacoustic positioning system, and multiple DGPS satellite positioning receivers. With the redundancies in the power generation, propulsion, and DP controls, the *Ocean Intervention* has been classed and certified DPS-2 by the ABS for redundant dynamic positioning.

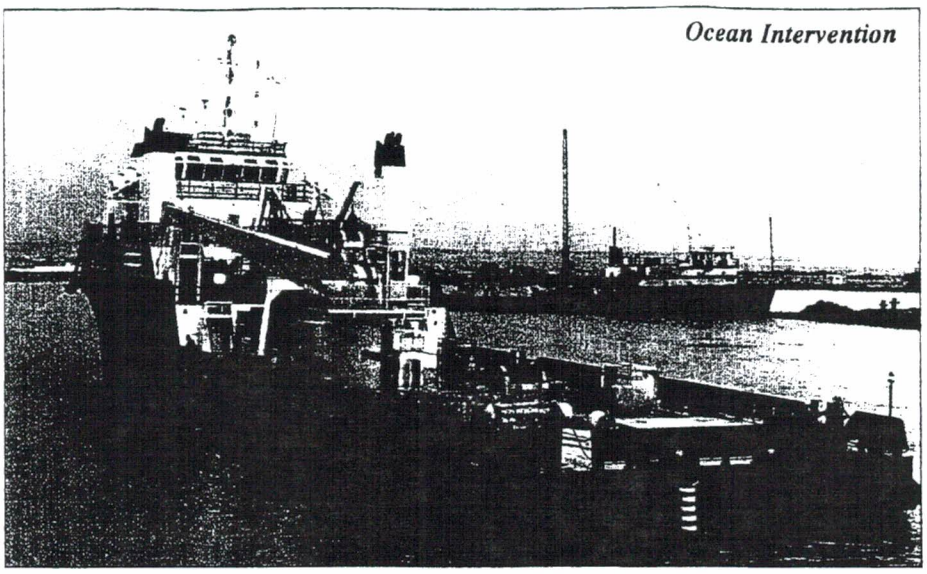
The crane is a Nautilus 80-ton crane with an 80-foot Applied Hydraulics 340-80B boom. The *Ocean Intervention* carries an Oceaneering Millennium ROV and winch capable of operations in 10,000 feet (3,033m) water depth.

The vessel has been extremely busy since its delivery in November of 1998. After its current job with Mariner Energy, she will go to drydock for SOLAS classification. A 40-ton A-frame will be installed. Her sister vessel, the *Ocean Intervention II*, is currently being built by Bollinger Shipyards in Lockport, La., and is scheduled for completion in March of 2000.

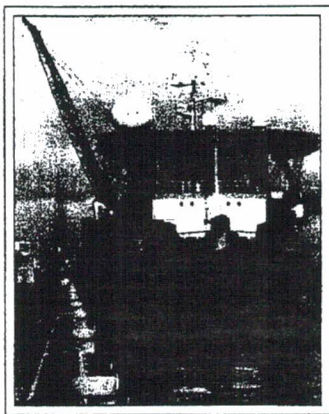


Oceaneering's *Ocean Service*

A dynamically positioned ROV support vessel, the *Ocean Service* (left) is shown here docked beside the *Ocean Intervention* (middle) and the *Ocean Diver V* (right). The 200-foot vessel features a 75 horsepower Hydra Quantum ROV system, built-in ROV control room, and an over the side launch and recovery system. The Hydra Quantum ROV is depth rated to 7,000 feet (2,100m) and boasts a 300 lb. payload, fiber optic armored umbilical, 450-foot cage deployed tether, Simrad MS 900 sonar and altimeter, KVH gyro compass, dual manipulators, and full time bathymetric display.



Ocean Intervention

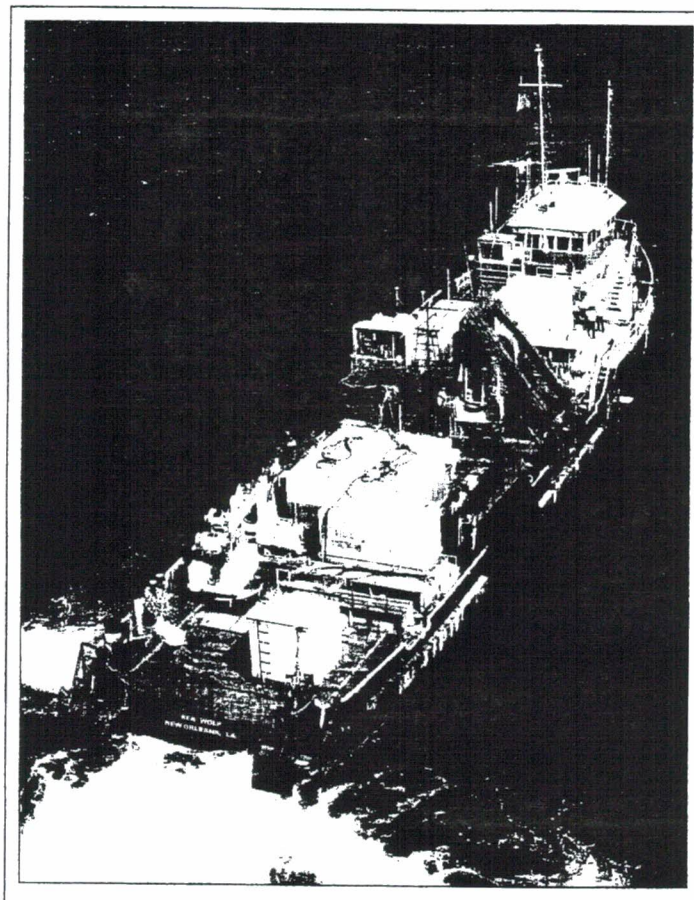


Racal Survey's *Racal Nordic*

Completely upgraded for a variety of inspection and survey applications, the *Racal Nordic* has two identical work class ROVs permanently onboard. Designed and manufactured by Racal TTI at its factory in Singapore, the Sealion MK II is a 100 horsepower ROV depth rated to 3,300 feet (1,000m). One of the *Racal Nordic's* Sealion ROVs is deployed through the vessel's moonpool using an active cursor launch system in a free swimming configuration on either a kevlar or steel armored umbilical. The other Sealion is deployed from port forward on the Captain's deck using an A-frame launch system in either free swimming or TMS configuration.

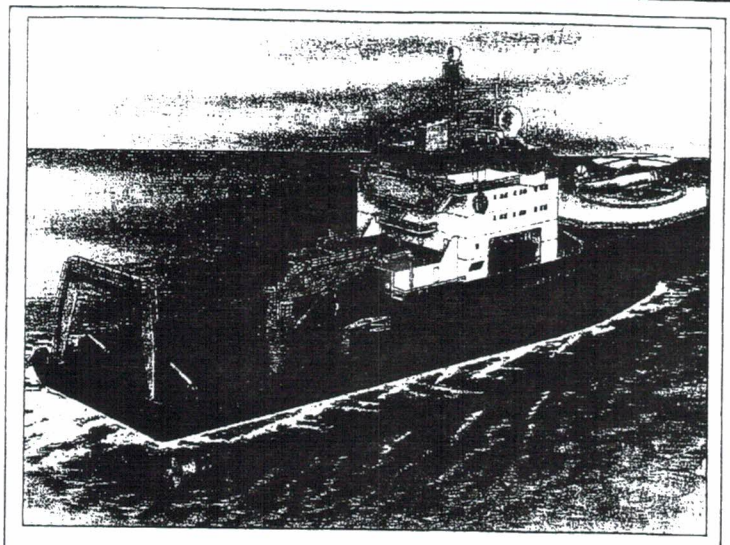
enhance operational tasks. Vessel enhancements can include such minor improvements as standard acoustic positioning hydro-phone flanges and sea chests being built-in to reduce time spent on mobilization and demobilization of the equipment, speed the raising and lowering of hydro-phones during operations, and increase third party and deck crew safety. Owners might also provide designated power outlets and spaces for survey and acoustic positioning systems on or near the bridge. Pre-wired auxiliary video lines installed for customer and bridge TV monitors would be a fine selling point. Fresh water wash down stations and LP air fittings and hoses for the ROV crew use are possibilities, as well. These are minor additions, but they can send a message to ROV clients that "we understand your requirements and we are being active to improve our service to you."

ROV and subsea technology contractors require rapid response for call-out operations. With conventional vessel rates falling, vessel companies must be smarter in their fleet management and in seeking new business development activities during this crisis period by seeking to create or enhance leadership positions in niche markets. Demand will fall for non-attractive vessel assets, but supply will be managed better also, so premium boats will still be available and the first ones used. Increasing market awareness to new technologies can only enhance vessel company utilization for qualified assets. Making investments which enhance your product in the client's eyes is critical to being successful.



Global Industries' *Sea Wolf*

Global's 185-foot DSV *Sea Wolf* has four point mooring capabilities, saturation or surface gas/air configurations, and a Triton XL 11 work class ROV system. Specifically designed for use in diving and ROV projects, she houses a rear-mounted A-frame and a deck-mounted 15 ton crane. The Sea Wolf is operated by Global Divers and Contractors to perform pipeline/riser tie-ins, mechanical/welded hot taps, pipeline repairs, and MMS site clearances.



Sonsub's *Polar Prince*

The M/V *Polar Prince* is Sonsub International's new dynamically positioned Inspection Maintenance and Repair (IMR) vessel. The ship entered into service in March 1999 under a five year long-term charter agreement. Designed to support deepwater construction, the new vessel is 300 feet (93m) in length and over 70 feet (22m) wide. In addition to the full dynamic positioning Class II, the vessel has low motion characteristics, low noise, and high redundancy in all operating modes. A 75-ton motion-compensated offshore crane provides capabilities to 6,500 feet (2,000m), while two moonpools, a stern-mounted 100-ton A-frame and a stern roller will support Sonsub's new series of deepwater ROVs and special subsea equipment launch and recovery operations. An onboard heliport, accommodation for up to 70 personnel, as well as 10,700 square feet (1,000 sqm) high load deck space for transporting or carrying out a wide variety of offshore tasks, make the vessel particularly well-suited for a wide spectrum of demanding offshore and deepwater assignments. The vessel will be available to support Sonsub International's extensive operations in major offshore petroleum centers worldwide.

OFFSHORE CRANE: 75 ton at 11m, 2,100m wire, active heave compensated; 6,560 feet (2,000m) water depth.
ROV CRANE: 5 tons at 10m
ROV MOONPOOL: 4.9 x 5.2m
MODULE HANDLING MOONPOOL: 7 x 6.5m
A-FRAME: 100 tons SWL 13m
STERN ROLLER: 60 ton
Built-in ROV Cursor system
Portable ROV Hanger
DP SYSTEM: Kongsberg Simrad SDP21
Hydroaccoustic Reference Simrad HPR 410 S
Simrad HPR HiPAP
DIFFERENTIAL GPS SYSTEMS: 2 x dGPS Seatex DARP
1 x Seatex SeaPath 200
INTERFACES: 1 x Artemis
MOTION REFERENCE UNITS: 2 x Seatex MRU 5
1 x Fanbeam Laser
1 x Tautwire Mk8 500
Survey Interfaces Available
NAVIGATION EQUIPMENT: Kongsberg Norcontrol Integrated Bridgeline 2020
HELICOPTER DECK: D-value 19.5m. Maximum take-off and landing weight - 10.0 tons

Another key point is that it is imperative that vessel companies understand the market and requirements they are trying to penetrate. This can be achieved through recruitment of ROV and deepwater experienced staff and through education of existing operational and marketing staff. The method is proactive vs. reactive and is key to business development in technical areas.

Technical Requirements for ROV Vessels

It is important to note that "a pig is a pig, whether it can dance or not." Some boats are just not suitable for deepwater work. The vessel company and the client have to work together to understand what is important to the mission and then designate the right asset based on those needs. Good deepwater ROV vessels require between 3,000 and 5,000 square feet of clear and open deck space, reliable propulsion, maneuvering thrusters, good communications and positioning references (SATCOM, DGPS, etc.), decent and plentiful accommodations, motivated and experienced crews, and shore support systems which can support rapid part and material needs. Optional items for ROV support are dynamic positioning to DP01 certification (if required) and a five to 10-ton deck crane or A-frame assembly to move or deploy components.

The bottom line is that much of the ROV services work, especially call-out work, in the upcoming years will still be done from non-DP conventional vessels. This work will provide opportunities for good vessels, and for vessel companies willing to invest in meeting the needs of the market. **uw**

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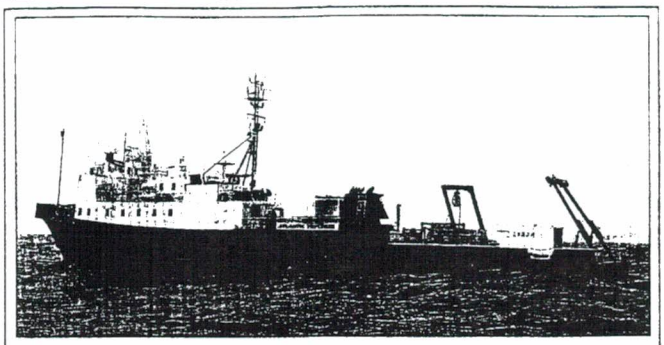
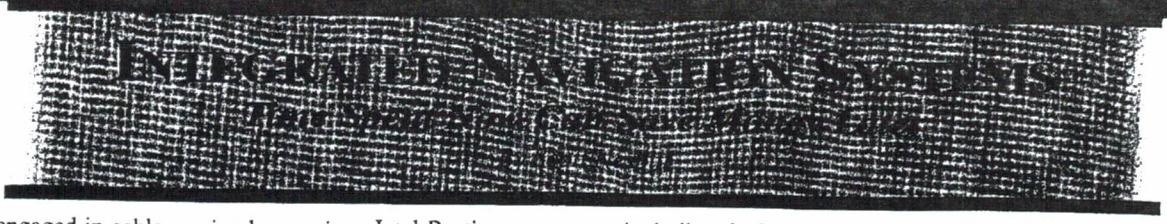


Marex Marine's *Atlantic Explorer*
205 feet x 33.5 feet x 13 feet, DP One
Built 1980, Keil Shipyard, Germany, All Steel, Panamanian Flag
Rebuilt in 1997-98, Gross Tonnage App. 803
Main Engine B&W Alpha (rebuilt 1997), 1120 hp; B&W Alpha Reduction Gear Box & CPP
2 x New Thrustmaster TH500 360 degree stern thrusters powered by new 550 hp cat Model 3412
New Thrustmaster TH500R 360 degree retractable bow thruster powered by new 550 hp Cat Model 3412
New Caterpillar 3406 generator @ 245 KW
New Nautronix DP System Model ASK 4000 JS
Rebuilt 12-ton telescoping Alaska Marine Crane Model 12-50TC
New 25-ton stern A Frame
New Hydraulic Power Unit for Crane and A Frame
Aft deck 74' x 32'6" rated @110 st load, Focsle deck 25 x 33'6" rated @ 50 st load
30' x 32' ROV Control Room
5 x Cables – 1 x RG59 & 4 x #20 tsp pulled from ROV Control Room to Bridge
2 x 14" OD Schedule 80 thru hull penetrators installed mid-ship
New Anschutz STD 20 Digital Gyro and Autostar autopilot
ICOM SSB CM 710, New Furuno FR510 Radar



Whether engaged in cable or pipe lay, positioning information is a vital component and central to the success of a project. Unfortunately, the need for navigation and positioning services is often overlooked until the last moment before sailing, when someone is heard to wonder "Don't we need to know where we are?!" For best results, an Integrated Navigation System (INS) is something for timely consideration at all phases of your project:

At the route design stage, sea floor terrain information must be available to design engineers. Actual cable/pipe lay is usually preceded by a bathymetric, side scan, and geotechnical survey to investigate proposed route conditions. If hazards are encountered, their exact location and potential to affect routing must be assessed. Some route redesign may be necessary. During the cable/pipe laying stage, barge operators need to know that the lay vessel is following a route that puts the cable/pipeline down along the designed route. Finally, at the post lay stage, various parties – including the Governmental agencies like the MMS – need to record as-laid cable/pipe alignment. Others may want details of how final position deviates from the designed route. A post-lay bathymetric and side scan survey is often conducted to provide this information, which is also essential for maintenance purposes in the event of damage to, or malfunction of, the pipe/cable or, for example, when the cable/pipe is to be covered with a rock berm.

At periodic intervals during the projected life of the cable/pipe, as-laid position is important to cable/pipe inspection teams. For example, in a cathode protection survey, anode locations are needed in addition to as-laid pipe positions.

Consideration of both hardware and software is important when selecting the positioning systems to employ. A host of different hardware sensors will be used to provide positioning data at each of the various phases. Instrumentation will range from GPS receivers to vertical reference units to acoustic positioning systems to multibeam echosounders. However, software is the focus of this article. The following sections highlight the most important attributes required from INS software, not the least of which is the ability to integrate all the different hardware pieces used. The intention is to provide some insight, to fuel further thought, and to trigger questions that both contractor and client should probably ask.

The choice of platform type is between IBM compatible PCs and Unix boxes. IBM is often more portable, less expensive and more omnipresent. Look for software that runs on any Intel Pentium processor, including dual processors. Ever more processing power is needed to cope with the growing volume of data acquired in real time survey, and as greater effort is made to visualize and process the data in real time mode. For example, real time data editing and decimation, and real time 3D displays are now a reality.

The universal Microsoft Windows user interface is so well known that a contractor can save time and money on operator training by selecting positioning software running on one of the Windows operating systems (OS). The more stable and secure Windows NT v4.0 is the 32 bit OS of choice.

Some Unix buffs insist that Windows NT is not capable of handling the real-time environment of integrated navigation systems. If an accuracy of one millisecond is claimed by a navigation software developer, and the software runs on NT, the main question must be, "Can Windows NT really handle this requirement?"

While Microsoft does not claim NT to be a "hard" real-time OS, nevertheless the answer to this question is yes; in fact, it can do a lot better! Windows NT uses the so-called Win32 Query Performance Counter API, which returns the resolution of a high-end performance counter. For Intel based CPU's the resolution of this counter is about 0.8 microseconds – in other words, 1,250 times better then the requirement of one millisecond.

Beware that some Windows-based navigation software has been directly translated from earlier DOS-based programs, and hence is often still a single executable unable to take full advantage of the multi-threading/multi-tasking capabilities of Windows NT. If all adjustments, all I/O drivers, and all displays are separate executables, running simultaneously, software is less likely to crash fatally. A single display that crashes in such a system is not going to bring all navigation to an abrupt halt. As is well known, hard reboots, line aborts, and circling up to restart the survey line have cost considerable downtime in the past.

Quality control in software development is important. Buggy software is everyone's night-

mare, whatever the field of endeavor. It makes sense to audit the company from which software is purchased. Choosing software developed under a quality control standard such as ISO9001 is wise. While nobody is crazy enough to guarantee absolutely bug-free software, at least ISO certification offers some assurance that the software has been thoroughly and continuously tested during development and is less likely to contain bugs serious enough to bring a survey to a grinding halt.

Potential buyers should insure that the INS software is limited only by the amount of RAM and processing power available, and not by the software itself. These days it is not uncommon to interface a large number of different sensors simultaneously. For example, Van Oord ACZ, a Dutch dredging and rock dumping company, is currently interfacing to 32 different sensors at once. When nine sensors are to be interrogated, it would be unfortunate to discover that the software supported interfacing to only eight sensors at once. With hardware costs plummeting, it is often cheaper to add more RAM or upgrade the processor than to buy new software.

It is expensive to train operators, especially on multiple software packages. If a company is involved in many different types of survey, it should make sure the operators, as well as all the different types of sensors used, are covered by investment in a single INS software package. The operative word here is flexibility. The contractor should make sure the software is designed for easy adaptation to any survey.

For data and project management, the modern surveyor is faced with ever increasing volumes of data from a variety of sensors. The key to extracting meaningful information from a survey, in a timely manner, is efficient data management. INS software should elevate data management from the traditional line by line approach to the project level. Keeping track of what has, and has not, been done to date then becomes an easier task for the busy surveyor. A "Project Manager" that tabulates all the databases in a survey against the actions that can be performed on each provides an immediate overall progress report. Actions should reflect the phases of a typical survey: i.e. survey configuration, real time data acquisition on line, analysis and conditioning of raw data, data replay with ability to change various settings, end of line statistical analysis, data import and export.

Once an action has been performed, the appropriate table cell is marked with the date. On right clicking the mouse, a historical summary could be available.

It is essential that the system permit permanent storage of survey configuration parameters, ALL raw data with time tagging in one common time frame (preferably UTC) and ALL results data. Data storage in a relational database is fast and efficient because there the need to load and unload files constantly when communicating back and forth between various program modules is eliminated. For large volumes of data typical of modern surveys, relational databases should be designed for maximum speed.

From the database, it should be possible to output raw data in ASCII format, preferably with options to output in well known exchange formats.; re-process the survey from raw data if an error in the survey set-up is detected at a later date, or if you want to change some settings (e.g. filter settings), so that re-survey in the field may therefore be avoided; analyze, filter, smooth, and repair raw data. In doing this, the raw data should never be compromised. It should also be possible to output position for every node in the network in ASCII format, again in well known exchange formats and to output comprehensive end of line statistics such as 95% 3D error ellipse information, the Residual, W-test, MDE, A-Priori SD, External Reliability and Status for each observation in each adjustment

Larger volumes of data sometimes cause file management headaches, especially if file save and retrieval operations are manual when skipping between program modules. File management pains are alleviated if the INS software provides several features: Automated generation of a directory structure within a user defined Project Folder

– once a Project Folder is defined, the INS software should automatically create a sub-directory structure and direct different data files to the correct directories. Automated generation of data storage files on new survey line selection – typically, survey configuration and raw data related to each surveyed line is more easily managed if stored in their own relational database, with results data stored in the same or a corresponding results database. Creation of a single template database (containing only the survey and network adjustment configurations) minimizes entry time of survey configuration parameters. Each time a new line is selected for survey, the program should automatically copy configuration data in creating a new database. At the same time all other files necessary for data storage should be automatically created.

> ***"The ability to exchange data easily has a checkered history in the survey world."***

The ability to exchange data easily has a checkered history in the survey world. There is little problem if survey data is stored in a proprietary format by a survey company for its own use; but complications often arise if a client or third party processing house needs the data in a format that its own software can read. Truly international data exchange formats for all survey types are sadly lacking. The United Kingdom Offshore Operators Association (UKOOA) has promulgated standards for exchange of raw seismic navigation data (P2/94), seismic navigation results data (P1/90), and pipeline inspection data (P5/94). These standards are widely used in the offshore oil and gas industry, perhaps more rigorously in Europe than in the USA, and can be adapted, in a pinch, to other survey types. Outside the seismic industry, exchange formats for positioning data have not reached this level of international acceptance.

As a potential purchaser of INS software, one should ask two questions: First, does the software developer do its best to provide built-in tools to import and export in commonly used data exchange formats, like the UKOOA formats? Second, are tools provided which allow users to create their own data output formats? In this case, the software developer has recognized the scarcity of internationally recognized standards, and has offered a solution geared to individual users. This may solve an individual contractor's own immediate problem, but contractors might be better served in the long run by considering ways to promote standardization of exchange formats at an international level.

At a minimum, the survey line design module of an INS should support route coordinate entry, either manually or read from an existing file, and then display these lines. If a contractor is engaged in many survey types, support of line types other than pipe/cable routes is essential. These might include simple survey lines and grids, targets, dogleg lines, wing lines, barge tracks, and traverses. Demand for more sophisticated tools that permit graphical entry and editing of lines, with such features as drag and drop as is used in CAD packages, would not be unreasonable. An option to design right on top of electronic charts, supplemented with overlay of additional survey data extracted from a geographical information system or other database, would be even more desirable. Support for the well-known DXF format is essential.

Unlike raster charts, vector electronic charts contain feature attribute information and so are multi-layered. If INS software takes advantage of this fact, switching off unnecessary layers, and even items within layers, removes clutter from the screen. Vector charts can be conveniently updated by downloading small data files rather than having to download the entire chart, which is a cumbersome necessity with raster charts. Vector charts that comply with the S52/DX90 standard set by the IMO are preferred. While it is unlikely that charts used in INS software would meet all the requirements of a true Electronic Chart Display and Information System (ECDIS), they certainly provide valuable information both in survey design and in real time survey when used as one layer of a navigation display. **uw**

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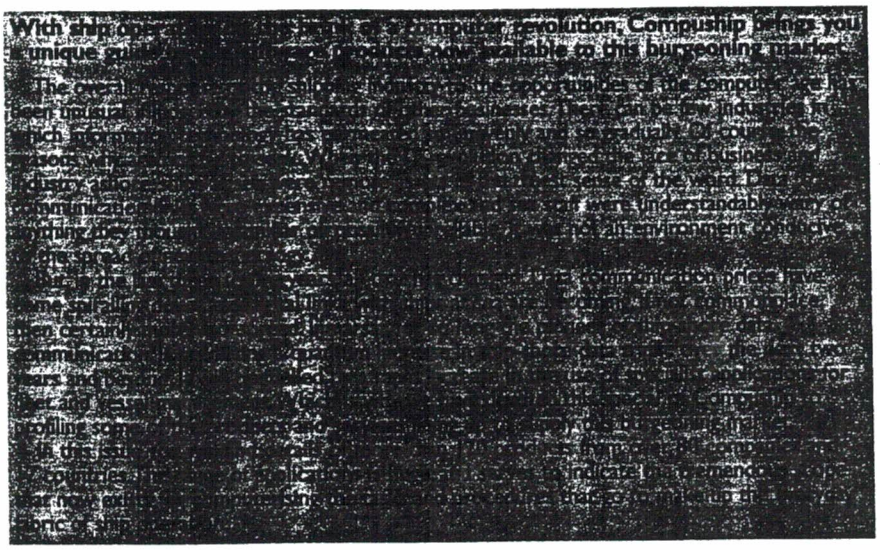
CONTENTS

The Compuship Guide to Shipping Software



How to use this guide

Companies in this guide are listed in alphabetical order. But, to bring some structure to the listing and help you search for the applications that interest you, we've put them into nine colour-coded categories. The colour coding is the key to understanding this guide. Some companies have several products, many of which come under different headings. In these cases, we've colour coded each product separately, but not repeated the company's name each time. And, where an individual product should really be classified within more than one category, we've shaded that entry with each appropriate colour code.

1 NAVIGATION

Includes route planning, tide and current calculators, electronic chart software, weather routeing, vessel optimisation and vessel tracking.

2 CARGO

The first computers aboard ships were dedicated loading calculators, and this remains one of the areas with most entries even today. In this category we've included loading and ballast calculators, strength, trim and stability programs, special cargo management programs as well as seakeeping software.

3 PERSONNEL

Includes programs for crew database management, payroll management, scheduling and travel planning.

4 MAINTENANCE

Here we've included hull machinery and equipment maintenance, including planned maintenance, survey status, machinery monitoring and diagnostics packages.

5 INVENTORY & PURCHASING

Inventory management. Stock control, electronic ordering and order processing for spare parts and consumables. These programs are frequently linked to those in Category 4.

6 REPORTS & DOCUMENTATION

The need to comply with the International Safety Management Code has been the spur for many shipowners to look at computerised methods of managing documentation and reports. This category includes specialist ISM software as well as programs for creating general administrative reports for ship owners and third parties ashore.

7 COMMUNICATIONS

One of the most rapidly expanding categories, embracing a host of new products and services designed to smooth the progress of data transfer. Includes email, file transfer. Least-cost routeing, traffic accounting and database synchronisation.

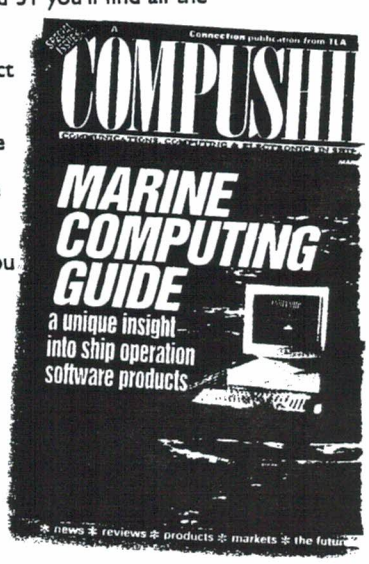
8 TRAINING & SIMULATION

The power of the PC as a training tool is becoming widely accepted. This category includes programs designed both for use in special training establishments and by mariners at sea.

9 INTEGRATED VESSEL MANAGEMENT

Some programs have such a broad scope that it proved impossible to slot them neatly into any one of the eight functional categories we identified. So, for these, we have a special ninth category. Many of the programs in this section are modular, and most will offer solutions for each of the other categories.

Each individual product has a response number, designed to help you get more information on those which interest you most. On page 32, you'll find the Compuship Faxback form. Simply fill in the response numbers corresponding to the products that you want more information about, and fax it to us. We'll contact the appropriate companies and get them to contact you directly. On pages 30 and 31 you'll find all the products listed, with their product category reference number. Use this as a handy guide to check which products you need more details about.



ABS Nautical Systems LLC — USA

PRODUCT NAME ABS SafeNet

PRODUCT CATEGORY 9

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Multi-modular ship management and information system

Survey Status module contains complete information on status of all class and statutory surveys for an entire fleet, regardless of class. Tabular and timeline presentations of survey status are available, plus principal vessel particulars, tools for survey planning, and guidance.

Marine Information module provides a comprehensive library of practical marine information, such as a detailed listing of ABS-approved equipment, suppliers, and the Fairplay Shipyard Directory.

The Hull Maintenance Module depicts real-time condition of a vessel's hull structures through its entire service life. Users can track hull gauging, damage and repair to assess the actual condition of any structural member, or the entire structure, at any point in time. It also has a graphic interface that provides detailed visualisation of a hull and all associated structures. Photos can be stored in the module to provide a historical condition record of any hull member. Users can outline repair scenarios and Hull Maintenance will provide drawings, cost estimates, weight estimates, and a bill of materials for the preparation of shipyard specifications.

Vessel Drawings Module allows the user to retain a lifecycle suite of drawings with extensive search capabilities within SafeNet. Drawings can be recalled and linked to various modules, as well as marked and annotated for future references.

In the Maintenance & Repair Module, users can enter all scheduled preventative maintenance work whether by calendar or running hours. It allows crew to document unscheduled or breakdown work into Work Orders or Service Requisitions. It can link hundreds of jobs to a Maintenance Event such as a dry-dock or extended port stay. Integrated with Purchasing & Inventory Control Module.

The Purchasing & Inventory Control Module includes all documentation associated with the procurement cycle. Clients can create a Requisition at a remote site, use a Requisition for Quotation to perform a cost comparison, copy items to a Purchase Order, take Receipt & Delivery of goods, and create an internal invoice which matches the invoice from the vendor and the purchase order entered in SafeNet. Approved invoices can then be dumped to an external Accounts Payable system.

The Financial Reporting Module provides a real time view of expenditure over any specified time period. Users can check status against budget, track estimated costs, committed costs, total cost and actual cost over any time period.

The Crew Management Module accomplishes three major tasks, capturing all personnel data for a particular seafarer, tracking all license, certificates, endorsements, training and STCW requirements (and determining that vessels are properly manned in accordance with both regulatory and owner's requirements), and scheduling crew on various vessels. The Crew Payroll Module enables payroll processing to be carried out ashore or at sea. It provides automatic tax calculation, user-defined earnings and deductions. It also supports multiple payment methods including cash by master, bank by office cheque, electronic bank transfer and balance forwarding. It can calculate pay for one seaman or the entire crew including allotments, overtime, advances, and slops chest purchases. The year-to-date amounts for all earnings and deductions by seafarer and company. Integrated Master's General Account (MGA) tracks ship's funds, Cash Account, Bonded Stores, Provisions, Repairs, Medical, Insurance and Sundry Payments.

The ISM/STCW Compliance Module is a simple interface to manage all data needed for ISM and STCW code compliance, improving accessibility of appropriate data for audit purposes.

Replication Manager provides the capability to transfer data between databases of all operational sites including vessels, offices, warehouses, crew agents, suppliers and shipyards. A central database acts as the distribution centre for all transactions at all sites that have individual databases.

AccuWeather Inc — USA

PRODUCT NAME

PRODUCT CATEGORY

SOFTWARE PRICE

PRODUCT DESCRIPTION

AccuWeather offers complete world-wide weather at www.accuweather.com. Also available from AccuWeather is custom content for a customer's internet network.

Response number 2

Adonis Personnel Management — Norway

PRODUCT NAME Adonis

PRODUCT CATEGORY 3

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Full-featured, PC-based personnel management with office, shipboard and payroll modules.

Response number 3

Autoship systems Corp — USA

PRODUCT NAME

PRODUCT CATEGORY

SOFTWARE PRICE

PRODUCT DESCRIPTION

PRODUCT NAME

PRODUCT CATEGORY

SOFTWARE PRICE

PRODUCT DESCRIPTION

CATEGORIES AT A GLANCE

1 [illegible]
2 [illegible]
3 [illegible]
4 [illegible]
5 INVENTORY & PURCHASING
6 REPORTS & DOCUMENTATION
7 COMMUNICATIONS
8 TRAINING & SIMULATORS

Baron and Dunworthy — Australia

PRODUCT NAME [illegible] loading calculator

PRODUCT CATEGORY [illegible]

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Modules available for dry bulk, liquid bulk, chemical, ror-ro and container ships.

Response number 6

Informatica Bottazzi — Italy

PRODUCT NAME Info ship

PRODUCT CATEGORY 9

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

INFO-SHIP procedures provide fundamental support for certification within ISM and ISO9000 codes. Modules include:
INFO-STOCK: stock management, machinery technical card and spare parts, management of ship spare parts, purchase requests for spare parts, consumables and jobs to do, statistics and checks.
INFO-PMS: planned maintenance management and assessment of implemented plant maintenance.
INFO-SUPPLY: requisitions' management for spare parts, consumables and jobs to do (analysis of purchase requisitions, offers, orders, location of supplies and administration control).
INFO-SMS: Safety Management (ISM Code, SOLAS, ISO 9000) survey, non-conformity, prescriptions.
INFO-VIEW: ODIS. (Optical Document Information System). Integrated in INFO-STOCK module, covers the management of the acquisition of tables, documents, part lists and linked pictures.
INFO-COMM: allows the export and import for ship-shore-ship transmission of InfoSHIP procedures.
INFO-VOYAGE: management of Engine and Deck Log Book (Voyage survey) and Load/Unload Reports to provide data on performance, automatic updating of running hours, and Load and Unload data for charter party.
INFO-AUTOMATION: allows data to be drawn from the Automation System, filed on a PC and transmitted ashore through Inmarsat.
INFO-HOURS: updates the running hours of INFO-PMS Module (Planned Maintenance System) imported through **INFO-AUTOMATION.**
INFO-LOGISTIC: logistic management of agents' or own stores.
INFO-STABILITAS PLUS: manages ship loading, stability, longitudinal strength and even damage stability by simulation of the various stages of loading and unloading of the ship.

Response number 7

SeaPages Trading Ltd — Netherlands

PRODUCT NAME ISSA CD-ROM

PRODUCT CATEGORY 5

SOFTWARE PRICE £80 per CD

PRODUCT DESCRIPTION

Complete electronic catalogue of latest ISSA book. Includes E-Trade ordering system for fast and efficient ordering to office or supplier. Can use E-mail, Fax or Telex as communications media. Very fast way of getting accurate orders from ship to shore, and reducing errors and communication costs.

CATEGORIES AT A GLANCE

1. NAVIGATION
2. CARGO
3. PERSONNEL
4. MAINTENANCE
5. INVENTORY & PURCHASING
6. REPORTS & DOCUMENTATION
7. COMMUNICATIONS
8. TRAINING & SIMULATION

Provisons Pro - The Provisions & Bonded Stores Catalogue on CD-ROM

PRODUCT NAME

PRODUCT CATEGORY 5

SOFTWARE PRICE US$ 100 per CD

PRODUCT DESCRIPTION

Complete electronic catalogue of Provisions & Bonded stores. Over 8000 items with hundreds of pictures. Includes E-Trade ordering system for fast and efficient ordering to office or supplier. Can use email, fax or telex as communications media. EDI using IMPA standard is available too. **Response number 9**

E-Trade for Ship Suppliers

PRODUCT NAME

PRODUCT CATEGORY 5

SOFTWARE PRICE US$ 2500 for server + 1 licence, $500 for each additional user

PRODUCT DESCRIPTION

Complete trading system for ship suppliers. Includes tendering, ordering, PO generation, invoicing and stock control. Can use email, fax or telex as communications media as well as integrated EDI using IMPA standard. Includes ISSA, IMPA and private catalogue databases. **Response number 10**

Bureau Veritas — France

PRODUCT NAME Veristar

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Ship design and structural analysis, based on direct calculation of hull stresses induced in different sea states.

Response number 11

Burmeister & Vogel — Germany

PRODUCT NAME The Shipping System: Voyage Estimation and T/C Analysis for Windows

PRODUCT CATEGORY 6

SOFTWARE PRICE From US $3,600

PRODUCT DESCRIPTION

Codular system for voyage estimation and T/C-analysis. Fast and easy to use; all main voyage figures in one single screen, additional information instantly accessible by one mouse click or keystroke. Comprehensive checks on all major items to avoid possibly expensive miscalculations. Supports automatic full load calculation taking into account various restrictions like loading/discharging/smallest draft, DWAT and volume.

Automatic canal fee and port cost estimation based on canal database / berth database. Automatic checks on draft, loa, beam at berth and canals. Easy modification of voyage, rotation and cargoes loaded to compare vessels and voyage changes. Practically unlimited number of cargoes and voyage legs makes parcelling calculations easy. Fully integrated BP marine distance table with additional user distance table. **Response number 12**

continued from page 4

Burmeister & Vogel — Germany

PRODUCT NAME The Shipping System: Voyage Estimation Actuals and Results for Windows

PRODUCT CATEGORY 6

SOFTWARE PRICE From US $3,600

PRODUCT DESCRIPTION

Add-on module for "The Shipping System: Voyage Estimation and T/C Analysis". Calculates results of actual/finalised voyage, resulting T/C equivalent and performance reports. Comparison of actual result against estimates. Calculate updated estimates as soon as the first actual data become available. Calculation based on actual leg, port and cargo information and bunkering details. Calculates actual resulting T/C equivalent, result per day, total result; performance report incl. average speed and consumption per leg and port; Handles non operation periods (off-hires). **Response number 13**

PRODUCT NAME The Shipping System: Voyage Estimation and T/C Analysis for Windows

PRODUCT CATEGORY 6

SOFTWARE PRICE From US $3,600

PRODUCT DESCRIPTION

Codular system for voyage estimation and T/C-analysis. Fast and easy to use; all main voyage figures in one single screen, additional information instantly accessible by one mouse click or keystroke. Comprehensive checks on all major items to avoid possibly expensive miscalculations. Supports automatic full load calculation taking into account various restrictions like loading/discharging/smallest draft, DWAT and volume. Automatic canal fee and port cost estimation based on canal database / berth database. Automatic checks on draft, loa, beam at berth and canals. Easy modification of voyage, rotation and cargoes loaded to compare vessels and voyage changes. Practically unlimited number of cargoes and voyage legs makes parcelling calculations easy. Fully integrated BP marine distance table with additional user distance table. **Response number 12**

PRODUCT NAME The Shipping System: Lay-time Calculation for Windows

PRODUCT CATEGORY 6

SOFTWARE PRICE From US $2,600

PRODUCT DESCRIPTION

Easy-to-use calculation system for demurrage/despatch-calculation for any kind of charter party or cargo. Based on the charter party and the statement of facts the program generates in some minutes a complete lay-time calculation with automatic detection of day breaks and with detection when the vessel comes on demurrage. The program supports all usual contract clauses: Reversible / Non reversible / Average; Working time saved / All time saved; Once on demurrage, always on demurrage / Not always on demurrage; Calculation of the time allowed based on loading/discharging rate in mts, shts, lts, cbm, cbft, pcs or as total days or hours; Highly customisable including user definable text table for the most frequently used remarks in the statement of facts and modifiable wording for certain input screen details. Dry cargo and tanker version and additional Pro Rata option available.

Response number 14

PRODUCT NAME The Shipping System: Position List for Windows

PRODUCT CATEGORY 6

SOFTWARE PRICE From US $3,600

PRODUCT DESCRIPTION

Position Lists, Shipping Databases for Shipbrokers. A program to collect, trace and query vessels position with powerful sort and select functions. It is available as a stand-alone package or it can be fully integrated with Fixture Report and the Voyage Estimation modules. Fast retrieval of information by powerful filtering functions. Filters can be saved and reloaded whenever vessels with the same specific features are needed. Easy input and update of positions. Direct link to client register for owner, manager providing instant access to multiple phone/fax/telex/email numbers and full style address. **Response number 15**

PRODUCT NAME The Shipping System: Fixture Report for Windows

PRODUCT CATEGORY 6

SOFTWARE PRICE From US $1,700

PRODUCT DESCRIPTION

A program to collect, trace and query fixtures with powerful sort and select functions. Optional module for Position List and Voyage Estimation. Fixture description with all relevant details. Specific screens for Voyage and T/C fixtures. Instant view of last fixture when entering a new fixture for a vessel. Instant view of last position when entering a new fixture for a vessel.

Vessel's description automatically taken from vessel's database Automatic update of the vessel's position in the position list module when a new fixtures is entered. Fast retrieval of information by powerful filtering functions. Direct link to client (charterer) register providing instant access to multiple phone/fax/telex email numbers and full style address.

Response number 16

PRODUCT NAME The Shipping System: Sales & Purchase for Windows

PRODUCT CATEGORY 6

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Shipping Databases for Sales & Purchase Broker. Powerful database system for the sale & purchase broker. Interface module available for the import of vessel's descriptions and client information as available from Lloyd's Maritime Information Services. Fast retrieval of information by powerful filtering functions. User composed selection criteria. Filters can be saved and reloaded whenever vessels with the same specific features are needed. Pick List function to select individual records for printing or to save as a project.

Pick-lists can be saved and reloaded later which automatically pre-selects the same set of vessel's descriptions. Vessel database with separate technical and commercial note pad facility for each record. Automatic sales history. Direct link to client register providing instant access to multiple phone/fax/telex email numbers and full style address.

Response number 17

PRODUCT NAME The Shipping System: Hire/Freight/Commissions

PRODUCT CATEGORY 6

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Invoicing and controlling system for hire, freight and commissions with integrated fixture book. Includes: client register; c/o addresses for each addressee; up to 3 hire periods with different hire rates; commission split for involved brokers; address commission handling; periodic hire invoices / credit notes; freight debit/credit notes; automatic handling of subsequent commission notes; delivery/redelivery bonuses; delivery/redelivery bunkers; unlimited number of off-hire periods and others per fixture; final hire statement; final freight statement; payment control; payment statements; and several statistics regarding notes and fixtures.

Response number 18

Burness Corlett and Partners — UK

PRODUCT NAME Shoreline Maintenance Management System

PRODUCT CATEGORY 4

SOFTWARE PRICE £995

PRODUCT DESCRIPTION

Marinised version of Shire's popular Frontline maintenance management system, thousands of which are sold ashore every year. Incorporates all functions and features expected in a quality management system, including item-level links to electronic drawings and documents and optional stock control and purchasing modules. Integrates statutory class/inspection and survey work into the overall vessel maintenance programme. Task instructions can be printed and condition monitoring measurements recorded. A full history of planned and unplanned work can be recorded for each item. **Response number 19**

PRODUCT NAME Stock control and purchasing modules

PRODUCT CATEGORY 5

SOFTWARE PRICE Stock control, £695; purchasing, £595

PRODUCT DESCRIPTION

Stock control module is designed to control stocks of parts and materials. Its purpose is to ensure that critical parts are always in stock and inventory is kept at most economic levels by placing orders at the right time. The purchase order module covers the generation of orders, receipt of goods, and the subsequent checking of invoices. **Response number 20**

C-Map — Norway

PRODUCT NAME C-map CM93

PRODUCT CATEGORY 1

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

10,000-plus digital charts on CD-Rom in C-Map's own format. Conforms to S-57 technical specifications. **Response number 23**

C-Map — Norway

PRODUCT NAME Vessel Data Center

PRODUCT CATEGORY 9

SOFTWARE PRICE From $149.95 to $495.00 per vessel

PRODUCT DESCRIPTION

Vessel Data Center is a complete, integrated vessel management and operations system providing easy to set up and use modules for: Preventive and Repair Maintenance Tracking; Contact Management for Employees, Vendors and others; Spares (Inventory) tracking including Purchasing; Logs including Expense tracking; Integrated Web "Channels" for quick access to suppliers and vendors. Weather, Sea Conditions and Tide data; Client/Server architecture for vessel to office data exchange; "Wizards" for fleet/vessel/component set up; Pre-built "Libraries" of component specifications and maintenance schedules. Key Selling Points: Low cost per vessel license, tracks unlimited fleets, vessels and components, supports any size vessel from tender to ship, user-definable libraries for component specifications / tasks, daily, automatic reminders for tasks due, Internet and Web enabled, easy to learn and use, outstanding technical support. **Response number 21**

CATEGORIES AT A GLANCE

1. NAVIGATION
2. CARGO
3. PERSONNEL
4. MAINTENANCE
5. INVENTORY & PURCHASING
6. REPORTS & DOCUMENTATION
7. COMMUNICATIONS
8. TRAINING & SIMULATION
9. INTEGRATED VESSEL

Chartco — UK

PRODUCT NAME Chartco

PRODUCT CATEGORY 1

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Chart updating service via satellite. **Response number 22**

Coastal Oceanographics Inc — USA

PRODUCT NAME Navpack

PRODUCT CATEGORY 1

SOFTWARE PRICE US$2,500

PRODUCT DESCRIPTION

Electronic chart navigation software using vector data (Arcap, DX90, S57, DXF, DGN, DGW). **Response number 24**

Consilium Marine — Sweden

PRODUCT NAME

PRODUCT CATEGORY

SOFTWARE PRICE

PRODUCT DESCRIPTION

[illegible] **Response number 25**

CSSL — Australia

PRODUCT NAME Mariner AMS

PRODUCT CATEGORY 3

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Provides shipping companies and liner agents with an integrated personnel/crew management and payroll system that can contain details on vessel and crew scheduling, training, skills management and medical and leave details. **Response number 26**

PRODUCT NAME Ocean AMS

PRODUCT CATEGORY 3

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Provides shipping companies and liner agencies with facilities for lodging and managing exchange of EDI messages lodged with customs authorities. Integrates functions into other modules which allow inter-office communication of vital shipping documentation such as manifests, as well as modules

Danaos — Greece

PRODUCT NAME Vessel Operation System

PRODUCT CATEGORY 9

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Application designed for operation department of a shipping company as a decision-making as well as a claims-support / defence tool. Performance monitoring in technical and financial terms with minimal information required. Provides optimum passage speed calculation with direct gain/loss calculation and optimum bunkering ports and schedule with complete analysis and costs differentials. Complete movements and daily reports with all specific and average figures. Charter party over/under performance evaluation in actual financial terms, providing complete defence against claims. Informs management with voyage financial reports and post-voyage analysis.

Features include: complete daily and port log; performance monitoring in technical and financial terms, integration of the operation and accounting departments. Reports include daily report with all daily and voyage-average figures ie FO, DO, Lube consumption, Speed, Slip, Endurance, Distance ETA, Weather conditions, etc; Vessel Performance features for each leg, in relation to wind, sea and current, Voyage financial reports, Complete vessel movements report, Charter party over/under performance evaluation in actual financial terms, Speed Summary, Charterers/Owners Speed & Consumption Summary. Offers optimum passage speed calculation based on actual vessel performance with direct profit/loss calculation, optimum bunkering ports and schedule with complete analysis and cost differentials, post-voyage analysis. Options include vessel performance module, shipboard module, with facility to update HQ computer automatically. **Response number 28**

PRODUCT NAME Vessel Performance System

PRODUCT CATEGORY 9

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Specially designed to assist the technical department in consistent performance calculation. Informs about vessel performance figures for each voyage leg in relation to wind, sea and current patterns. Evaluates performance in percentage terms, for hull, propeller, main and auxiliary engines. Provides complete vessel log with operational information. Full voyage and port statistics with fuel oil, diesel oil and lubricants consumption for each voyage leg, port call or during manoeuvring. **Response number 29**

PRODUCT NAME Vessel Performance System

PRODUCT CATEGORY 6

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

The Danaos ISM package is designed to provide the launch platform for a company's preparation and certification to ISM requirements. By evaluating all functions on board and ashore the "I.S.M. Administrator" allows one to optimise efficiency with minimum vessel operation cost and enables ship managers to meet the demands of "International Safety Management code" as well as other established quality management accreditation. Provides the backbone of the efficient maintenance of the ISM system once the company is certified and ensures continuity of compliance. The degree of automation provided ensures that minimal human intervention is required for application of the closed-loop principle of the ISM Code. On board or office updates are transferred by diskette or via satellite.

Response number 30

CATEGORIES AT A GLANCE

1. NAVIGATION
2. CARGO
3. PERSONNEL
4. MAINTENANCE
5. INVENTORY & PURCHASING
6. REPORTS & DOCUMENTATION
7. COMMUNICATIONS
8. TRAINING & SIMULATION
9. INTEGRATED VESSEL MANAGEMENT

PRODUCT NAME PMS

PRODUCT CATEGORY 4

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Full-featured planned maintenance system with links to purchasing, ship-shore comms and report generation modules. **Response number 31**

PRODUCT NAME Crew management

PRODUCT CATEGORY 3

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Crew management, payroll and scheduling facilities in full-featured personnel system for ship operators and owners. **Response number 32**

Dataworks — UK

PRODUCT NAME Message manager

PRODUCT CATEGORY 7

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Office-based message management system, combines all messaging formats, eg fax, telex, email, X-400, into a single desk-top package. **Response number 33**

Deutscher Wetterdienst — Germany

PRODUCT NAME MetFeeder

PRODUCT CATEGORY 1

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Weather reports, weather forecasts and forecast-based voyage planning for coastal shipping in Europe. Data usually delivered by satellite. **Response number 34**

Dolphin Maritime Software Ltd — UK

PRODUCT NAME Sightmaster 3 & Sightmaster 5

PRODUCT CATEGORY 1

SOFTWARE PRICE £99.00

PRODUCT DESCRIPTION

Ocean Navigation calculations with built-in Astronomical Almanac. Sightmaster includes a 85 body Almanac valid to the year 2100. Navigation functions include: automatic calculation of sights, prediction of bodies, identification of bodies, storage of Waypoints and Routes, calculation of courses and distances. **Response no 35**

PRODUCT NAME Coastmaster 3 & Coastmaster 5

PRODUCT CATEGORY 1

SOFTWARE PRICE £99.00

PRODUCT DESCRIPTION

Coastal Navigation calculations with storage of Waypoints and Routes. Coastmaster includes automatic DR position calculation, fuel consumption, In-built Sun Almanac to the year 2100, mass storage of Waypoints and Routes, calculation of courses and distances. **Response number 36**

continued from page 9

Dolphin Maritime Software Ltd — UK

PRODUCT NAME Marine Navigator 3 & Marine Navigator 5

PRODUCT CATEGORY 1

SOFTWARE PRICE £99.00

PRODUCT DESCRIPTION

Ocean and Coastal Navigation with built-in Astronomical Almanac and GPS satellite position input (requires GPS receiver and cable). Marine Navigator includes GPS and DR Navigation modes, storage of Waypoints and Routes, calculation of courses and distances, 65 body Almanac valid to the year 2100, automatic calculation of sights, prediction of bodies, identification of bodies, **Response number 37**

PRODUCT NAME Stability 3 & Stability 5

PRODUCT CATEGORY 2

SOFTWARE PRICE £99.00

PRODUCT DESCRIPTION

Merchant Ship Stability, Draught & Trim calculation. Stability rapidly calculates ship stability, draughts and trim. Multiple ships and voyages may be saved and ship data is used automatically. Output options include printing, Wordprocessor, email and PC Stability. **Response number 38**

PRODUCT NAME Oilsurvey 3 & Oilsurvey 5

PRODUCT CATEGORY 2

SOFTWARE PRICE £99.00

PRODUCT DESCRIPTION

Oil and Chemical Tanker Cargo calculations with built-in Tables. Oilsurvey rapidly calculates Oil and Chemical cargo quantities. Multiple ships and surveys may be saved and ship data can be used automatically. Output options include printing, Wordprocessor, email and PC Oilsurvey. **Response number 39**

PRODUCT NAME Draftsurvey 3 & Draftsurvey 5

PRODUCT CATEGORY 2

SOFTWARE PRICE £99.00

PRODUCT DESCRIPTION

Merchant Ship Cargo calculations from Draught Survey. Draftsurvey complies with the latest international standards and rapidly calculates ship cargoes from observed draughts in metres or feet. Multiple ships and surveys may be saved and ship data can be used automatically. Output options include printing, Wordprocessor, email and PC Draftsurvey. **Response number 40**

PRODUCT NAME Voyagemaster 3 & Voyagemaster 5

PRODUCT CATEGORY 1

SOFTWARE PRICE £99.00

PRODUCT DESCRIPTION

Tidal calculations with built-in Ports Database. Voyagemaster calculates the height of tide at any Port until the year 2080. Functions include graphic tidal curve, times of high and low water, output in feet or metres, storage of waypoints and calculation of courses and distances. Available in two versions: European (600+Ports) and USA (200+ Ports). You can add your own Ports for anywhere in the World.

CATEGORIES AT A GLANCE

1. NAVIGATION
2. CARGO
3. PERSONNEL
4. MAINTENANCE
5. INVENTORY & PURCHASING
6. REPORTS & DOCUMENTATION
7. COMMUNICATIONS
8. TRAINING & SIMULATION

PRODUCT NAME Shipcheck 3 & Shipcheck 5

PRODUCT CATEGORY 6

SOFTWARE PRICE £99.00

PRODUCT DESCRIPTION

Merchant Ship International rules compliance checking. Shipcheck contains a built-in database of questions and scoring facility to check compliance with International and company rules. Functions include creation of your own checklists, printing of paper check lists and output to Wordprocessor, e-mail or PC Shipcheck. **Response number 42**

PRODUCT NAME PC Sightmaster for Windows

PRODUCT CATEGORY 1

SOFTWARE PRICE £70.00

PRODUCT DESCRIPTION

Ocean Navigation calculations with built-in Astronomical Almanac. Sightmaster includes a 65 body Almanac valid to the year 2100, navigation functions include automatic calculation of sights, graphic sky, prediction of bodies, identification of bodies, compass correction, storage of Waypoints and Routes, calculation of courses and distances. **Response number 43**

PRODUCT NAME PC Stability for Windows

PRODUCT CATEGORY 2

SOFTWARE PRICE £70.00

PRODUCT DESCRIPTION

Merchant Ship Stability, Draught & Trim calculation. Stability rapidly calculates ship stability, draughts and trim. Multiple ships and voyages may be saved and ship data is used automatically. Output options include printing, Wordprocessor, email and Text file. **Response number 44**

PRODUCT NAME PC Marine Surveyor's Compilation for Windows

PRODUCT CATEGORY 2

SOFTWARE PRICE £160.00

PRODUCT DESCRIPTION

User-friendly compilation of Marine Surveying programs, incorporating our PC Oilsurvey program for Oil and Chemical Cargoes and our PC Draftsurvey program for Draught Surveying and many useful utilities. **Response number 45**

PRODUCT NAME PC Oilsurvey for Windows

PRODUCT CATEGORY 2

SOFTWARE PRICE £130.00

PRODUCT DESCRIPTION

Oil and Chemical Tanker Cargo calculations with built-in Tables. Oilsurvey rapidly calculates Oil and Chemical cargo quantities. Multiple ships and surveys may be saved and ship data can be used automatically. Output options include printing, Wordprocessor, email and text file. **Response number 46**

PRODUCT NAME PC Shipcheck for Windows

PRODUCT CATEGORY 6

SOFTWARE PRICE £190.00

PRODUCT DESCRIPTION

Merchant Ship International rules compliance

questions and scoring facility to check compliance with International and company rules. Functions include creation of your own checklists, printing of paper check lists and output to Wordprocessor, email or text file.

Response number 47

PRODUCT NAME PC Draft Survey for Windows
PRODUCT CATEGORY 2
SOFTWARE PRICE £130.00
PRODUCT DESCRIPTION

Merchant Ship Cargo calculations from Draught Survey. Draftsurvey complies with the latest international standards and rapidly calculates ship cargoes from observed draughts in metres or feet. Multiple ships and surveys may be saved and ship data can be used automatically. Output options include printing, Wordprocessor, email and text file.

Response number 48

PRODUCT NAME PC Seamaster for Windows
PRODUCT CATEGORY 1
SOFTWARE PRICE £275.00
PRODUCT DESCRIPTION

Electronic charting program using UKHO ARCS electronic charts. Designed for use onboard ship of all sizes and giving accurate Navigation, Plotting and Voyage planning facilities. **Response number 49**

PRODUCT NAME PC Chartplanner for Windows
PRODUCT CATEGORY 1
SOFTWARE PRICE £167.00
PRODUCT DESCRIPTION

Sophisticated electronic charting program using the World renowned and accurate British Admiralty ARCS Electronic Charts. Designed for use in plotting or planning in the Office or for planning onboard ships of all sizes. PC Chartplanner is fully compatible with our PC Seamaster onboard navigation program. **Response number 50**

PRODUCT NAME PC Voyagemaster for Windows
PRODUCT CATEGORY 1
SOFTWARE PRICE £99.00
PRODUCT DESCRIPTION

Tidal calculations with built-in Ports Database. Voyagemaster calculates the height of tide at any Port until the year 2080. Functions include graphic tidal curve, times of high and low water, output in feet or metres, storage of waypoints and calculation of courses and distances. Available in two versions: European (600+Ports) and USA (200+ Ports). You can add your own Ports for anywhere in the world. **Response number 51**

Data Processing Network (1989) Ltd UK

CATEGORIES AT A GLANCE
1 NAVIGATION
2 CARGO
3 PERSONNEL
4 MAINTENANCE
5 INVENTORY & PURCHASING
6 REPORTS & DOCUMENTATION
7 COMMUNICATIONS
8 TRAINING & SIMULATION

Marine Personnel Management and Payroll
PRODUCT NAME
PRODUCT CATEGORY 3
SOFTWARE PRICE Typical installation, £18,000
PRODUCT DESCRIPTION

Maintains crew records, including historical records of contracts, ranks, certificates and activities. Full reporting functionality, including vessel crew lists and employee performance reports as standard with ability for bespoke reports. Crew replacement search module available. Fully integrated multi-currency/national payroll system suitable for on-shore and off-shore use with leave accounting and cost-centre allocation. Ideal for companies with local manning control and a payroll run off-shore, as it enable parallel databases to be maintained easily at both locations.

Response number 52

Enfotec Technical Services Inc USA

PRODUCT NAME IceNav
PRODUCT CATEGORY 1
SOFTWARE PRICE Depends on usage
PRODUCT DESCRIPTION

Provides daily near real-time satellite images, charts, and forecasts of ice conditions. PC-based system is linked to a vessel's communication system for data delivery. Also linked to vessel's GPS and gyro to display geo-referenced data automatically. Provides seamless ice and weather information service. Course and distance of alternative routes through ice can be determined.

Response number 53

Euronav Ltd UK

PRODUCT NAME SeaPro 2000 professional
PRODUCT CATEGORY 1
SOFTWARE PRICE £750-1500
PRODUCT DESCRIPTION

Unique and revolutionary electronic chart system, offering world-wide coverage with mix of raster and vector charts. Supports multiple chart formats, including Livechart, S-57, ARCS, BSB and Seafarer. Features include multiple chart windows, tidal calculations, plotting and logging, arpa and radar overlay.

Response number 54

PRODUCT NAME SeaPro 2000 Fishing
PRODUCT CATEGORY 1, 2
SOFTWARE PRICE £750-1500
PRODUCT DESCRIPTION

Plotting and navigation tools in a single package for fishermen. Features include special "Fishing" toolbar. Includes UK SFIA "Kingfisher" obstruction database.

Response number 55

PRODUCT NAME VTS 2000
PRODUCT CATEGORY 1
SOFTWARE PRICE £1500
PRODUCT DESCRIPTION

Interfaces with VHF DSC radios to provide a low-cost, graphical vessel-tracking solution. Can also be interfaced with GSM, satcom of HF to provide a world-wide fleet tracking capability. **Response number 56**

GlobeWireless — USA

PRODUCT NAME GlobeEmail
PRODUCT CATEGORY 7
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Email package for Globe Wireless's global HF radio-based data communication system. Supports file attachments and many other key email features.

Response number 58

PRODUCT NAME Falcon
PRODUCT CATEGORY 4
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Maintenance program developed primarily for use in offshore support fleets **Response number 59**

GN Comtext — UK

PRODUCT NAME MCSWIN
PRODUCT CATEGORY 7
SOFTWARE PRICE Depends on number of users, number of communication lines and any optional modules: typically upwards of £3,000
PRODUCT DESCRIPTION

Full-featured, integrated messaging software suitable for office environments. It integrates all communication lines including fax, telex, Internet and GN Comtext, and allows routeing of all message types to individual or groups of users. Received messages of all types maybe edited and retransmitted to multiple destinations using least-cost routeing. As well as a sophisticated filing cabinet system, the product also features powerful search and find capabilities. Optional modules include OCR, allowing the user to convert incoming faxes to text messages and scanner support so that hard-copy documents can be put into the filing cabinet. There is also a billing module which can be used either for monitoring communication costs or generating traffic reports for back-charging to principals. Fully integrated messaging to the user's PC allows efficient communication without the need to copy incoming messages and then distribute them to addressees. It also means no more standing over fax or telex machines waiting for a document to transmit. Once a document has been transmitted the status (sent or failed) is reconciled to that message. The archiving structure means that messages received several years ago are potentially available to any user. The electronic filing cabinet can replace a hard-copy filing system, providing a very cost effective alternative. **Response number 60**

PRODUCT NAME MX Server
PRODUCT CATEGORY 7
SOFTWARE PRICE From £2,500
PRODUCT DESCRIPTION

FX Server is a gateway product that allows email package users (MS-Exchange, LotusNotes, CC-Mail, Groupwise) to send and receive telex and fax via the public telecomms network or via GN Comtext's own network. Existing mail package users do not have to learn to use other software packages to be able to send fax, telex GN Comtext Email, Internet and X400. Since the same product is suitable for most mail

CCMail to LotusNotes) without having to replace the telex and fax gateway.

Response number 61

PRODUCT NAME Planmaster - Containership Planning/Co-ordination Software for effective ship operation
PRODUCT CATEGORY 2
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Designed to help the busy ship planner organise cargoes smoothly and efficiently. The ideal tool for ship planning and stowage co-ordination, both powerful and versatile, ISO 9002 approved, uses industry standard operating platform and compatibility.

Response number 62

PRODUCT NAME Taskmaster - Computerised Load Monitoring Software for vessel safety
PRODUCT CATEGORY 2
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Computerised loading system enables the user to quickly and accurately calculate ship stability and stress levels. ISO 9002 approved. Fully type approved by major classification societies. **Response number 63**

PRODUCT NAME STSWin — Ship to Shore Communications for Windows
PRODUCT CATEGORY 7
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

STSWin is designed specifically to allow a ship to use the GN Comtext messaging service via Inmarsat. It combines the efficient use of satellite air time with the full array of services provided by GN Comtext, email, fax and telex to give the ship a complete messaging solution. Messages and attachments are transferred between the ship and the shore as a single compressed binary file. A full duplex link is established so that data is sent and received simultaneously. If the connection drops during a file transfer the software will automatically re-establish the link and resume the file transfer at the point where is was halted. STSWin acts as a MAPI Server. Full message tracking and itemised billing are provided as Standard.

Response number 64

Havinfo — Norway

PRODUCT NAME Havinfo
PRODUCT CATEGORY 7
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

CC:Mail, Lotus notes and Internet Mail via Inmarsat-C and other Inmarsat systems. **Response number 65**

Helintec — Greece

PRODUCT NAME Anko
PRODUCT CATEGORY 2
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Herbert Engineering — USA

PRODUCT NAME CargoMax

PRODUCT CATEGORY

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Full-featured cargo loading system with modules for all vessel types. Integrates on-line with tank and ballast systems and container planning programs.

Response number 67

High-Tech Shipmanagement — Germany

PRODUCT NAME PMS for Vessels (PMSV)
PMS for Office (PMSO)

PRODUCT CATEGORY 4

SOFTWARE PRICE £2-3000 for PMSV
£1-1500 per vessel for PMSO

PRODUCT DESCRIPTION

Full-featured maintenance system for vessels and office. PMSO can hold unlimited number of vessels with all data including spare parts, components and history. Each month PMSV automatically generates a file containing information about maintenance and repairs carried out in the previous month, as well as updating information about components and spare parts. This means exact replication of vessel data is available for analysis at the office. Five maintenance categories can be defined. A sophisticated QBE engine is associated with components, spare parts and history. Requisitions can be created for data transmission. At a click of a mouse, the stock of a given spare part is shown for all vessels.

Response number 68

Hydrographic and Marine Consultants BV — Netherlands

PRODUCT NAME CrewPlan

PRODUCT CATEGORY 3

SOFTWARE PRICE Standard stand alone version: NLG.3,500.
In most cases semi-customisation is carried out

PRODUCT DESCRIPTION

System for administrating and scheduling crew on ships. All personal data can be administrated and can be printed in several standard and user specified reports. The user can generate schedules manually using the check function to be sure that all requirements are met (ISM code). Schedules can be adjusted on screen with mouse functionality. The CrewPlan system offers the possibility to let the system generate an optimised schedule using management science techniques.

Response number 69

PRODUCT NAME BPE-loading Software

PRODUCT CATEGORY

SOFTWARE PRICE

PRODUCT DESCRIPTION

Shipboard class approved software for longitudinal strength and stability calculations. In a user friendly way all container slots, tanks or holds are displayed. Cargo quantities can be entered in the system in various ways after which several hydrostatic calculations are carried out and results are shown in graphics. Software can be delivered with class approved hardware.

Response number 70

PRODUCT NAME WorksPlan

PRODUCT CATEGORY 4, 5 and 6

SOFTWARE PRICE Standard version: NLG.5,000 per site.
In most cases semi customization is carried out

PRODUCT DESCRIPTION

System for maintenance planning, certificate control and inventory control. Expiry dates of certificates are displayed so that the user has an overview of all equipment. Instead of the more complex and expensive systems for maintenance planning, HMC has developed a system that is user friendly and less time-consuming. Automatic scheduling of maintenance tasks is being developed.

Response number 71

PRODUCT NAME Marplot Geographical Information System with Vessel Tracking

PRODUCT CATEGORY 1, 7

SOFTWARE PRICE NLG. 2,500 per site

PRODUCT DESCRIPTION

Marplot is a geographical information system that displays all kinds of objects on user defined maps. Marplot can be delivered with a flexible and advanced distance calculation module for calculating distances from every point to every other point on earth using different methods including shipping routes. Marplot can also be used as interface for on-line vessel tracking, and a communication module has been developed for satellite communication. HMC uses Marplot as an interface for several planning systems.

Response number 72

PRODUCT NAME Customized Planning Systems

PRODUCT CATEGORY 9

SOFTWARE PRICE Depends on requirements

PRODUCT DESCRIPTION

The development of customised planning systems using Management Science techniques is a speciality of HMC. Management Science uses mathematical models to improve processes, including shipping operations like route planning, fleet planning, crew planning and maintenance planning.

Response number 73

Informatique et Mer — France

PRODUCT NAME MaxSea

PRODUCT CATEGORY 1

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Decision-support tool primarily for fishing vessel skippers. Performs basic tasks such as route planning and plotting waypoints.

Response number 76

IndustriData — Norway

PRODUCT NAME IndustriData

PRODUCT CATEGORY 4, 5

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

CATEGORIES AT A GLANCE

1. NAVIGATION
2. CARGO
3. PERSONNEL
4. MAINTENANCE
5. INVENTORY & PURCHASING
6. REPORTS & DOCUMENTATION
7. COMMUNICATIONS
8. TRAINING & SIMULATION

Sir Joseph Isherwood Ltd — UK

PRODUCT NAME Ship Performance Analysis System

PRODUCT CATEGORY 1

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Fuel optimisation, speed and power predictions; provides, on-line, real-time performance indication by accepting and analysing readings from navigational and engine instumentation every few minutes. Takes account of wind and waves, draft, above waterline sectional areas and calculates corrected performance indicators for standard speed, draft and weather conditions.

Response number 77

PRODUCT NAME Cargo planning/loading calculator

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Best-fit cargo plans can be generated from nominated cargo; cargo operations can be simulated and stress and stability calculations computed at each stage in the simulation.

Response number 78

PRODUCT NAME Ship Administration System

PRODUCT CATEGORY 6

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Database management system to produce administration documents required for most ports. Examples include crew listings, customs declarations, cargo declarations, bonded store and drugs declarations, crew relief program and arrival reports.

Response number 79

PRODUCT NAME Planned Maintenance System

PRODUCT CATEGORY 4

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Available either as stand-alone package or as part of an integrated system with stock control, vibration analysis and data communications. Can accommodate running hours and calendar-based maintenance. Full range of management reports included, with 5-year maintenance history.

Response number 80

PRODUCT NAME Vibration Monitoring System

PRODUCT CATEGORY 4

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Full turnkey package for machinery vibration analysis including portable data collector unit.

Response number 81

PRODUCT NAME Stock Control and Purchasing

PRODUCT CATEGORY 5

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Package includes automatic requisitioning based on stock levels, conversion of requests to orders, multiple currency order values, analysis of consumption and expenditure, 5-year usage history, different inventory locations.

Response number 82

PRODUCT NAME Satellite Communication Data Management

PRODUCT CATEGORY 7

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Accommodates data transmission requirements from any number of ship management systems or other computer applications. Consolidates files into a single batch, compresses data and sets-up ship-shore link. Features include auto-dial and answer, full duplex, variable baud rate and automatic distribution of received data to appropriate location.

Response number 83

Klas — Greece

PRODUCT NAME Klas

PRODUCT CATEGORY 7

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Software drivers that enable Windows 95, NT, 98 and 3.x programs to support satcom and ISDN data communication.

Response number 84

Kockums Sonics — Sweden

PRODUCT NAME Loadrite

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Stability and stress calculation performed within Windows 95 or NT environment. Available for all kinds of vessels, Loadrite consists of several modules which can be integrated or stand-alone. The most recent are CargoDoc, a tool for both cargo calculations and for administration of documents concerning load and discharge operations for tankers, and the dangerous goods module, which checks a bayplan against stowage and segregation requirements. Container details can be defined in this module or by importing a baplie file.

Response number 85

Kongsberg Norcontrol — Norway

PRODUCT NAME Fleetmaster

PRODUCT CATEGORY 7

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Information management system that gives shore-side access to ship-board administration and operation systems.

Response number 86

Lloyd's Register — UK

PRODUCT NAME Class Direct

PRODUCT CATEGORY 4

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Direct access to survey and inspection status for LR-classed ships.

Response number 87

MacSea — USA

PRODUCT NAME Dexter

PRODUCT CATEGORY 4

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Machinery monitoring, alarm and diagnostic system.

Response number 88

Maersk Data — Denmark

PRODUCT NAME Loadstar

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Aimed at cargo planners ashore and at sea. Can download data directly from tank gauging and ballast systems or container planning software. Versions for dry and liquid bulk, containerships and chemical tankers.

Response number 89

MaK — Germany

PRODUCT NAME Dicare

PRODUCT CATEGORY 4

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

PC-based maintenance and diagnostics for MaK marine engines. Includes satcom update module.

Response number 90

MAN B&W — Germany

PRODUCT NAME Cocos

PRODUCT CATEGORY 4

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Computer-controlled engine surveillance and monitoring. Developed in conjunction with SEMT Pielstick.

Response number 91

Marine Alignment — Denmark

PRODUCT NAME Easacon

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Container planning program, calculates optimum stowage plan, plus vessel strength and stability.

Response number 92

CATEGORIES AT A GLANCE

1. NAVIGATION
2. CARGO
3. PERSONNEL
4. MAINTENANCE
5. INVENTORY & PURCHASING
6. REPORTS & DOCUMENTATION
7. COMMUNICATIONS
8. TRAINING & SIMULATION
9. INTEGRATED VOYAGE MANAGEMENT

MarineSoft — Germany

PRODUCT NAME Ship Administration Maintenance System (SAMS)

PRODUCT CATEGORY 3, 4

SOFTWARE PRICE From DM 2,700 (single user) to DM 27,500 for network version

PRODUCT DESCRIPTION

Cost-effective solution for quality and safety management according to ISM Code. Three versions: Sams Office, Sams Board (administration), Sams Board (maintenance). Provides complete crew, budget, purchasing and technical equipment management for entire fleet, including crew registration, ship data, generating clearance lists, planning and supervision of training, maintenance, purchasing and stock control, settlement of on-board payroll and deductions.

Response number 93

PRODUCT NAME MS Marine Training

PRODUCT CATEGORY 8

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Assists in competency, communication and language training according to IMO regulations. Uses Standard Marine Communication Phrases. Usable for assessment of marine English, training in routine situations such as pilotage, tug assistance, approaching and leaving port, and emergency procedures such as fire on board, grounding and collision.

Response number 94

PRODUCT NAME PC-based Machinery Space Simulator

PRODUCT CATEGORY 8

SOFTWARE PRICE From DM 20,000 to DM 250,000

PRODUCT DESCRIPTION

Module-structured solution for instructor-guided training and self-instruction of practical skills and reactive abilities according to IMO model course 2.07. Usable for: normal operational training, watchkeeping training. Troubleshooting and accident prevention, emergency procedure scenarios. Several user logins, eg chief, instructor, trainee, enable the user to train prepared procedures to follow in the event of faults or operating errors. Available in single PC, PC network and console versions.

Response number 95

Marinet

PRODUCT NAME Global Messaging Service

PRODUCT CATEGORY 7

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Public-access or private-managed hub services.

Response number 96

Marinor — Norway

PRODUCT NAME RastWin

PRODUCT CATEGORY 9

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Integrated planned maintenance, purchasing and documentation system with ship-shore comms module

continued from page 17

Marinor — Norway

PRODUCT NAME Crew management system
PRODUCT CATEGORY 3
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Integration of three hitherto stand-alone products, MNCrew, MNPay and MNSas, a ship administration system. Allows crew data to be exchanged electronically between databases in different modules, and between shore and sea. **Response number 98**

Maritime Education — Sweden

PRODUCT NAME Maritime Communications
PRODUCT CATEGORY 8
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Computer-based GMDSS and maritime English training. Tests and individual log-book included
Response number 99

Martin and Co — Belgium

PRODUCT NAME Chart Track
PRODUCT CATEGORY 1
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Computer-based management for paper charts
Response number 100

Meridian Chartware — UK

PRODUCT NAME SeaTrack
PRODUCT CATEGORY 1
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Chart plotter for professional mariners. NMEA and ARCS charts, dead reckoning mode, tidal stream overlays **Response number 101**

Meteo Consult — Netherlands

PRODUCT NAME Spos
PRODUCT CATEGORY 1
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

PC-based on-board weather routing program, downloads and displays weather forecasts for selected ocean regions via satellite
Response number 102

CATEGORIES AT A GLANCE

1. NAVIGATION
2. CARGO
3. PERSONNEL
4. MAINTENANCE
5. INVENTORY & PURCHASING
6. REPORTS & DOCUMENTATION
7. COMMUNICATIONS
8. TRAINING & SIMULATION

Mueller + Blanck Software GmbH — Germany

PRODUCT NAME Capstan 3
PRODUCT CATEGORY 2
SOFTWARE PRICE 20,000 Euro
PRODUCT DESCRIPTION

Stowage planning, monitoring and control system for container vessels. To be used in co-ordination offices or container terminals. Allocation of stowage positions to bookings on a graphical screen, handling of EDI files, creation of various customised reports, voyage monitoring, calculation of stress, stability, draft, displacement and other vessel related values.
Response number 103

PRODUCT NAME C3-OBI
PRODUCT CATEGORY 2
SOFTWARE PRICE 7,500 Euro
PRODUCT DESCRIPTION

Load computer for container vessels, based on Capstan3 technology. Approved by Lloyd's Register of Shipping, Germanischer Lloyd, Bureau Veritas. Offers tailor-made reports, handles Baplie files; various bayplan printouts.
Response number 104

PRODUCT NAME M+B Local Interface
PRODUCT CATEGORY 2
SOFTWARE PRICE 1,600 Euro
PRODUCT DESCRIPTION

Application to create, edit and handle EDI files in Baplie standard. Intended for shipping lines, agents and terminals. Budget price Baplie translator and bayplan handling tool. Simple to learn operation for unskilled operators.
Response number 105

Nautical Software Inc — USA

PRODUCT NAME Tides & Currents for Windows
PRODUCT CATEGORY 1
SOFTWARE PRICE US$89 for the program. $75 U.S. for each tidal region. (There are 13 regions that cover the world.)
PRODUCT DESCRIPTION

Tide and current program. Data regions are available for anywhere in the world, giving 100 years of predictions. This easy-to-use program has excellent printing and many powerful features, including the Table, Weekly View, moonrise/moonset, sunrise/sunset, searching capabilities and more. This is one of only two programs to use the British Admiralty's full-harmonic data set to compute predictions, leading to a high level of accuracy. The user interface is award-winning, easy to use and aesthetically pleasing. The feature set is the most complete available of any tide and current prediction program. **Response number 106**

PRODUCT NAME GPS-Communicator
PRODUCT CATEGORY 1
SOFTWARE PRICE US$79
PRODUCT DESCRIPTION

A stand-alone upload/download program that easily transfers routes, waypoints and tracks between most GPS receivers and a computer. The program can store an unlimited number of routes and waypoints, and allows

continued from page 18

Manager. Also includes the Track Console, which allows the user to take onboard and plug into any instrument which sends NMEA 0183 data to display real-time readouts, such as COG, SOG, water temperature, depth, wind speed, etc. GPS-Communicator does not work with charts, but will plot routes, tracks and waypoints on a Mercator grid.

Response number 107

PRODUCT NAME Vessel Management System

PRODUCT CATEGORY 9

SOFTWARE PRICE US$ 199

PRODUCT DESCRIPTION

Track parts, provisions, expendables, spares, part numbers, charts, and any other kind of item or task. Preview and print inventory and task reports, shopping lists and more. Track engine (and other component) maintenance with custom task categories. Use the Logging System to track vessel activity. Transactions Page allows you to enter deposits and expenditures, and provides a running balance of any account that is set up. All data is cross-referenced to allow for powerful report generation as well as task management.

Response number 108

PRODUCT NAME ChartView Professional

PRODUCT CATEGORY 1

SOFTWARE PRICE US$ 495 for ChartView Professional. Add $149 for support for ARCS Skipper service or $449 for ARCS Navigator service. Charts are extra regardless of format chosen

PRODUCT DESCRIPTION

ChartView Professional is a full-featured navigation program that works with GPS and any other instrument that sends NMEA 0183 data. Supports different chart formats, including ARCS (British Admiralty Navigator and/or Skipper), Maptech, NDI, Softchart and more. Comes with Tides & Currents for Windows, with 100 years of predictions, and overlays tide and current vectors on top of charts for real-time display of water movements. Features include GPS real-time tracking and upload/download, split-screen, night vision, moving map display, full screen NavView mode, PerfectView, high resolution printing, PerfectQuilting for the best in seamless charting, autopilot support, Course Up and Leg Up chart rotation, unlimited routes, marks and waypoints and much more. ChartView is easy-to-use, with an award-winning interface. Claimed to be of the top two navigation programs in the North American market and lauded for its stability, quality and elegance. The tide and current integration is very strong, with features such as the ETA calculator which gives adjusted computations which integrate current and tidal movements. The program will even give the worst and best departure times for any specific route.

Response number 109

Netverk — Iceland

PRODUCT NAME Marstar

PRODUCT CATEGORY 7

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Full-featured ship-shore datacomms software with MAPI-compliant transport mechanism.

Response number 110

New Wave Systems Inc — USA

PRODUCT NAME Nautilus Stability Master

PRODUCT CATEGORY 2

SOFTWARE PRICE From US$4,000-US$10,000

PRODUCT DESCRIPTION

Customised for each vessel, to meet all regulations for cargo loading, stability and longitudinal strength calculations. Based on the 'true' 3D geometry of the vessel, it uses a graphical interface that displays the three views of the vessel and the contents of each tank or hold. Simple spreadsheet input is used for all compartments and tanks. Available for all vessel types and meets all IMO/ISO requirements.

Response number 111

Ocean Systems Inc. — USA

PRODUCT NAME Vessel Optimization and Safety System (VOSS)

PRODUCT CATEGORY 1, 2

SOFTWARE PRICE Initial set-up cost plus monthly subscription for weather download

PRODUCT DESCRIPTION

Vessel Optimization and Safety System (VOSS) is a high- and ship weather routeing and heavy weather damage avoidance system. The system is custom-tailored to each ship class and predicts ship speed, power, fuel consumption and motion/structural responses in wind and wave conditions forecast up to ten days. The Windows-based interface allows users to simulate, optimise (minimum fuel consumption for a required ETA) and compare different voyage plans. The system can be installed onboard ships or in the office. The shipboard application requires wireless communication to update weather while shore-based installation uses a modem and telephone line to update via Internet or direct dial. Heavy Weather Damage Avoidance advice is provided by answering "what if" questions on speed and heading changes as well as real-time monitoring of the ship motion and acceleration by the optional sensor package. VOSS has been integrated with major electronic chart display systems making it seamless in planning, execution and monitoring of ocean voyages.

Response number 113

Ocean Strategies — USA

PRODUCT NAME On-board weather

PRODUCT CATEGORY 1

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Satellite-delivered 6-day weather forecast, with voyage optimisation calculations.

Response number 112

Onboard Napa — Finland

PRODUCT NAME Onboard Napa

PRODUCT CATEGORY 2, 8

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Advanced program for on-board calculation of loading, damage stability and ship performance prediction for vessels such as car ferries, passenger ships, cable ships, ro-ro vessels and naval vessels. Can also be used as a

CATEGORIES AT A GLANCE

1. NAVIGATION
2. CARGO
3. PERSONNEL
4. MAINTENANCE
5. INVENTORY & PURCHASING
6. REPORTS & DOCUMENTATION
7. COMMUNICATIONS
8. TRAINING & SIMULATION
9. INTEGRATED VESSEL MANAGEMENT

continued from page 2

simulator for crew training and decision support in emergency situations. All calculations based on 3D vessel model. On-line interfaces to tank monitoring systems; provides tailor-made cargo and loading reports to meet customer standards and verifies strength and stability against relevant criteria before departure.

Response number 114

Onsoft Computer Systems AS — Norway

PRODUCT NAME OCS-Maisy (includes modules: OCS-ProOrd, OCS-Rental)

PRODUCT CATEGORY 4, 5

Licence prices for a system with maximum 5 concurrent users:

OCS-Maisy - asset management with spare part handling, NOK, 64,500
OCS-Maisy - procurement (purchase), materials, stock, NOK, 29,025
OCS-ProOrd - contracts, orders, projects, invoicing, NOK, 64,500
OCS-Mail - links the system to any MAPI e-mail system, NOK, 12,500
FMS-Link - transfer of data to FMS, NOK, 30,000
Additional NOK 10,750 per concurrent user, exceeding the initial 5

SOFTWARE PRICE

PRODUCT DESCRIPTION

OCS-Maisy is a 100% integrated system, module-based and integrated with external financial management systems. It may be operated as an office management system, or as an onboard system. Onboard operations may be performed online to land or with a separate database onboard. For ship-shore database replication a communication module, OCS Logging, is available. OCS-Maisy has detailed modules for each of the following areas: asset administration, planned maintenance management, resource planning, work history, spare part handling, materials handling, procurement, rental management, project management, invoicing, handling of contracts and orders, link to e-mail systems, link to customs declaration system, links towards financial management systems, etc. OCS-Maisy (version 8.04) has more than 40 standard reports. For each of the reports there are selection criteria available, with innumerable combinations, which gives the user most reports needed. New reports are also frequently added.

Response number 115

PRODUCT NAME OCS-Personnel

PRODUCT CATEGORY 3

Licence prices for a system with maximum 5 concurrent users:

OCS-Personnel - personnel management (Max. 500 current employees) NOK 86,000
OCS-Personnel - payroll (Max. 100,000 transactions) NOK 64,500
OCS-Personnel - crew planning NOK 53,750
FMS-Link - transfer of data to FMS NOK 30,000
Additional NOK 10,750 per concurrent user, exceeding the initial 5

SOFTWARE PRICE

PRODUCT DESCRIPTION

Integrated system, tailor-made for shipping and offshore, module based and integrated with external financial management systems. It may be operated as an office management system, or in addition as an onboard system. OCS-Personnel has detailed modules for each of the areas, personnel management, payroll, crew planning, travel expenses and planning, QA/training of personnel, crises management, links towards financial management systems; etc. OCS-Personnel (version 6.00.8) has 117 standard reports. OCS-Personnel will give the organisation complete control with all personnel planning in one system.

Response Number 116

CATEGORIES AT A GLANCE

1 NAVIGATION
2 CARGO
3 PERSONNEL
4 MAINTENANCE
5 INVENTORY & PURCHASING
6 REPORTS & DOCUMENTATION
7 COMMUNICATIONS
8 TRAINING & SIMULATION
9 INTEGRATED VESSEL

PC Maritime — UK

PRODUCT NAME Tides and Currents

PRODUCT CATEGORY 1

SOFTWARE PRICE £200

PRODUCT DESCRIPTION

Tidal height prediction software, uses official data from the UKHO, US NOAA and Canadian Hydrographic service. Uses full set of up to 223 harmonic calculations to calculate tidal height, which can make up to one hour and +/- 2 feet difference. World-wide coverage; in US waters, provides tide and current predictions, just tidal height in rest of the world.

Response number 117

PRODUCT NAME Turbo Diesel

PRODUCT CATEGORY 8

SOFTWARE PRICE £2000

PRODUCT DESCRIPTION

Simulates engine operation under various conditions, such as torque, revolution speed, ambient air pressure, and under variable technical states, such as broken piston rings or a worn fuel pump. The simulator is based on a highly accurate mathematical model developed using factory test-bed results and thermo-dynamic equations. As well as the factors that the instructor can control, the program also introduces random wear and tear factors. Complements the marine engineer training syllabus.

Response number 118

PRODUCT NAME Officer of the Watch

PRODUCT CATEGORY 8

SOFTWARE PRICE £2,500

PRODUCT DESCRIPTION

PC-based bridge simulator for watchkeeping and collision avoidance training. Certified by the UK's MCA for STCW 95 and winner of Seatrade Award. Can be installed ashore on stand-alone PCs or networks and is also suitable for on-board training. Easy to use - students can generally operate it within 30 minutes. Over 90 ready-made IMO Model Course exercise are provided.

Response number 119

PRODUCT NAME Safe Passage

PRODUCT CATEGORY 8

SOFTWARE PRICE £750

PRODUCT DESCRIPTION

Multi-media instruction and assessment CD-Rom on the international Collision regulations. Brings all 37 rules to life by means of audio instruction, video and graphic animation. Contains full text of rules and a glossary of terms. Can also be used for staff appraisal and recruitment.

Response number 120

PRODUCT NAME Navmaster Professional

PRODUCT CATEGORY 1

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Electronic chart display system developed to meet the IMO's Hydrographic Office standards. Written in Windows, its centralisation [illegible] continuous display, vessel position on electronic charts, [illegible] high position-management standards, including datum shift, and first-class passage planning routines. Text databases of waypoints and routes are quickly created by the user together with annotations, notes and [illegible]. The shore-based version, Navmaster Office, helps companies with emergency response planning by providing quick access to charts and an immediate plot of ship's position on the same admiralty charts that are on board. It also allows head offices to create standard routes and passage plans

Premas — Norway

PRODUCT NAME Premaster

PRODUCT CATEGORY 4, 5

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Windows-based software for planned maintenance, inventory management and purchasing. Three modules, one for ship-board use and two for office installations. Can provide the basis for PMS certification, saving sizeable percentage of annual classification costs.

Response number 122

Poseidon Simulation — Norway

PRODUCT NAME PGS/G

PRODUCT CATEGORY 8

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

PC-based modular GMDSS simulator offers up to 16 networked workstations. Complies with STCW '95 requirements and GOC training needs.

Response number 123

PRODUCT NAME Engine Room Simulator

PRODUCT CATEGORY 8

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Complies with STCW '95 requirements and ISM Code. Available as PC-based or in network versions.

Response number 124

PRODUCT NAME Radar Simulator

PRODUCT CATEGORY 8

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Complies with STCW '95 requirements; modular system that offers up to 15 independent student ships.

Response number 125

Rydex Industries Corporation — Canada

PRODUCT NAME RMS Exchange

PRODUCT CATEGORY 7

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

RMS Exchange is a new ship/shore communications product that combines the modern functionality of Microsoft's Outlook with Rydex's proven satellite optimised protocol, automatic data file transfer and remote shipboard IT support (AME) and Rydex's Data Bulletin Boards (selective downloading of weather data, for example). Works with Rydex's shore-based Mail Manager, which provides access to various gateways including SMTP (Internet, Microsoft Exchange Server, Lotus Notes), fax, telex, Xpedite, Comtext, MCI, and AT&T. RMS Exchange offers a modern and industry-standard e-mail interface while retaining the cost-saving attributes of previous Rydex products. AME is a valuable tool for automatically sending and receiving data. Given increased use of shipboard applications AME's remote support capabilities ensure these applications are always running without involveing of the crew. AME provides a very low cost alternative for shipboard application maintenance. **Response number 126**

SAIT Communications — Belgium

PRODUCT NAME @SEA(mail)

PRODUCT CATEGORY 7

SOFTWARE PRICE US$ 130 / Month + US$2 / address

PRODUCT DESCRIPTION

Communications package designed for use with satellite communications (Inmarsat A,B,M & Mini-M) or cellular/GSM; gives on-board users a modern and easy-to-use tool for sending e-mail as well as providing Least-Cost-Routing and departmental billing. It works over a public hub keeping communications costs low. No up-front investment is required for a private gateway. Integrates fully with @SEA(log) SAIT-Radio Holland's Least-Cost-Routing and call logging software. Automatic data compression cuts communications time, saving between 50% and 70%; multi-address messaging is supported. Additional savings are achieved by grouping a mix of many types of messages (fax, X.400 and internet mail, data, telex) for a single transmission. Messages can be exchanged with different types of e-mail, MS Mail, CC-Mail and Internet. Uses all the features of standard X.400 including delivery report and receipt notification. Incorporates an easy-to-use address list wizard that formats the addresses automatically in X.400 format. Includes password protection that can be activated to inhibit either software access, or Earth Station connection access. Automatically retrieves waiting messages from your private mail box each time a connection to the hub is made. Supports separate user lists for Owner, Crew, Private or Charterers accounts and separate departmental lists for Managers' accounts. Contains a new easy-to-use selector of pre-defined devices such as satcoms, cellular or phone modem. **Reader response 127**

PRODUCT NAME @SEA(log)

PRODUCT CATEGORY 7

SOFTWARE PRICE Free of charge for vessels under AAIC

PRODUCT DESCRIPTION

Provides on-board users with an easy-to-use tool to log and report ship-to-store traffic efficiently and accurately - includes Least-Cost-Routing database. Each call can be recorded completely and accurately in seconds with only a minimal number of keyboard entries. Call cost is calculated automatically, based on the applicable rates contained in the @SEA(log) database, then converted into the desired billing currency. On call completion, each call record is posted to the appropriate account: Owners, Managers, Charterer(s), Crew or Passengers. At the end of each month or traffic period, or simply on demand, @SEA(log) will automatically compile and generate clear, detailed listings for each individual account showing itemised call particulars and cost. This provides ready-to-use supporting documents when advance rebilling to third parties is required.

No 'returns' or other paper forms are needed. When a traffic period is closed, @SEA(log) complies all necessary data in the appropriate format. The records can then be sent on diskette or e-mailed to SAIT-Radio Holland. The tariff database can be customised, prior to delivery, to include only selected stations, or reflect preferential rates. Similarly, on-board currencies, shipboard fees, most frequently used addresses or destinations can be pre-set to suit your particular business requirements.

Reader response 128

Scana Skarpenoord — Norway

PRODUCT NAME Loading calculator

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Specialised programs for liquid bulk and chemical tankers. Integrates on-line with tank level and ballast systems.

Response number 129

Schema — Israel

PRODUCT NAME Orca

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Integrates with other cargo planning programs to provide optimum container stowage; spin-off module C2T can minimise ballast by optimising trim while maintaining within stress and stability constraints.

Response number 130

Seacos Computersystems & Software GmbH — Germany

PRODUCT NAME Shipcomputersystem MACS3

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

MACS3 is based on the IACS regulations for "Loading Instruments" with calculations for stability and strength. Includes today a varied number of program modules, with special software development for all kinds of vessels. Modules include: MXMACS3, for stability and strength calculation with automatic suggestion of load of ballast water in desired draughts and trim with regard to stability and strength; Tankplan, for the graphical representation of tank fillings; Voyage History, for pre-calculation of the stability values especially the GM-value during a voyage. The change of stability values results from the emptying of the bunker and/or ballast tanks respectively. The sequence in which the tanks are emptied can be selected; Hold Optimisation, optimises loading in holds with respect to certain criteria, e.g. trim, GM, stability, stress of the vessel. After a number of holds to take a certain amount of homogeneous cargo are selected, the program proposes how to divide the cargo among the selected holds; Trim optimisation - after cargo details have been entered, the computer is able, taking stability and strength into account, to recommend the necessary ballast, for a trim to minimise power consumption; Crane Operation Module, calculates stability and heeling angle relative to position of the crane arm with a load; Online Program; adapts tank filling levels from a gauging system.

Response no 131

PRODUCT NAME Various ship-type loading and stability programs

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Tankerprogram: graphical representation of tank fillings, calculation of intermediate conditions (stability and strength) for loading and discharging operations, full ullage report; Bulkstrength: calculates the longitudinal strength in flooded conditions according to regulation S17 of IACS, which applies to single side skin bulk carriers of more than 150 m in length. Bulklim: Checks load limitations by classification society including maximum load per hold, maximum load for each two adjacent holds and still water bending moments for each hold. Belco: for quick and comfortable load and discharge of container vessels.

Response number 132

PRODUCT NAME Stowman

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Three-part stowage planning system: Import and export of ASCII-container-files, from booking computer or database; import and export of dangerous cargo lists. Automatic suggestion for stowage of containers from pier to on-board can be produced, taking into account stability criteria, maximum permitted stack weights as well as segregation rules for dangerous cargo. Can exchange container data via clipboard with other Windows applications like Excel. Part II includes all functions of Part I and further functions for planning, arrival and departure condition, which can be worked out independently. Can generate reports such as 'loading list', 'discharge list', 're-stow list'. Part III includes all functions of Part I + Part II plus Crane Split, working sequences for board sided and shore sided cranes during loading and discharge.

Response no 133

PRODUCT NAME Ro-Ro

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Allows Ro-Ro vessels to process any kind of cargo (break bulk, trailer, homogeneous load). Every deck and hold is shown graphically; cargo management with simple mouse operations; graphical portrayal of current loading state for each deck; ability to load areas homogeneously with a stowing factor.

Reader response 134

PRODUCT NAME MIXCARGO

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

For multi purpose vessels to process any kind of cargo (break-bulk, trailer, homogeneous load); every deck and hold is shown graphically; effective pre-stowage and pre-discharge functions (bay-, tier, row- or port-wise); checks stack weights with warning when limits are exceeded; file import and export facility for Edifact / Baplie graphic view of current loading states for each deck; colour coding depending for different criteria.

Response number 135

PRODUCT NAME Cargo Securing Program

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Optional module for Mixcargo or Ro-Ro to meet the requirements of the "Cargo Securing Manual". It calculates the forces acting on non-standardised cargo and checks if the securing devices used are sufficient.

Response number 136

PRODUCT NAME Sealash

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Calculates the forces in the stowage and lash system (based on twist-lock stowage) in accordance with the regulations of all important classification societies. Different stowage and lashing plans can be taken into consideration. Minimum of lashing material on request.

Response number 137

PRODUCT NAME DAGO

PRODUCT CATEGORY 2

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Three-part dangerous goods program. Part I contains the complete IMDG-Code in the current version and the Emergency Schedules EMS. All dangerous goods can be shown on screen and be printed out. Checks

CATEGORIES AT A GLANCE

1. NAVIGATION
2. CARGO
3. PERSONNEL
4. MAINTENANCE
5. INVENTORY & PURCHASING
6. REPORTS & DOCUMENTATION
7. COMMUNICATIONS
8. TRAINING & SIMULATION
9. INTEGRATED VESSEL MANAGEMENT

observance of stowage and segregation requirements. Part 2 contains the security and fire protection plan in several graphics. When an accident with dangerous goods happens, a report on basis of the Emergency-Schedule is constructed. Part 3 contains the Medical First Aid Guide, which can be accessed directly from a report of the accident with dangerous goods.

Response number 138

PRODUCT NAME INEX
PRODUCT CATEGORY 2
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Program for inclining experiment approved by German Lloyd for the use on seagoing ships. Interfaces with a measurement system with online take-over of tank volumes, draughts and inclining moments. The inclining moment can be defined by means of tanks or also by turning cranes. Module "Inexman" enables testing or actual vessel stability by performing an automatic inclining experiment. Inexman carries out the inclining experiment by controlling the anti heeling system and achieves an heeling angle of two degrees to both sides. It will take about 10-15 minutes and give the actual GM and KG value.

Response number 139

PRODUCT NAME DASTYMAN
PRODUCT CATEGORY 2
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Damage calculation program for all types of seagoing ships. Used for physical correct damage calculation in accordance with IMO regulations. The results of the calculation will be printed as a certificate for the corresponding damaged condition. This module is useful especially for tankers, bulk carriers and passenger ships. After each change of cargo, ballast or bunker the required damage conditions (as laid down by the classification society) are calculated automatically. The results of change can be seen immediately and they are checked versus the IMO / Solas damage stability criteria.

Response number 140

PRODUCT NAME ShipWave
PRODUCT CATEGORY 2
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Calculates dynamic ship responses for seaway state. Calculation is based on the current loading condition of the ship and the current seaway state, expressed by an appropriate wave spectra (ITTC, Pierson-Moskowitz with the parameters wave height and period). Rolling, yawing, heaving, pitching, slamming and vertical and horizontal acceleration in arbitrary points of the ship are calculated and graphically displayed as function of ship course and speed.

Response number 141

PRODUCT NAME SEAREMAN
PRODUCT CATEGORY 2
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Program for effective order management for office and on board use. Includes satellite communication module. Can be installed under WINDOWS NT, 95 in a network and also on a stand-alone PC. For the network installation a client-server database is used. The onboard version can use

PRODUCT NAME PERMON
PRODUCT CATEGORY 4
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Program for monitoring performance-changes caused by changes of the shell plating, in order to optimise docking intervals. Draughts, position-data, wind, engine power etc. are collected in a database by manual input or from measuring sensors. The available data can be used also for documentation and in investigating accidents. Furthermore Permon can be used with Dago to provide proof of floodability of a damaged vessel. **Response number 143**

PRODUCT NAME ComMan
PRODUCT CATEGORY 7
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

ComMan offers world-wide, efficient data transmission between the communication server in a shipping company's office and a loading computer on board a vessel using an Inmarsat/GSM device. Any data, such as loading conditions, orders, documents can be transmitted between vessel and office. ComMan is based on MS-Exchange and is used as user interface for the preparation and sending of information in the office as well as on board the vessel. A special data protocol reduces the transmission costs on the relatively expensive Inmarsat line to a minimum.

Response number 144

SEMT Pielstick — Germany

PRODUCT NAME Cocos
PRODUCT CATEGORY 4
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Computer-controlled engine surveillance and monitoring. Developed in conjunction with MAN B&W.

Response number 145

Shipmanagement Expert Systems S.A. (SES) — Greece

PRODUCT NAME The Shipboard Management System
PRODUCT CATEGORY 9
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

The Shipboard Management System is SES's Windows based, off the shelf package, especially designed for seamen. It integrates and organises activities on board a vessel. It is a multilingual, user friendly, reliable, well tested, easy to install, and fully documented system, with a tutorial database for fast training and implementation. Also, it is a unique management tool for Quality Control and Quality Management Auditing, monitoring all operations of the vessel and covering the ISM Code and STCW requirements. First comprehensive and integrated off-the-shelf package designed under Windows. Specially designed for seamen, it does not require computer expertise to be operated. Through its SES-COMM Module it fully communicates and is linked with SES's office solution The Shipmanager Integrated Software. It can be operated in any language supported by MS Windows though SES' Multilingual Module. Besides the working database, it incorporates an

Shell Marine Products — UK

PRODUCT NAME SMP World

PRODUCT CATEGORY 7

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Ship-shore datacomms system compatible with Shell's own and third-party application products.

Response number 147

Ship Analytics — USA

PRODUCT NAME Safecargo

PRODUCT CATEGORY 8

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

PC-format cargo handling simulator for all ship types. Dedicated instructor and student packages.

Response number 148

PRODUCT NAME GMDSS Simulator

PRODUCT CATEGORY 8

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

PC-format GMDSS simulator for all ship types. Students use multi-channel equipment in send or receive mode.

Response number 149

SpecTec — Norway

PRODUCT NAME AMOS for Windows

PRODUCT CATEGORY 4

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Information system for vessel maintenance, spare parts control, surveys, certificates and purchasing, providing the reports and statistics essential to shipboard management and safety. Helps plan and schedule work assignments for better time management. AMOS for Windows includes planned preventive maintenance, work scheduling, breakdown reporting with integrated spare parts and consumables inventory. It assists in ISM Code certification, in particular for section 10.1 of the guidelines. It is designed specifically for ship-shore integration, with "Explorer" like hierarchy for components and machinery. It also integrates with communications software. It is DNV approved and configurable for different types of operations. It develops many different customised reports and can incorporate ship drawings and diagrams. Can compare machinery and locate similar spare parts across a fleet. **Response number 150**

CATEGORIES AT A GLANCE

1 NAVIGATION
2 CARGO
3 PERSONNEL
4 MAINTENANCE
5 INVENTORY & PURCHASING
6 REPORTS & DOCUMENTATION
7 COMMUNICATIONS
8 TRAINING & SIMULATION
9 INTEGRATED VESSEL

PRODUCT NAME AMOS for Windows

PRODUCT CATEGORY 7

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

AMOS Mail allows vessels and offices to exchange information using Inmarsat or other voice channels. Integrating all communications methods, including e-mail, fax, telex, data communications and high-speed data, into a single system, it provides effective communications and saves dial-up comms costs. Its integrated HSD data capability allows transmission in both directions simultaneously. Offers clear indication of message status and delivers notification should a sending error occur. If communication fails, it restarts from the point of failure. Can be used "stand-alone" or integrated with eg Microsoft Exchange. **Response number 151**

PRODUCT NAME AMOS QMS

PRODUCT CATEGORY 6

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Flexible tool for managing information flow between head office and vessels. Professional software consultancy to meet ISM code requirements and improve management practices. Designed to make ship operators more aware of ISM regulations and how best to implement them. Keeps track of all quality documentation, versions and distribution. Allows user to define any report from the vessel to the office, and use this information for trend analyses. AMOS-QMS does not only support the ISM code. Depending on the contents of your quality documentation and how you organise it, you may support any Quality Standard, such as ISO 9000 or 14000, AQAP, etc, It is DNV approved. **Response number 152**

PRODUCT NAME AMOS Personnel

PRODUCT CATEGORY 3

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Designed to support the maritime personnel department in its daily work of managing ships' officers and crew, including personnel information (general information, certificates, education, insurance arrangement and assignment history), planning, travel arrangements and reporting. AMOS Personnel keeps track of certificates and training and has both office and ship modules. The software will accumulate service history so you can easily select by available crew with appropriate training certificates. AMOS Personnel can include a photograph of each crewmember. **Response number 153**

PRODUCT NAME Loadmaster

PRODUCT CATEGORY 2

SOFTWARE PRICE Quoted for specific vessel

PRODUCT DESCRIPTION

[illegible] stability system. Ships [illegible] condition. It is a real-[illegible] based on Windows® [illegible] container vessels, general [illegible] tankers and bulkers, gas [illegible] roll-on/roll-off vessels, ferries, [illegible] and [illegible] with stability and structural [illegible] what-if calculations [illegible]

Response number 154

PRODUCT NAME AMOS-VTS

PRODUCT CATEGORY 1

SOFTWARE PRICE From £200

PRODUCT DESCRIPTION

AMOS-VTS is a GIS (Graphical Information System) vessel tracking program for fleet control and information. AMOS VTS will automatically plot the status and position of up to 100 ships. The system uses highly accurate Livechart electronic charts to display each ship's position, name, and 24-hour course and speed vector automatically. Works automatically with Spectec's AMOS-Link comms system and requires no special shipboard equipment other than that already used for GMDSS. **Response number 155**

Star Information Systems — Norway

PRODUCT NAME Star System

PRODUCT CATEGORY 4, 5, 6

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Three modules cover: 1) ISM reporting and auditing, 2) central purchasing functions and 3) on-board maintenance planning. **Response number 156**

Starpath School of Navigation — USA

PRODUCT NAME Starpath Chart No.1, CD-ROM for Windows

PRODUCT CATEGORY 8

SOFTWARE PRICE US$ 49

PRODUCT DESCRIPTION

Symbols, conventions, and terminology of nautical charts clearly explained with notes, graphics, photos, animations and video. **Response number 157**

Tag Consultants Ltd — USA

PRODUCT NAME Wintag

PRODUCT CATEGORY 4, 5

SOFTWARE PRICE £7,500 for 5 users, all applications

PRODUCT DESCRIPTION

Suite of applications designed to fulfil the needs of marine and offshore oil industries. Modules include planned maintenance for maintenance, repairs and spare-parts' management. Records full history of items including readings, work done, costs and spare parts used. Handles scheduled and unscheduled repairs, material tracking and man-hour costs. Purchasing module records a complete history of all requisitions, purchases and receipts; stock module records full history of all stock transactions, and can handle multiple stock locations per item. Invoice allocation will track and match approval for incoming invoices. Each Wintag module can be used stand-alone or integrated. **Response number 158**

Tero Marine AS — Norway

PRODUCT NAME TM-MASTER

PRODUCT CATEGORY 4,5 and 7

SOFTWARE PRICE (single user) NOK 35.000

PRODUCT DESCRIPTION

Planned maintenance and spare part control systems designed specifically for the shipping market. Features equipment and inventory control, spare part stock control, purchase and order processing, maintenance planning with work-order processing and reporting, maintenance and service history, with details including condition, reason, symptoms, man-hours, etc, analysis of maintenance history, survey and certificate control. It has a user-friendly graphic interface, which makes use of all the best Windows features like drag and drop and right mouse button menus. It also boasts facilities for linking Standard Reporting Forms to Maintenance Routines. The basic module includes the following main functions: equipment / inventory specifications, spare part stock control, purchase / order processing, free design of requisition, purchase order and inquiry-forms.

PRODUCT NAME TMMaster modules

PRODUCT CATEGORY 4, 7

SOFTWARE PRICE NOK 7.500

PRODUCT DESCRIPTION

Product description: The following modules are available to augment TMMaster: Communication module for interface with: standard email systems, central purchasing systems using DnV Standards; price, NOK 5.000. Drawings, photos, etc, function for linking assembly drawings, etc to components or spare part groups; price, NOK 4.000. Standard reporting forms, for linking standard forms to maintenance activities and history; price, NOK 6.000. Condition based monitoring, interfaces with SPM condition based monitoring. **Reader response 160**

PRODUCT NAME EO/Alarm system

PRODUCT CATEGORY 4

SOFTWARE PRICE NOK: 5.000

PRODUCT DESCRIPTION

System for maintenance/function testing of the UMS / alarm plant. Detailed description of all alarms and start / stop functions, including set points, work values, etc. Function tests/jobs-descriptions with intervals, printout functions for job lists, history, etc. **Response number 161**

Transas Marine — Russia / UK

PRODUCT NAME Simulator training

PRODUCT CATEGORY 8

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

Transas provides a complete set of simulators to cover most areas of maritime training: navigation, communication, propulsion and electric power plant operation, liquid cargo handling, vessel traffic management and oil-spill response management. Used in applications such as high-speed navigation, collision avoidance, docking, transiting shallow waters, ship-handling in various sea and weather conditions, blind pilotage, SAR training etc. **Response number 162**

PRODUCT NAME Navi-Sailor 2400 Ecdis

PRODUCT CATEGORY 1

SOFTWARE PRICE Not given

PRODUCT DESCRIPTION

NS-2400 ecdis and ECS product range offers a variety of options to suit individual needs of commercial shipping, navy and fishing. Features include route-planning and monitoring, anti-grounding control, interface with arpa/radar, Navtex interface, information module, playback module. Coverage, 4700 electronic charts in TX-97 format. **Response number 163**

Tresco Navigation Systems — Belgium

PRODUCT NAME PC-Navigis

PRODUCT CATEGORY 1

SOFTWARE PRICE [illegible] from 2000 Euro [illegible] to 6900 Euro [illegible] with AIS(VDL)

PRODUCT DESCRIPTION

PC Navigis is for inland, coastal and offshore navigation.

continued from page

planning, electronic logbook, distance measurement, symbol libraries, etc, is displayed. PC-Navigis is compatible with different international chart-standards, including the UKHO ARCS-raster charts, S57 and its own Tresco-vectorcharts. The track-function continuously saves your navigated route. You can show different routes simultaneously. Further functions include event registration, MOB, adding notes and drawing on charts. Route planning by waypoints is also available for great circle navigation. Radar circles can be displayed around the ship's position in different scalings. The Ecdis-version displays up to 30 ARPA-targets. Interfacing options: Gyro, magnetic compass, arpa-radar, slar-radar, echo sounder, alarm console, 2D DGPS, Windinfo etc. **Response number 164**

TH Designs — UK

PRODUCT NAME WordSat
PRODUCT CATEGORY 7
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Windows-based text editor for Inmarsat-C; includes compression facility. **Response number 165**

Ulysses Marine Electronic Marketing — UK

PRODUCT NAME ISM Solutions
PRODUCT CATEGORY 6
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Task-based system for documenting shipboard practices and recording updates; sharing a "corporate memory." **Response number 166**

Veson Inc — USA

PRODUCT NAME IMOS 2000 WIN
PRODUCT CATEGORY 9
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Modular package for managing and operating vessels. Modules include Chartering, Operations, Billing, Port Cost Management and Accounting. Sea Activity Reports include: Departure Report, Start of Sea Passage Report, Noon Reports, Special Reports, End of Sea Passage Report, Arrival Report. Each of these includes vessel position, ordered speed, distance to go, performance since last report, bunker ROB, weather information, technical information, total revolutions, slip and other information, off-hire and other delays information. Port Activity Reports include: Statements of facts with user defined, pre-set tasks for loading and discharging, cargo quantities loaded/discharged. **Response number 167**

PRODUCT NAME Distance 2000 Win
PRODUCT CATEGORY 1
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Defines distance and routing information given any two port names. The routing information includes the Suez and Panama canals, the Capes of Good Hope and Horn and the Magellan Straight. The system has a database of approximately 2,100 ports. **Response number 168**

CATEGORIES AT A GLANCE

1. NAVIGATION
2. CARGO
3. PERSONNEL
4. MAINTENANCE
5. INVENTORY & PURCHASING
6. REPORTS & DOCUMENTATION
7. COMMUNICATIONS
8. TRAINING & SIMULATION
9. INTEGRATED VESSEL

Wartsila NSD — Finland / Switzerland

PRODUCT NAME RCOM
PRODUCT CATEGORY 4
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Modular, PC-based engine monitoring and diagnostic system. Includes module for satellite-based video conferencing. **Response number 169**

Weather Information Technology — USA

PRODUCT NAME BonVoyage System
PRODUCT CATEGORY 1
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Satellite-delivered 5-10-day weather forecast, with voyage optimisation calculations. Updated every 2-3 days. **Response number 170**

WeatherTrac — USA

PRODUCT NAME WeatherTrac
PRODUCT CATEGORY 1
SOFTWARE PRICE Not given
PRODUCT DESCRIPTION

Downloads images direct from weather satellites. Provides visual route comparison. **Response number 171**

WNI Oceanroutes — USA

PRODUCT NAME Orion
PRODUCT CATEGORY 1
SOFTWARE PRICE Dependent upon number of vessel installations, data area and download frequency
PRODUCT DESCRIPTION

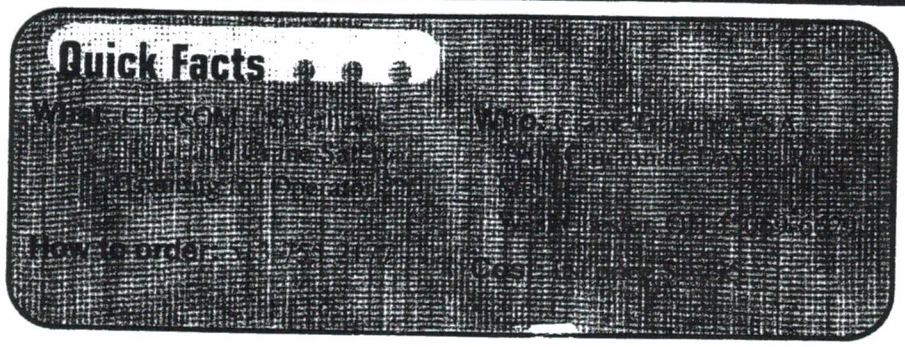
PC-based ship routeing and weather tracking system designed to ensure the master has the latest weather forecast information and optimum route calculation. Main features: extensive world-wide weather data, accurate ship modelling, optimised routeing, route display, route comparison, GPS integration, 24 hour shoreside support, text report generation, printing capability. **Response number 172**

Wolfson Unit MTIA, University of Southampton — UK

PRODUCT NAME Onboard loading
PRODUCT CATEGORY 2
SOFTWARE PRICE £4000-£5000
PRODUCT DESCRIPTION

[illegible] Onboard loading program approved by UK Dept. of [illegible] for [illegible] calculations directly from the full [illegible]. Enables the user to select and edit loaded condition [illegible] and compute trailing, stress and stability. In that condition, which may be used as the ship's official departure record. Program is supplied with files to define the vessel's geometric shape and loaded conditions, including capacity data for all of the tanks. **Response number 173**

Training



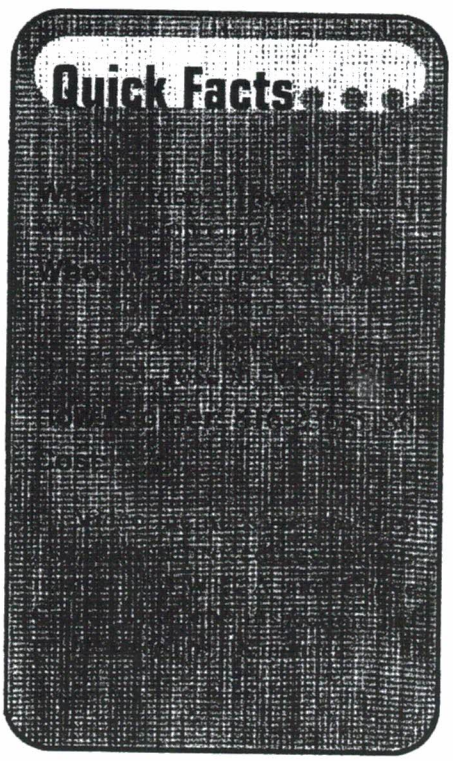
Overhead crane training

Version 2.0 allows an unlimited number of trainees to use this CD-ROM training program. In addition, the administrator program has been improved to make it easier to create trainee records.

The CD-ROM includes information on monorails, under and top running bridge cranes, jib, gantry and stacker cranes. It covers basic crane terminology, inspection responsibilities, potential dangers, OSHA requirements and tips on how to rig.

Upon completion of each chapter, the trainee is required to answer a randomly chosen set of multiple choice and true/false questions. The trainee must receive a score of at least 80 percent to proceed to the next chapter. For lower scores, the current chapter restarts. Upon receiving a satisfactory score, the trainee must still review the questions that were answered incorrectly before proceeding.

Wire rope training



Chicago, Ill.

Three railroad workers were electrocuted when a crane one of the men was operating touched a 12,000-volt power line.

The victims were all contract workers for a railroad company. They were moving containers and trailers at a rail yard when the crane hit the overhead line.

All three men died.

Las Vegas, Nev.

A construction worker was killed when a 4-ton piece of facade dropped 35 stories from a crane and fell on him. The crane was moving the 10'x20' iron/concrete section into place atop a hotel's tower when the accident occurred. Tourists watched as the load fell on the worker, killing him on impact. OSHA is investigating the cause.

Plymouth, Penn.

While working to replace a bridge, five workers received an electrical shock when the crane operator hit a power line. None of the workers were burned, but were taken to local hospitals as a precaution. The operator told police he did not know the crane had touched the power line until the workers fell to the ground from the shock.

Memphis, Tenn.

A crane operator was killed in an accident on a new runway under construction at an airport. The man was struck by the crane's boom as he was working on it. He was knocking the pins out of the boom.

Akron, Ohio

A man fell 22 feet from an overhead crane to his death.

"He was doing a task that he and I have done at least a thousand times each," said the general manager. "We just don't have any idea why he fell."

The man's death appears to be an industrial accident, but the investigation is not complete. According to the coroner's autopsy, the man had a medical history that may have contributed to the fall. The man suffered severe head trauma, including a skull fracture and several other fractures. An inspector from OSHA was on the scene to conduct an investigation.

Editor's note: The accidents in this department are generated from newspaper clips accumulated over several months and may not have occurred since the last issue. The purpose of this department is to educate people on common problems with operating lifting equipment. Although exact causes may not be known when the accident occurred, accidents are often the result of lack of training, poor maintenance and operator error. By increasing awareness, perhaps future accidents will be prevented. Specific company names have been removed. Some of these accidents may still be under investigation. ▮