University-National Oceanographic Laboratory System

Research Vessel Operators' Committee

Volume 20, Number 2 | RVOC Newsletter | 11 August 1995

I do not have a lot to report at this point. We are making preparations for the 1995 RVOC meeting which will be hosted by Scripps Institute of Oceanography in San Diego, CA. By this time you should have all received a packet of material on hotel reservations and planned activities which Tom Althouse had sent out back on 25 July. **If any of you have not received a package of information from SCRIPPS, please contact Larry Eastman at 619-534-1642 or Tom Althouse at 619-534-1643.**

Best Regards,

Paul Ljunggren

RVOC Annual Meeting - 1995

The agenda for this year's RVOC meeting in San Diego (October 24, 25 & 26) is slowly taking shape. We currently do not have plans for any presentations by vendors or consultants on Wednesday and are planning instead to visit SWATH OCEAN's shipyard and view the MBARI Swath WESTERN FLYER. The rest of the day on Wednesday will be devoted to smaller working groups or workshops. In order for these to be successful, we will need input, help and co-operation from as many of you as possible. The agenda for the meeting is enclosed.

RVOC Agenda

1995 RVOC Meeting Agenda

0800 Tuesday, 24 October 1995

0800 REGISTRATION AND COFFEE
Bring spouses to meet one another and plan their activities.

0830 WELCOMING REMARKS

- Tom Althouse, Marine Superintendent, Scripps Institute of Oceanography
- Dr. Robert Knox, Assoc. Director, Scripps Institute of Oceanography
- Mike Prince, Chairman, RVOC

0900 OLD BUSINESS

- Minutes of the 1994 Meeting - Mike Prince
- Oil spill response plans
- Shipyard reserve funds

0930 NEW BUSINESS
- Post Cruise Evalutations
- Medical Standards/Job Descriptions

1000 COMMITTEE AND LIASON REPORTS

- UNOLS, Jack Bash & UNOLS Chair, Dr. Ken Johnson (MLML)
- Safety Committee, Tom Smith
- RVTECH, Steve Rabalais
- FIC, Joe Coburn

1100 AGENCY REPORTS

- National Science Foundation - Dolly Dieter
- Office of Naval Research - Sujata Millick/Annette DeSilva
- Oceanographer of the Navy representative - Pat Dennis
- NOAA - Capt. Martin Mulhern
- USCG - LCDR Steve Wheeler
- U.S. State Department - Tom Cocke
- Others

1200 LUNCH

1995 RVOC MEETING AGENDA

1300 Tuesday, 24 October 1995 (continued)

1300 SPECIAL REPORTS

- Scripps Institute of Oceanography - Tom Althouse
- Representatives from other countries and organizations
- REVELLE (AGOR 24) - Tom Althouse
- AGOR 25 & Knorr conversion - Joe Coburn
- KAIMALINO, WHOI Swath - Joe Coburn
- Univ. of Connecticut R/V - Larry Burch
- New vessel for Skidaway
- MBARI Swath - Mark Vandenburg
- MARCO consortium vessel
- CAPE HATTERAS mid life - Quentin Lewis
- Any other operators with special reports

1500 MARITIME HEALTH SERVICES

- Report by MHS representative on medical support issues

1530 REGULATORY REPORT

- Report by George Ireland on any regulatory issues

1600 INSURANCE AND LIABILITY

- Report by Dennis Nixon on liability and insurance issues.

SUNSET RECEPTION AT STEPHEN BIRCH AQUARIUM-MUSEUM

1995 RVOC MEETING AGENDA

0830 Wednesday, 25 October 1995

0830 ADMINISTRATIVE BUSINESS AND WRAPUP OF TUESDAY'S AGENDA

0900 WORKSHOPS

Workshop groups will be formed prior to the meeting and the final agenda for their discussions will be determined by the members of each group. It has been suggested that we have two shorter workshop sessions so that each person can be involved in more than one subject. The subjects below are only suggestions, If you have a suggested topic or would like to run a workshop please let Mike know.

- White paper on the the benefits of the University operated research fleet
- Post cruise evaluations of research vessels
- Planning for layup periods/scheduling changes
- Crew training programs/revival and use of safety training manual including better dissemination of safety standards and chpt 1 of manual to scientists
- Physical Standards and Examinations for crew members
- Compliance with ISO 9002 standards, what is required and the possiblity of stricter enforcement of International Standards by other countries.
- Sexual Harrassment policies/procedures

1200 LUNCH AND TOUR OF MARFAC FACILITIES AND VESSELS

1330 CONTINUATION OF WORKSHOPS

1400 REPORTS FROM WORKSHOPS
(Brief report with follow up during round table)
(15 Mins each)

1500 REPORT ON MBARI SWATH FOLLOWED BY VISIT TO SWATH OCEAN

1995 RVOC Meeting Agenda

0800 Thursday, 26 October 1995

0800 SAFETY COMMITTEE REPORT ON UPDATE TO SAFETY STANDARDS

0900 ROUND TABLE DISCUSSION

- Marine Superintendents will select and discuss topics of mutual interest.

Please submit list of items that you would like to discuss, other items will be developed during the course of the meeting.

1200 LUNCH

1300 CONTINUE ROUNDTABLE

1400 BUSINESS MEETING

- Assignments to committees, panels and workgroups
- Review of action items pending
- Suggestions for the 1996 Agenda and meeting format, everybody should come to meeting with one idea, preferably in writing.
  (PLEASE REFER TO WORKSHEET ATTACHED)
- Confirm host for 1996 meeting and vote on host for 1997 meeting. Come prepared to volunteer.

1500 ADJOURN

1995 RVOC MEETING

NEXT YEAR'S RVOC MEETING

Please use this form before and during the meeting to record any suggestions you may have for next year's meeting.

Suggestions for agenda items, workshops or guest speakers

Suggestions for changes or improvements to the meeting format or schedule

Clippings, Etc.

COMMENTARY

The Academic Research Fleet

Richard F. Pittenger, RADM, USN (ret.)
Marine Operations
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts

ABSTRACT

The United States Academic Research Fleet is a jewel in the crown of U.S. science. Operated by and for the country's oceanographers, this small fleet of research vessels is efficient and responsive to the ever-changing needs and increasingly global interests of science. Nourished by benevolently engaged federal and state agencies, the academic fleet provides quality afloat facilities for our extensive coastal waters (including the Great Lakes) as well as the "blue" waters of all the world's oceans.

INTRODUCTION

The United States academic research fleet is a unique jewel. No other country comes even close to matching this fleet in either size, condition, diversity, or capability. Most other research vessels are government owned and operated. The University-National Oceanographic Laboratory System (UNOLS) fleet reflects the nation; it is a loosely organized amalgam of private, state, and federally owned vessels that compete entrepreneurially in an extremely collegial fashion to provide services to its constituents, the ocean scientists.

THE ACADEMIC RESEARCH FLEET TODAY

Dedicated academic ships are a relatively new phenomenon. There were no dedicated ships until the early 1930s and the military provided most of the research vessels through World War II and into the 1950s. However, today the fleet has grown in numbers and in quality, and enjoys remarkable safety and performance records.

The configuration of the fleet is driven by science needs. A product of continuing evolution, the UNOLS fleet now comprises twenty-seven ships operated by nineteen separate institutions. Scientists participate actively in every phase of the fleet operations from sitting in on committees that draft ship design specifications, to design and procurement of scientific tools for ship board use to ship scheduling, inspection, and safety standards.

The user community is involved and sets the standards. This user to operator to funding agency connection is extremely important and effective. By having the ships operated by oceanographic institutions, quality of service provided is assured. The users are able to directly oversee ship operations. This modality also results in distributing the fleet throughout the community with enormous advantages (and a few disadvantages). The following details point out several of the advantages of a distributed fleet.

- Direct contact with the scientists and technicians who use the ship with constant feedback on performance and ideas for improvements.
- The feeling of ownership and pride of performance that comes from being members of the oceanographic community.
- Cost management: Because ship operating costs and science funding come from the same pot, the ocean science community as a whole shares mutual goals in keeping costs within reasonable bounds. Federal agency representations play an appropriately strong role in this process.
- Constituency: The ships become magnets for state, regional, and federal programs. Operating institutions become advocates for facility funding.
- Research and education are enhanced at the local level. Quality ships attract quality people into oceanography.
- Smaller vessels, because of their short range, need to be distributed on a regional or institutional basis—it would be impractical any other way.
- Composition of the academic fleet offers significant opportunities for cost sharing from non-federal and non-governmental sources. This cost sharing typically amounts to $1-2 million dollars annually.
- Additionally, the local presence and availability of vessels invites and enables marine scientific instrumental testing and development.

The downsides occuring from this distributed fleet are emphasized by the following points.

- Cost: There are some minor inefficiencies of distributing the fleet mostly stemming from the requirement for duplications of shore-side infrastructure.
- Unevenness of quality: More often, however, these are differences in standardization. The overall quality remains high.

Parochialism: in-fighting over who gets the assets can have a negative effect on cohesiveness and common purpose, however, competition can be healthy and invigorating as well.

In the "old days," the fleet was small and operated as a "home" fleet by and for a few large institutions, but this model had many flaws, principally being unfair to the "have not" institutions that wanted to participate in the growing field of oceanography. The home fleet model tended to be driven to a certain extent by ship (expedition schedules) rather than by science needs. And the reality of ship operations is that they are expensive; community use is an economic necessity. The formation of UNOLS in the early 70s overcame many of the home fleet model problems, namely:

- Community-wide scheduling is more efficient and equitable;
- Standards set by the community through UNOLS enhance fleet effectiveness and afloat safety;
- Spreading the wealth improved the overall effectiveness and responsiveness of the academic fleet; and
- UNOLS provides a powerful voice for the community.

However, the challenges ahead are many and large for UNOLS for the following reasons:

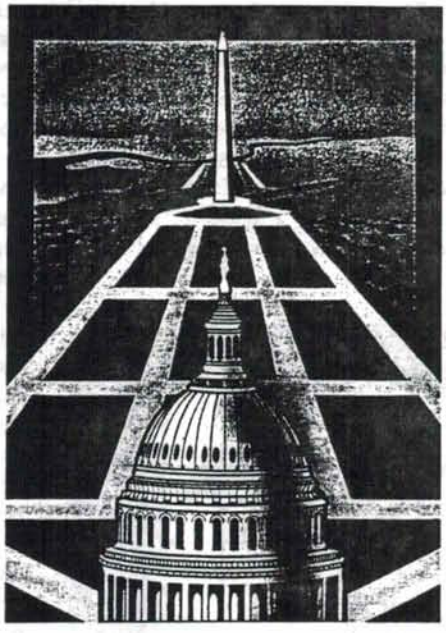
- Managing growth to match both science needs and funds;
- Anticipating and advocating new facilities to support new science needs; and
- Keeping the precious spirit of collegiality in balance with the inevitable pressures of competition.

SUMMARY

The UNOLS fleet continues to be a unique and essential part of the national system. Further development should strengthen the already close relationship between the ships and the science they support.

National Academies Issue Joint Report; DoT/DoD Cooperation

Hale Montgomery
Washington Editor, *GPS World*



A prestigious, national academies' report on the future of GPS starts with the blunt recommendation that selective availability (SA) be shut down. From that point, the report finds that enormous benefits can flow to civil users. System changes could be implemented that would make five-meter accuracies routinely available to civil users anywhere, greatly expanding the global growth and utility of the U.S. system in the next century.

NATIONAL ACADEMIES

The findings, part of an independent report issued jointly on May 31 by a panel of the National Academy of Public Administration (NAPA) and a committee of the National Academy of Sciences' National Research Council (NRC), cover management, financing, and technical policies governing the future role of GPS.

Mandated by Congress, the 332-page study, almost a year in the making, may help frame debate over new national policies for GPS. The Senate Armed Services Committee is expected to conduct public hearings on the report, perhaps after the August congressional recess. The Pentagon showed a lack of enthusiasm for some portions of the report; sources in the administration, which is conducting its own policy review of GPS at the White House level, welcomed the report but did not endorse any recommendations.

Riding a Tiger. The report ranged across the breadth of GPS contradictions: its political attractiveness in the United States as a stunningly effective dual-use technology, its ominous status in some other countries as a U.S. military-dominated navigation tool, its steadily growing stature in the world civil community as a valued utility. The following list includes some of the major findings.

- Management and operation of the system ought to remain with the Department of Defense (DoD).
- The use of SA by the military to degrade the civil signal and limit accuracy to about 100 meters as a matter of national security is a bankrupt policy. SA has been used too long as "a crutch" by the military to support the belief that other users couldn't achieve the precise positioning (21 meters) available to military users. But because of the relatively cheap and widespread deployment of differential GPS (DGPS), among other advances, "military usefulness of SA is severely diminished." Instead of SA, the military should pursue strategies to *deny* unencrypted civil signals on the L1 carrier through local or theater jamming of L1.
- A major system augmentation consisting of a new signal freely available to civil users, identified as L4, should be considered and added to the Block IIR and IIF spacecraft. It would allow for corrections of signal errors caused by ionospheric interference. Such a modification would improve accuracies of a typical GPS receiver, from about 30 meters without SA to about 21 meters.
- For the military, improvements in the master control system on the ground — largely software and some operational changes to improve the knowledge of satellite location and time — will result in improved accuracies of military receivers, to about four meters. (The same changes, of course, would also benefit civil users.) Military antispoofing techniques should be retained. A new direct Y-code capability should be added to all military receivers. This would allow them to receive encrypted data on the L2 carrier directly without needing to use the civil signal on the L1 carrier, which might be jammed, to acquire or "lock on" to GPS satellites. No costs were provided.
- A GPS Executive Board for stronger and more effective management of the system should be created. Besides the Department of Transportation (DoT), membership would include State, Commerce, and Interior. Other nations should be given a "voice in deliberations about the future of GPS."
- Suggestions of direct user fees, taxes, privatization, or sale of the system should be rejected. *No* recommendations were made to add more satellites to the constellation.

Balancing Growth & Risk. NAPA and NRC participants admitted they entered the study as acolytes with one assumption in mind: the integrity of the system as a military resource must take first priority. But attitudes changed as the study progressed.

They found explosive growth in the commercial sector: nine out of 10 GPS receivers today are being purchased by civil users. The GPS commercial market is almost doubling every two years, growing, according to a study commissioned by the group, from an estimated $2 billion global market this year in products and services to $31 billion by 2005. About 55 percent of the market today in receiver sales is overseas. But SA serves adversely as an inhibiting force on the market. Estimates projected that the North American GPS market will be about $4.6 billion in year 2000 with SA on, compared with about $8.5 billion *sans* SA. Furthermore, SA serves as a negative inducement: it encourages other countries to consider building competitive systems.

Having discovered the awesome reach of the civil market, study leaders decided any review of GPS had to consider the economic and social benefits equally with the military risks and not view them separately.

In some instances — such as the recommendations to kill SA and the formation of a GPS Executive Board to give civil authorities a more equal say in system management with DoD — the civil side clearly benefits. In others — such as leaving primary management, operation, and financing of the system with the Pentagon — the military position is preserved. Nothing in the report requires legislation for implementation — with the possible exception of congressional funding for the various recommended enhancements.

Play the Hand. Reflecting the esteem GPS has gained, at a press briefing on the report,

James Schlesinger, chair of the NAPA panel, used phrases such as "a fascinating technology," "stunning capability," "remarkable dual-use technology," and "exploding market for GPS services." Laurence Adams, chair of the NRC committee, said GPS as a standalone system could go from 100-meter accuracy today to 5 or 6 meters, if SA is turned to zero and recommended enhancements to the system's satellites and ground segment are implemented. Adams said the entire scale of such improvements wouldn't be available until after 2000, even if approved now. He saw no reason for the Federal Aviation Administration (FAA) to delay its Wide Area Augmentation System (WAAS), even in the face of a potential free five-meter capability. "The urgency of WAAS is sufficient to go ahead with deployment of the system," he said in response to a question. The initial phases of WAAS are to be operational in 1997 or 1998.

Hedging a Bit. The report, of course, advocates a flexible strategy; it contains sufficient fudge factors. While proclaiming the need for greater international sharing, the report is deliberately vague on how this is to be accomplished. Technical recommendations for a new carrier, or L4, acknowledge that no specific L-band frequency has been allocated for this service, posing a potential delay in implementation. It also requires additional funding in a budget-cutting environment.

Study leaders hope the recommendations will influence the Air Force to allow for inclusion of an L4 carrier in the upcoming big buy of 51 next-generation Block IIF spacecraft, and to also consider modifying about half of the Block IIR satellites at a cost estimated at $1.3 million each. The first IIR is scheduled for launch in 1997.

The recommendation for a new bureaucratic command layer — the proposed GPS Executive Board — doesn't mention the existence of a very similar government structure now in place, and working well (see "DoT/DoD Cooperation" directly below). Here again, supporters hope the report's findings — they are advisory, not mandatory — influence government policies, in this case, the ongoing White House reviews of GPS.

DOT/DOD COOPERATION

A new spirit of cooperation has broken out between military and civil government departments over GPS. The bureaucracy in recent years has been sorely lagging behind the technology; the NAPA/NRC report on GPS (discussed earlier) found fault with that. But now, formal bridging mechanisms exist for more open discussion of differing departmental interests, and even some civil requirements are flowing across to military planners.

At DoT, Frank Kruesi, assistant secretary for transportation policy, is one of those who worked intensely to resolve differences last winter between DoT and DoD over satellite broadcasts of DGPS data to civil aviation users. "There had been some issues brewing in the civil and military sides for some time," Kruesi acknowledged in an interview with *GPS World*. "Both sides worked very hard to make sure we understood what those issues were, understood what it would take to resolve them, and [created] a timetable to do so. We succeeded in reaching an agreement. I think that is a major accomplishment and a lot more fruitful — even though it involved lively discussions — than keeping issues abstract and nebulous."

An Openness. Although GPS has the mantra

of a dual-use technology so admired in the current administration, military–civil cooperation on the program still remains a work in progress. Beyond that, the NAPA/NRC report (see earlier) criticizes DoT as "still a relatively weak partner to DoD." The report suggests a new GPS Executive Board be created to strengthen civil management. But DoT officials feel that mechanisms now are in place, and functioning, to bring greater openness and improved management.

One such mechanism, the Operational Requirements Document (ORD), is a sort of wish list, a compilation of improvements that various civil agencies would like to see in GPS, still owned and operated by the military, to enhance the system's utility for civil users. For example, an early suggestion from the National Aeronautics and Space Administration (NASA) that the standard C/A-code be transmitted on the L2 (military) carrier as well as the L1 has won widespread support. This relatively simple modification could reduce errors in the signals caused by ionospheric delays, resulting in significantly improved accuracies with the use of dual-frequency receivers. Look for this to be included by Air Force contractors in the specifications for the Block IIF GPS spacecraft.

No one expects all items in the ORD to be implemented. In fact, Kruesi indicates system enhancements or augmentations to meet specialized civil needs face tough tests for credibility and funding. "Enhancements are wonderful, but they cost money," he declared. "Certainly much should be done, but we may be better off gaining assurance of what we already have and making the widest possible use of it."

The ORD is being compiled by civil liaison personnel now assigned to the Air Force Space Command in Colorado Springs, Colorado. It demonstrates, at the least, that the military and civil sides are talking, trying to understand the other's needs. At the best, it helps the military design a flexible, cost-effective system that will accommodate civil augmentations in the future. That's important to civil users because the IIFs can be expected to be operational to the year 2025.

In contrast, three months ago, Pentagon concerns threatened to kill FAA's WAAS because of the system's DGPS accuracy component. The program is now on track, although more than three months behind schedule; it is expected to cost close to $500 million. It's a civil augmentation funded by a civil agency.

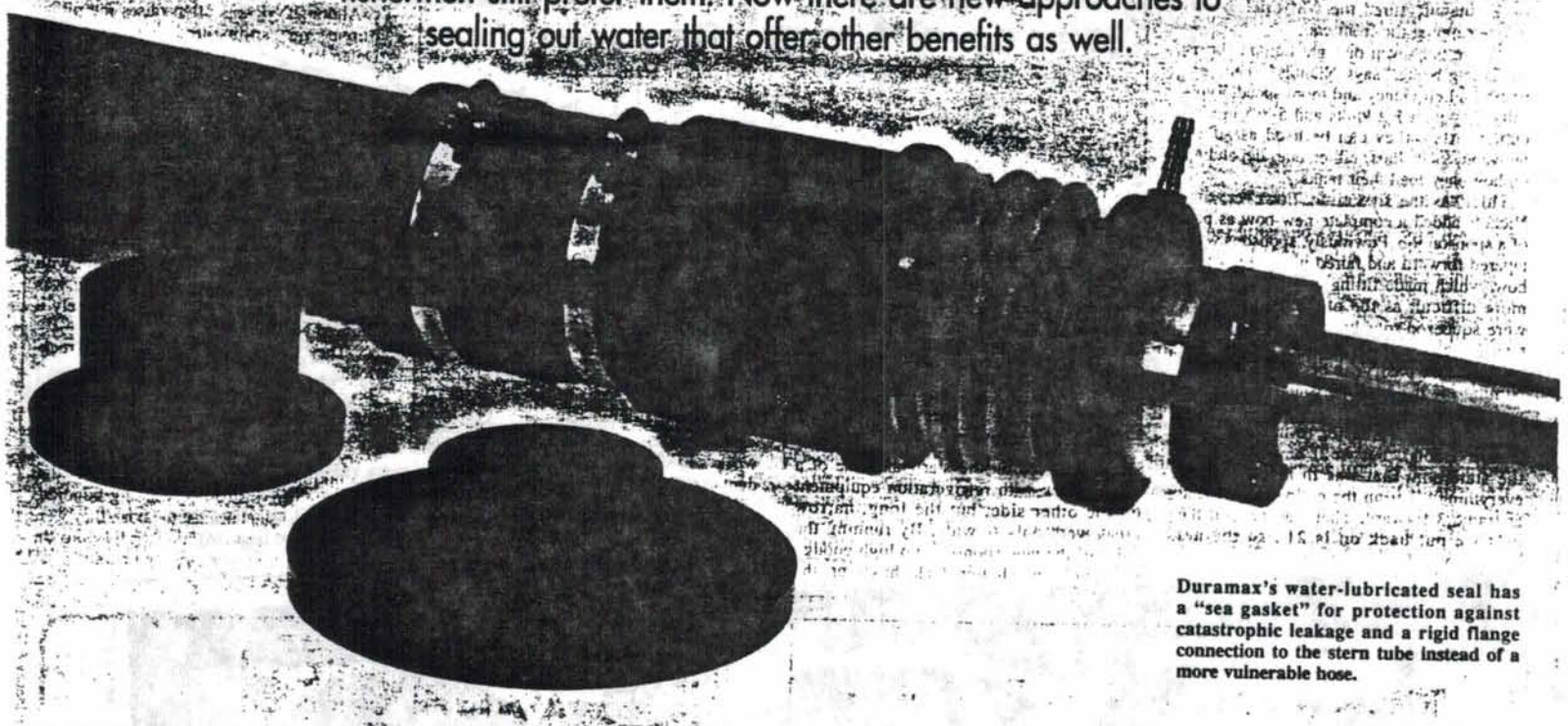
"We are now making a major investment," Kruesi notes. "We are full partners with them [DoD]. They have their needs, we have ours, and we work closely with them to make sure both the civil and military needs are recognized and accommodated. I think that the relationship is extremely good."

Kruesi chairs DoT's Positioning/Navigation Executive Committee and is a civil agency spokesman and counterpart to a same-named DoD committee headed by Paul Kaminsky, undersecretary of defense for acquisition and technology. The committees constitute still another working mechanism searching for shared positions on GPS.

Beyond this, a subcommittee of the Federal Geographic Data Committee directly advises the executive committees, providing input from a wide range of civil agencies. In addition to DoT, State, Commerce, and Interior, the subcommittee includes Agriculture, DoD, the Environmental Protection Agency, and others. ■

Dripless systems put a new spin on sealing propeller shafts

For years, stuffing boxes have been the only game in town — and many fishermen still prefer them. Now there are new approaches to sealing out water that offer other benefits as well.



Duramax's water-lubricated seal has a "sea gasket" for protection against catastrophic leakage and a rigid flange connection to the stern tube instead of a more vulnerable hose.

"I would never even consider putting one of those dripless things on one of our big fish boats," says a veteran Seattle-area boatbuilder. "On a yacht they're great, but not on a commercial application where it's down underneath a load of fish. A stuffing box is just more reliable."

Calls around to Puget Sound boatyards revealed some similar opinions, plus the claim that most fishermen prefer to stick with what they already know. Other fish-boat owners and builders, however, have come to question continued dependence on the "old reliable" method of sealing shafts.

"Nobody does a good job of adjusting stuffing boxes," says Keith Whittemore of Kvichak Marine Industries Inc. in Seattle. "Instead of doing a good job of greasing them and packing them correctly, they tend to just tighten them down, and slowly but surely you run out of shaft."

Use of packing inside a tube surrounding a spinning shaft reportedly first appeared in windmills and was later adapted to water-borne vessels with the advent of shaft and propeller propulsion systems. The packing gland is either rigidly or flexibly mounted on the shaft log with the shaft passing through it. Rings of greased material are stuffed down inside the gland so that, when a threaded cap screwed into the open end is tightened, it forces the flax against the shaft and seals out almost all the water. Only enough water to provide lubrication can get through.

But, if too much pressure on the cap is exerted, no water gets through and the resulting friction of the dry packing can damage the shaft. On the other hand, if the nut is too loose, water leaks into the bilge. Picked up by the exposed shaft spinning at high r.p.m., the water sprays everything in the engine room like a rotating lawn sprinkler.

Stuffing boxes, therefore, are often a source of frustration and, if left unattended, can cause drive-line problems and/or flooded engine rooms. In fact, Kvichak quit using them and began installing the PSS dripless shaft seal from PYI Inc. of Edmonds, Wash., two years ago. They are now standard equipment on all Kvichak's Bristol Bay gillnetters, longline combination boats and oil-spill response vessels.

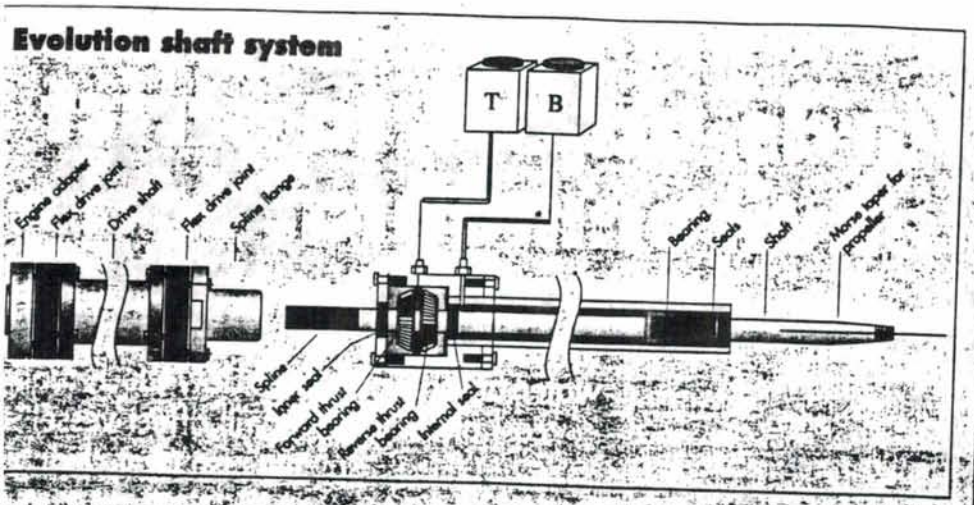
"With a dry engine room you know when you've got a problem," says Whittemore. "The other reason we use them is that they require absolutely no service whatsoever. You put them in and that's it. We are absolutely satisfied with them."

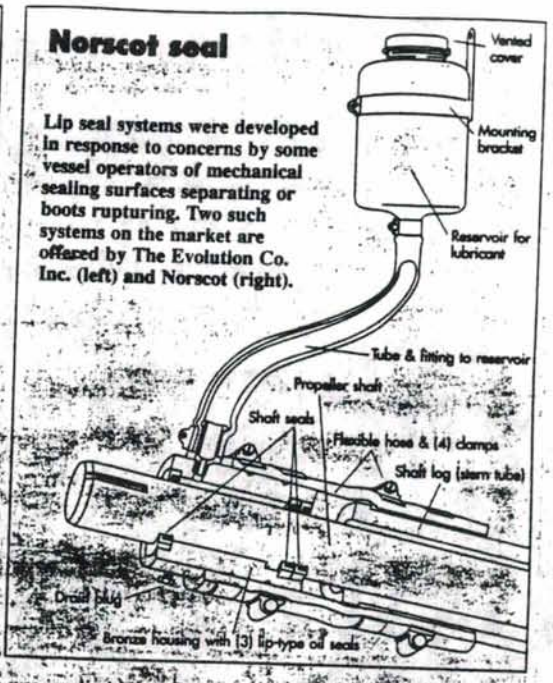
Enter the Dripless Seal

So, what are these dripless shaft seals that promise to eliminate wet bilges, reduce wear and tear on shafts and offer maintenance-free durability? There are two general design categories: one is based on mechanical seals, while the other uses lip-type seals.

Mechanical seals have a flexible boot or bellows attached to the end of the shaft log. A hard, machined surface serves as a stationary flange. Then a sealing ring or rotor is clamped directly to, and rotates with, the shaft. The sealing ring or rotor may be made of stainless steel or maybe another boot with a machined surface.

The boot's built-in resistance to compres-





, plus the water pressure inside, forces two surfaces (flange and sealing ring) ther and forms the seal. Water from the t log lubricates the rotating face, and els designed for high speed applications which water is sucked out of the shaft — have fittings for injecting water from engine's raw-water supply or external ps under the hull.

an engine is properly installed and ed, mechanical seals will stop leaks suit danger of damaging the shaft. Aside routine inspection, no adjustment or enance is required, either.

e big advantage for commercial fisher- men aside from having a 100% watertight seal is that you completely eliminate wear and tear on your shaft," says Daniel Schalk of PYI. "In Bristol Bay the silt and sediment that gets up in the packing would increase the owner's down time substantially, not to mention the cost of reworking the shaft."

But some mechanical seals have had problems — not because of the seal itself, but as a result of operating conditions and/or improper engine installation and alignment. For example, soft-mounted engines may move around enough to break the seal, and although most seals have a degree of tolerance, misalignment of the machined surfaces or improperly installed O-rings can cause failure, too. Some boot material is also vulnerable to damage when stepped on or hit with falling objects, or it may be inadvertently repositioned in such a way as to leak.

George MacDonald, who was involved in the design of mechanical seals for Lasdrop (now known as Specialties Inc.) and Real Seal, sold his own product as MacSeal until his company was bought out by Duramax Marine. He admits that all face seals work, but says what he has now developed for Duramax is unique in that it has a "sea gasket" for redundant protection against catastrophic leakage and uses a rigid flange rather than a more vulnerable hose for connection to the stern tube.

"If you have a seal face failure," he says,

(Continued on page 76).

(Continued from page 35)

"they don't explode. They just drip like a stuffing box. Your biggest exposure is where a hose goes onto the stern tube, whether it be a stuffing box or a mechanical seal. We make a flange that will bolt right up to the boat, or a through-hull if you're building new construction."

Its Lips Are Sealed

Despite the testimonials for mechanical seals in some fishing and work-boat applications, the fear of having the sealing surfaces separate or the boot material rupture — causing engine room flooding — still keeps many fishermen and builders from trying them. Lip seal manufacturers attempt to address this concern by using a seal similar in concept to the oil seals used for decades in automotive engines and transmissions.

A cylindrical housing made of hard plastic, bronze or steel encircles the shaft and fastens to the shaft log. The inside of the inboard end, or both ends on some models, is recessed to hold the seal, while a bearing in the middle maintains proper alignment. Water-lubricated seals tap into an external source, such as the engine cooling system, while other lip-type seals are typically lubricated with oil from a gravity-feed supply.

Failures associated with lip seals, as with mechanical seals, usually involve improper installation. The seal may not be positioned or seated properly, or the lip may be rolled under when slid onto the shaft. Blemishes and grooves in the shaft surface will also cause the seal to leak. However, none of these situations is likely to create a problem any more serious than a leaky stuffing box.

Another source of possible failure with either a mechanical or lip seal is the vulnerability of material at the sealing surface to extreme high temperature. For example, if lubrication is suddenly lost while underway (the raw water intake is blocked, oil is low, etc.) and the seal runs dry, heat from the resulting friction at the face of a mechanical seal or on the shaft with a lip seal could cause warping and/or melting.

Bob Gorgen reports successful installations of the Norscot lip seal he developed for the Ibsen Co. of Seattle on approximately 50 commercial boats, including replacement of a few mechanical seals because of his seal's greater tolerance for misalignment. Although the oil-lubricated bearing, lip seals and shaft turn with almost zero friction, he notes that his seals require the hardness of a stainless steel or even chrome-plated shaft to avoid wear.

The Evolution Co. Inc. of Rockland, Maine, takes the lip seal concept a step further and offers a complete shaft system. The advantages, according to company president Alan Carr, include not only a dripless seal, but reduced vibration, less noise and improved efficiency.

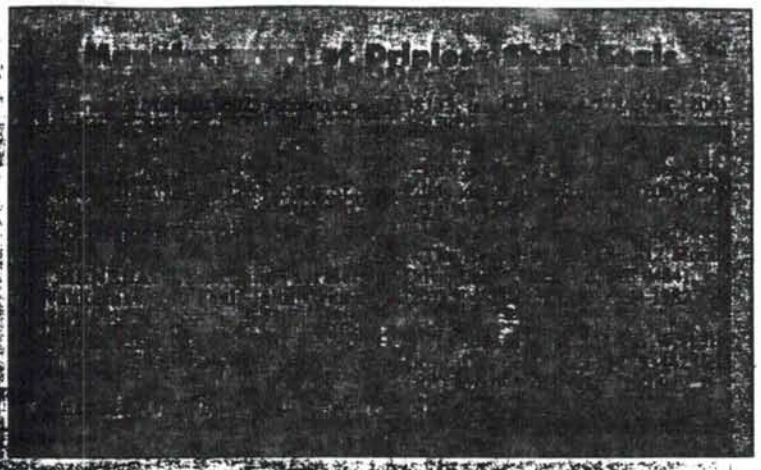
"It includes a shaft enclosed in a stainless steel tube down to the back of the propeller," he says. "That tube has a high-tech bushing, needle bearings, thrust bearings for forward and reverse and five double-lipped seals. That's the oil-lubricated section which pierces the hull. The other component connects the drive shaft within the vessel and allows the engine to free-float and compensates for any misalignment."

The choices for any boat owner considering a dripless replacement for a stuffing box are many and varied. In addition, the cost of all these alternatives ranges from around $240 for a basic PSS mechanical seal on a 1 1/2" shaft to over $4,000 for a complete Evolution Co. 2" shaft system. Just the complexity of making such a choice, along with what some believe is a fisherman's innate resistance to change, may serve to let a lot of old stuffing boxes stay where they are.

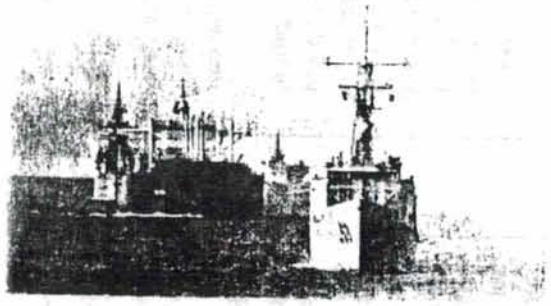
On the other hand, this aspect of operating a commercial fishing boat, like many others, may soon be impacted more by environmen-

been on a fishing boat that didn't have an oily bilge," says Gorgen. "When fishing boats sit for long periods with a dripping stuffing box, they have to be pumped out, and pumping oily water over the side is getting stickier all the time. I think the Coast Guard is going to get tougher and tougher, but a fisherman can't feel comfortable leaving his boat unattended for long periods if he knows there is no water dripping into his bilge and nothing to be pumped out."

So, it might be prudent to at least take a good look at dripless shaft seals. Each manufacturer has literature and graphics available to show how their particular products work. Although some have experience only with pleasure boats, others also have a track record in the commercial fishing and workboat markets which can be checked, along with their testimonials from satisfied customers. Carefully evaluate the alternatives in terms of your own specific application. □



NAVIGATION INFORMATION NETWORK (NAVINFONET)



Prepared and published by the
DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
Bethesda, Maryland

NAVINFONET

THE REMOTE QUERY MARINE INFORMATION SYSTEM

The Defense Mapping Agency, in carrying out its mission to produce the Notice to Mariners, has developed the Consolidated Navigation System (CNS). The CNS consists of several databases containing information dealing with various aspects of navigational safety, from broadcast warnings to chart and light list corrections. The software developed for these databases provides remote query capabilities, 24 hours a day, to both the civilian and military maritime community through the Navigation Information Network (NAVINFONET) computer system. NAVINFONET can be accessed using voice grade telephone circuits (including INMARSAT voice circuits) and commercially available computer communications hardware and software. All present users of DMA's navigation publications can benefit from the increase in data accessibility and the decrease in notification time. The reverse side of this brochure provides a flow diagram of the present communications options and a form to request a NAVINFONET User ID and Users Manual. Greater detail of all aspects of the CNS and NAVINFONET with its various communications options is provided in the NAVINFONET Users Manual.

Selections Available

The following menu selections are currently available:

Query	Category
1	System Mailbox Utilities / Messages
2	Chart Corrections
3	Broadcast Warnings
4	DMA List of Lights
5	Anti-Shipping Activity
6	Mobile Offshore Drilling Units
7	Catalog Corrections
8	USCG Lights and Electronic Aids
9	Radio Navigational Aids

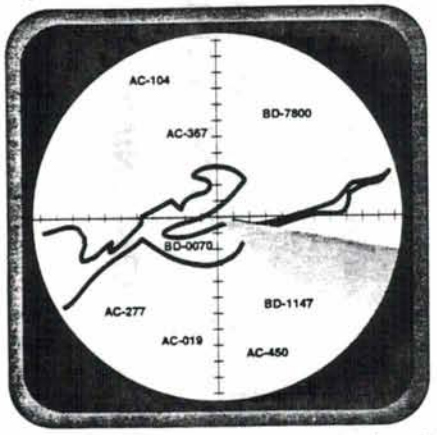
Requesting a User ID

To obtain access to NAVINFONET, fill in the mail-in portion of this brochure. You will receive a User ID (required to access the databases) and NAVINFONET Users Manual listing all of the available services. If you have any questions or require immediate access to this service, contact the NAVINFONET Staff at (301) 227-3296, weekdays between 6:00 A.M. and 3:00 P.M. E.S.T. or (301) 227-3147 after working hours.

INCOMPETENT USE OF ARPA MAY CONSTITUTE UNSEAWORTHINESS

By:T. Keith Marshall

ARPA is an acronym for Automatic Radar Plotting Aid. It is a sophisticated piece of navigation equipment found on the bridge of most ocean-going vessels that combines a traditional radar display with a computer driven plotting device. After either manual or automatic acquisition of radar targets the ARPA will compute and display a variety of information useful to the navigator in making collision avoidance and navigational decisions. It is indispensable when navigating in areas of high traffic density such as the Straits of Mollucca or the English Channel, especially in restricted visibility.



All ARPA models display basic collision avoidance data: CPA (closest point of approach), TCPA (time to CPA), range (distance) and bearing (direction) to the target of interest, and target course and speed. The most advanced models will allow a nautical chart of the area being transited to be electronically overlaid upon the radar display so that by looking at one screen the navigator can see where he is with respect to the charted channel as well as view stationary and moving targets that may pose a threat to his planned navigation. The designers of these systems often include far more features in them than most operators will ever use.

Though some operators will explore the most advanced features of their ship's ARPA, few will use them on a regular basis and many more are content with a mastery of only the basics. With a properly set up ARPA at his disposal and competent and informed use of its features, the navigator should be able to avoid virtually all collisions. However, we all know that collisions continue to occur.

During a post-collision investigation, inquiry into how the ARPA was set up and being operated may reveal negligence by the operator that will assist your client in recovering from what is almost always a mutual fault loss. Each percentage point of fault you build against the other vessel will assist your client in loss recovery when it comes time for the court to apportion damages. United States v. Reliable Transfer Co., 421 U.S. 397, 1975 A.M.C. 541 (1975).

In some instances it may be possible to go one step further. When an owner faces losses in excess of the value of his post-collision hull, he may seek to limit his liability pursuant to the Limitation of Liability Act, 46 U.S.C. 181 et. seq. One way to defeat the owner's petition is to prove that the vessel was, with the owner's privity and knowledge, unseaworthy at the time of collision and that the unseaworthiness was the proximate cause of the collision. 46 U.S.C. 183(a). When an owner crews his vessel with persons not up to the standards of their calling, he has not sent her to sea in a seaworthy condition and limitation may be denied. Tug Ocean Prince, Inc. v. United States, 584 F.2d 1151 (2d Cir.1979), cert. denied, 440 U.S. 959 (1979). Gross negligence in use of the ARPA may be grounds for a claimant to challenge limitation on the basis of unseaworthiness.

That was precisely the issue before the court in Complaint of Waterstand Marine, 1991 A.M.C. 1784 (E.D. Pa. 1988). There the owner of the SEAPRIDE II had furnished her with a Master not fully trained in the use of ARPA. As the vessel made its way down the Delaware River in fog under direction and control of a compulsory pilot, it allided with a tower supporting high-voltage transmission wires across the river. When the vessel's owner petitioned for limitation of liability the utility company that owned the tower challenged the petition based on unseaworthiness due to the vessel carrying a Master and Pilot untrained in the use of ARPA. Limitation was denied. 1991

(Continued on page 5)

(Continued from page 4)

A.M.C. at 1800-01.

The owner had equipped his vessel with an ARPA as required by Chapter V Regulation 12 of the Treaty on Safety of Life at Sea (SOLAS)(codified under U.S. law at 33 U.S.C. §1223(a)(3); 33 C.F.R. §164.38 App. A, ¶3.4.6). The court held that mere equipping of the vessel with ARPA was insufficient. The owner had nondelegable duty to also provide his vessel with persons trained in ARPA operation. 1991 A.M.C. at 1799. Failure to do so rendered the vessel unseaworthy. The unseaworthiness was imputed to the shipowner and found to be within his privity and knowledge because of his failure to select a proper crew at commencement of the voyage. 1991 A.M.C. at 1800.

While almost all vessels are properly equipped as a result of vessel inspection laws, there is no similar requirement that each mariner prove his or her competence before joining a vessel. Owners often hire third-world citizens untrained in the use of modern electronic equipment through hiring agencies totally sight unseen. Investigation into the hiring practices used and the actual skill of the mariner involved in a collision may yield ammunition for challenging a limitation petition based on crew unseaworthiness. In extreme cases, negligent ARPA operation may be so gross that it is tantamount to unseaworthiness within the privity and knowledge of the vessel owner.

Owners would be well advised to ensure that they furnish their vessels with competent, qualified, and fully trained personnel to operate this invaluable electronic navigation and collision avoidance tool. A consultant well versed in ARPA operation can assist the attorney in detecting weaknesses in this area. Conversely where opposing counsel is challenging your vessel's operation of the ARPA or any other navigation equipment, a knowledgeable consultant may be able to assist in proving that the equipment was being operated properly. In a perfect world there would be no collision between vessels, but even in this modern electronic age it seems certain that they will continue to occur.

Author is a USCG-licensed Master Mariner sailing with District 1 MEBA and affiliated with MEC as consultant. He is a 1994 graduate of Tulane Law School and resides in Charleston and New Orleans.

COAST GUARD MARINE SAFETY PUBLICATIONS

Coast Guard publications provide guidance to maritime personnel on all aspects of the Marine Safety Program. To persons evaluating an incident involving U. S. vessels, and in some cases, foreign vessels, these are an important resource of requirements and standards which are applicable. Following is a brief description of available publications and computer information.

Proceedings of the Marine Safety Council

The bimonthly magazine is published by the Coast Guard's Office of Marine, Safety Security and Environmental Protection in the interest of safety at sea under the auspices of the Marine Safety Council. It addresses various broad policy areas, proposed regulations, Coast Guard programs, and casualty reviews. Address requests for subscriptions to: Editor, Proceedings Magazine, U. S. Coast Guard (G-MP-4), 2100 2nd St SW, Washington, DC 20593-0001. Free.

Marine Safety Manual, 8 volumes

This manual is the bible for Coast Guard marine inspection and Captain of the Port personnel. It sets forth information about the interpretation and application of Coast Guard regulations and policy. The volumes are loose leaf and updated periodically. Individual volumes may be obtained from the Government Printing Office (GPO) as can annual subscriptions for revisions.

MSM Vol I	Administration & Management, $76 stk #950-037-00000-8
MSM Vol II	Material Inspection, $92 stk # 950-038-00000-4
MSM Vol III	Marine Industry Personnel, $57 stk #950-039-00000-1
MSM Vol IV	Technical, $73 stk #950-040-000000-9
MSM Vol V	Investigations, $50 stk #950-041-00000-5
MSM Vol VI	Ports & Waterway Activities, $76 stk # 950-041-00000-5
MSM Vol VII	Port Security, $74, stk #950-065-00000-1
MSM Vol X	Interagency Agreements & Acronyms, $48 stk #950-043-00000-8

NVICs

Published periodically, Navigation and Inspection Circulars (NVICs) inform the marine industry and the public of specific Coast Guard policies, regulations and their interpretations. They may be purchased individually or as a full set by the calendar year. The annual subscription fee from the GPO is $38. Individual prices vary. Copy of previously issued NVICs can be obtained from USCG Marine Safety Center, 400 7th St SW, Washington, DC 20593-0001, attn: Janice McKenzie.

Equipment List

This is an index of equipment which has received Coast Guard approval or certification for use on inspected vessels. It can be obtained from the GPO for $12 stk #050-012-00-8.

MSIS

The Marine Safety Information (computer) System (MSIS) connects all facets of Coast Guard activity concerning the promotion of life, property and environment in the marine domain. MSIS records safety information on Certificates of Inspection and Compliance, and SOLAS documents. It maintains records of vessel casualties, pollution incidents, boardings, inspections, and history of violations of federal regulations on safety and environmental protection.

A magnetic tape of the MSIS data file can be purchased for $453 (including handling) by ordering as follows: Merchant Vessels of the United States PB91-506907 from National Technical Information Service, 5285 Port Royal Rd, Springfield, VA 22161, (703) 487-4650.

(Continued on page 4)

(Continued from page 3)

PSIX

The Port State Information Exchange is an on-line database containing information on vessels calling at U. S. ports. It indicates contacts which the Coast Guard has had with the vessel, violations or deficiencies and specifics on the vessel. The database may be accessed free by the general public through phone number (202) 267-4333. Use the password "psix" in lower case. In order to locate a vessel in the database, you must have either the Official Number of the vessel or its VIN number.

NIS

The Coast Guard Navigation Information System (NIS) bulletin board is a computer accessed data base which contains many interesting sections. The main menu contains sections on:

Preparedness for Response Exercise Program (PREP); Recreational Boating which includes boat recall information; Marine Communications Library which contains IMO, SOLAS and other international documents and minutes; Local Notice to Mariners; USCG National Pollution Funds Center; USCG Public Affairs; and Marine Safety, Security and Environmental Protection Information.

Information can be viewed on the screen or down loaded using one of many protocols.

Access may be had by dialing (703) 313-5910. New users can set up access on line. There is no charge other than the phone call.

The Coast Guard is in the process of redesigning the Automated Local Notice to Mariner system.

In the interim, NIS has developed a Fax on Demand system to serve your needs. Call (703) 313-5931 or 5932 to receive the latest LNM status updates. Assistance may be had by talking to a real person on (703) 313-5900.

MEC has on-line access to all of these databases and has in its library current copies of all publications listed above.

CHARTER ARRANGEMENTS

The Passenger Vessel Safety Act of 1993 has changed the criteria for an acceptable bareboat charter. In the past, vessel owners got around the vessel inspection requirements by chartering their vessels out under bare boat charters, in some cases with crews furnished or with the owner operating the vessel.

The Coast Guard Navigation and Inspection (NVIC) Circular 7-94 explains the effects of the new law as it relates to vessels under 100 gross tons. Persons interested in more details should get NVIC 7-94 from their nearest Coast Guard Marine Safety Office. Failure to follow the new law could not only result in civil or criminal actions against the owners for violation of the law, but in the case of an injury or death, could affect their liability and in some cases, whether the insurance is voidable.

The new law invalidates comments made in previous articles on charters appearing in this newsletter.

One of the most significant changes to the laws for passenger vessels requires chartered vessels carrying more than 12 passengers to have a certificate of inspection issued by the Coast Guard. The following is extracted from NVIC 7-93:

> Bareboat charter agreements have traditionally been used in the maritime industry as a mechanism to allow long-term charterers the ability to assume operational control of a vessel. In these agreements the charterer assumes the rights and liabilities of ownership for the vessel. The charterer is usually responsible for conducting a pre-charter and post-charter vessel survey, providing the crew, and assuming complete operational control of the vessel.
>
> Individuals soon began using bareboat charter agreements for short-term charters (as short as four hours in duration) to carry large numbers of people for events such as wedding receptions, graduation parties, or business meetings. Although these vessels were similar to comparable inspected vessels, under the previous statutes these vessels were neither subject to, nor inspected as, passenger vessels. Previous statutes did not limit the number of individuals that could qualify for the owner (charterer) exception to the definition of passenger and [the previous statutes] also contained an exception for guests carried on vessels being operated only for pleasure. The Act limits the exception for the owner (charterer) to one individual and eliminated the guest exception.
>
> Additionally, many charter agreements allowed the owner of the vessel to either be a member of the crew or to provide the crew. The Act clearly delineates between charters that allow the owner to provide or specify the crew and those that do not. . . . [V]essels chartered with the crew provided or specified by the owner are subject to inspection as a small passenger vessel [when carrying more than six passengers]. . .
>
> The Act provides for Coast Guard inspection and certification of vessels that are chartered without a crew provided or specified by the owner and carrying more than 12 passengers. . .

NOTE: Vessels of less than 100 gross tons carrying more than six passengers, one of which is for hire or are chartered with a crew provided are still subject to inspection. The 12 passenger threshold applies when such vessels are chartered without the crew provided or specified by the owner.

The Act amends and adds several definitions in Title 46 United States Code (USC) Section 2101. The Act provides a single consolidated definition of "passenger" for all passenger vessels. It also defines the terms "passenger for hire" and "consideration," and amends the definition of "passenger vessel," "small passenger vessel," "sailing school vessel," "submersible vessel," "offshore supply vessel" and uninspected passenger vessel."

The goal of the Passenger Vessel Safety Act is to close the legal loophole which allowed owners to charter vessels which did not meet the safety standards of inspected vessels to people who then carried large groups of people.

At the Sixth Annual meeting in October 1994 in Arlington, Virginia, members of the ARCUS Board of Directors and representatives of Member Institutions discussed the importance and current status of the proposed Arctic Research Vessel. Accordingly, participants moved that the Board should prepare and submit a resolution affirming strong support for the vessel. The resolution reads as follows:

ARCUS Resolution on the Arctic Research Vessel

The Arctic Research Consortium of the United States (ARCUS) supports the National Science Foundation initiative to secure an Arctic Research Vessel as a component of the United States Academic Fleet. ARCUS is a non-profit organization with 22 institutional members from universities and laboratories with substantial interest in arctic research. A number of ARCUS member institutions are involved in arctic marine research and have expressed an urgent need for a vessel which would allow effective access for scientific research. Many anticipate using such a vessel extensively. Preference is strongly for a vessel operated through the University National Oceanographic Laboratory System. Additional funding appropriate for the operation and maintenance of the Arctic Research Vessel should be provided. ■

Polar Research Board

Arctic Research Vessel Is High Priority

At its annual Spring meeting in March, the Polar Research Board (PRB) addressed several new and ongoing polar programs sponsored by federal agencies. Arctic reports included:

- current federal-agency arctic research programs,
- review of NSF reorganization plans for arctic programs,
- the April 1995 International Arctic Science Committee (IASC) meeting in Finland,
- the December planning meeting in New Hampshire (see page 11), and
- the status of science and policy discussions regarding the Arctic Research Vessel (ARV).

Because the Board is on record as supporting all efforts that enhance polar science, resolution of problems encountered in ARV planning is of concern. In February, the PRB began a collaborative effort with the National Research Council's Ocean Studies Board to review the science priorities and planning for utilization of the ARV. The joint report is scheduled for completion in 1995.

Antarctic discussion at the Spring meeting covered:

- results and recommendations related to the Scientific Committee on Antarctic Research (SCAR) XXIII meeting in Italy,
- the upcoming Antarctic Treaty Consultative meeting, and
- research problems specific to the Antarctic, including electronic interference at Arrival Heights and the future of the South Pole Station.

The PRB is completing two reports: the study of the scientific and technical understanding of the Bering Sea ecosystem, and evaluation of the 1950s Air Force human-health testing in Alaska using radioisotope Iodine^{131} (see *Witness*, Autumn 1994).

Regarding the Iodine^{131} project, the PRB testified on the scope of its work at a March 1995 hearing of the President's Advisory Committee on Human Radiation Experiments.

For more information, contact Loren Setlow at the PRB in Washington, DC (202/334-3479; fax 202/334-1477; lsetlow@nas.edu). ■

Science, Arctic Research, and the FY96 Federal Budget

It was the best of times,
It was the worst of times,
It was the season of darkness,
It was the Spring of hope.

–Charles Dickens

The President's fiscal year 1996 budget, presented to Congress in early February, proposed termination of 130 programs, consolidation of 271 others, and reductions in many more to achieve savings of $144 billion. The outlook for science and technology, however, is bright. The budget preserves science and technology as necessary investments, with total research and development funding increasing slightly despite general cuts in discretionary spending.

In the federal budget, important investment areas for science and technology include:

- improved understanding of the environment;
- health, agriculture, and food research;
- education and training; and
- support for new information technologies.

Scientific research will continue to play an important role in enhancing national security for the United States.

Proposed changes in overall research and development funding range from an increase of 15% for the Environmental Protection Agency to decreases of 3.1% for the Department of Defense and 3.6% for the Department of Agriculture.

The NSF budget increases by $96 million. This is good news for science, and there is even better news for arctic science. Most NSF arctic research is in the Office of Polar Programs and the Geosciences Directorate. In the Office of Polar Programs, NSF proposes to increase arctic research 23.5% to $31.5 million. In Geosciences, NSF has requested $451 million, a $32-million increase. Some of this will go to arctic research. Additional NSF arctic funding is in other programs including biological sciences and engineering.

Total federal research funding specifically for the Arctic will decrease slightly, from approximately $173 million to $169 million in fiscal year 1996 (see table). This reflects the end of special funding for the Department of Defense Arctic Nuclear Waste Studies Program. This program, mandated by Congress, received $10 million per year in fiscal years 1993-1995. Defense did not request funds for this program beyond the current fiscal year.

In the present budget climate, the arctic science community will need to develop new criteria for measuring the accomplishments of individual agency arctic research programs. No longer will it be sufficient to use a simple formula based upon more funding for research each year as the measure of a successful agency program. The criteria may well become:

- Does the program promote interagency cooperation?
- Does the program promore international cooperation?
- Has it reduced duplication of effort?

Coordination of interagency and international programs and funding may leverage US science dollars to positive effect.

Although the President's budget contains promising news for arctic science, the proposed funding levels are subject to Congressional action later this year.

For more information, contact Charles E. Myers at the Office of Polar Programs in Arlington, VA (703/306-1031; fax 703/306-0139; cmyers@nsf.gov). ■

Arctic Research Budgets of Federal Agencies

(estimates in millions of dollars)

	FY 1994	*FY 1995*	*FY 1996*
NSF	$38.9	$39.2	$45.2
NASA	47.5	40.5	39.0
Interior	38.0	32.7	33.9
Defense	35.2	33.7	23.2
NOAA	10.3	10.5	10.4
Health and Human Services	6.4	6.7	6.9
Agriculture	5.0	4.2	4.2
Transportation	3.5	2.7	2.2
Energy	2.2	2.0	2.0
Smithsonian Institution	0.7	0.6	0.7
State	0.7	0.6	0.6
EPA	1.2	0.4	0.3
Total	$189.5	$173.6	$169.4

Partners in Prevention

BY ROBERT SMITH, CORRESPONDENT

A new Coast Guard program takes a people-oriented approach to improving safety and preventing pollution.

Historically, design requirements and technical "fixes" have dominated marine safety and pollution prevention programs. Recently, the Coast Guard acknowledged that these approaches are not the sole solution.

The agency has formed a task group to assess how to prevent the types of accidents primarily caused by human error. The group is seeking input from all sectors of the marine industry.

Targeting the human element represents a bold change of direction. And it's about time, according to mariners. They feel the agency has traditionally placed too much emphasis on mechanical and technological causes of accidents and not enough on human factors. These factors include the roles fatigue and manning play in marine accidents.

Marine personnel also feel their experience and opinions on safety and accident prevention have been largely ignored.

"They need to pay attention to what working mariners have to say about safety," said Joe Mier, a Lacombe, La., towboat pilot.

That comment is not without merit, said Norman W. Lemley of the Coast Guard, "and this program is designed to address it."

The program the task group aims to develop is called "Prevention Through People." It will stress finding solutions outside the regulatory process.

Lemley, a retired USCG captain and career civilian executive with the Coast Guard, chairs the task group responsible for setting the program's agenda for the next 20 years. "Without minimizing the importance of mechanical issues in accident prevention, it is time that we focused more on the human element," he said.

Statistics confirm this is a wise move. According to the Coast Guard, recent studies indicate that over 80 percent of all high-consequence marine casualties may be directly or indirectly attributable to human error.

Strong response

The point man for the "Prevention Through People" program at Coast Guard headquarters in Washington, D.C., is Cmdr. Craig Bone. Since January, when the program was announced, Bone has received a steady flow of comments from all segments of the marine industry.

"We've had more than 500 responses — from vessel owners and operators and their associations, masters, chiefs and ABs," said Bone. "We've heard from the towing, offshore and bluewater segments of the industry."

Among those who have filed responses are the American Waterways Operators, Chemical Transportation Advisory Committee, Center for Seafarers Rights and the U.S. Maritime Academy.

This is exactly the type of response envisioned by Rear Adm. James Card, chief of the USCG Office of Marine Safety, Security and Environmental Protection, when he established the task force.

The plan calls for Bone to sort through the responses and submit the results of the information-gathering process to Card for his review. Card is then expected to issue a report in June that will be circulated throughout the industry. The report will be used as a basis for charting a course of action.

The report, however, will not set the stage for new Coast Guard regulations. "This is a non-regulatory process," said Bone. "The goal is to engage all segments — industry, mariners, owners of U.S. and foreign-flag [vessels], and government — in a partnership aimed at reducing accidents."

The program is expected to tackle such issues as vessel working environment, crew fatigue, mariner training and qualifications, and management decision-making and policy-setting.

"We're dealing with issues of manning, fatigue, boredom, distractions, awareness (of safety procedures and systems), and competency errors — mistakes made by people who know better," said Bone.

"There are also vessel design and structural factors which impact human performance,

as well as communications and the way we manage our ports," he continued. "We aren't focusing on any one problem or industry segment, but are trying to identify the highest risk factors first and work through to the whole range of causes and solutions."

To the forefront

Bone emphasized that there's nothing new about addressing the human causes of accidents. It's just that the people element has come to the forefront as mechanical and structural problems have been addressed and dealt with.

Thirty years ago, maritime casualties were often due to structural and equipment failures, such as vessels breaking in half or burning to the water.

"Such problems have, by and large, been successfully addressed by technology and Coast Guard programs of inspection, testing and verification," said Bone. "At the same time, however, the problem of maritime accidents has grown more acute."

The National Research Council estimated that a maritime casualty of $100 million in 1976 would cost $5 billion today. (The main costs of a maritime casualty are cargo, pollution, property damage, injury and death claims.)

More accidents or more reporting?

Mike Vinci, regulatory affairs director at Cenac Towing Inc., Houma, La., is unsure whether maritime casualties are increasing or are simply being reported with greater frequency.

"Since the *Valdez* accident, there has been a much greater emphasis put on reporting even the most minor accident, such as brushing against a piling or spilling a cup of oil in the water," said Vinci.

He added, "When you look at the figures — tonnage versus accidents — marine transportation is still among the safest ways to move goods."

That doesn't mean Vinci thinks the "Prevention Through People" program is unnecessary. He supports the Coast Guard shifting the emphasis to people as a way of preventing accidents.

"In the great majority of cases, it's the people in control of the vessel who determine safety," he said. WB

COMSAT's MobileTrac™ Software Marks The Spot

COMSAT's new MobileTrac™ software allows users to track the location of vessels at sea around the world—24 hours a day, 7 days a week.

From data communications to emergency situations, COMSAT's Inmarsat C-Link℠ service and MobileTrac™ software are an incomparable communications package that keeps managers and mobile earth station (MES) users in constant contact.

In developing MobileTrac™ to meet the demanding and ever-increasing needs of managers to track vehicles, vessels at sea and aircraft, COMSAT has ushered in a new era in the manner by which managers and users keep in touch with one another.

COMSAT's advanced Inmarsat-C MobileTrac™ service utilizes Inmarsat MESs to transmit each vessel's location via Inmarsat-C terminals that feature integrated Global Positioning System (GPS) receivers.

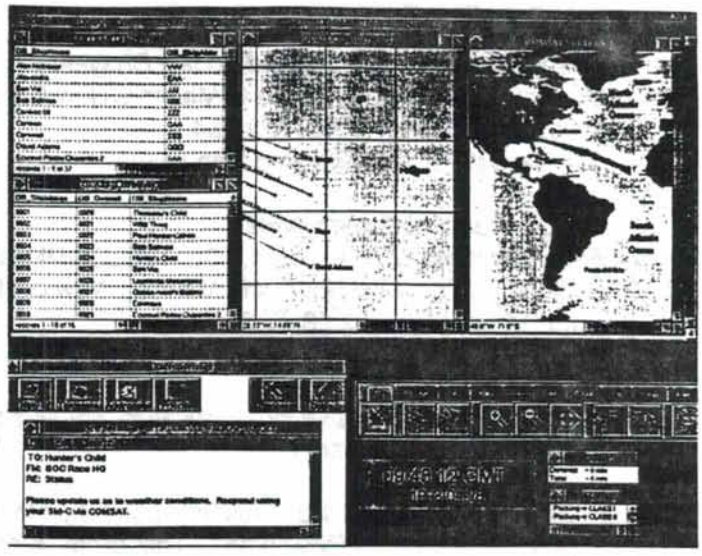
With this satcom system in place, on-shore managers receive the peace of mind that comes from knowing they are in constant communication with their MES users all over the world.

Users also gain peace of mind because they will know their exact location at all times and be assured that they can communicate to and from land, anywhere in the world, 24 hours a day, 7 days a week.

They will be able to send and receive messages, send position reports, receive weather updates, and communicate via numerous electronic mail services or send messages to fax machines.

Other advantages of MobileTrac™ service include:

- *Worry-free, hands-off* reporting that transmits an MES's position automatically at selected or defined intervals and frees users from the task of transmitting their positions manually.
- *Improved on-land management* through instant retrieval of information on each MES position.
- *Enhanced reporting* with numerous options for sharing in-progress information with MES users.
- *Ease of operation* that requires, as a minimum, only an MS-DOS 486 computer, running Windows, and an X.25 connection to run. With icon-driven menus and windows, the service is easy to use and also features multi-window display capabilities for viewing several applications simultaneously.
- *At a glance understanding* of each vessel's progress through statistical capabilities for determining critical status reports such as latitude and longitude, speed and heading. These statistical tables can be displayed in a window or printed out.
- *Selective data retrieval* through an adjustable viewing range that allows land managers to simply move a cursor on an information window to view an MES's progress on a world map or to focus in on a specific MES to get its precise location.
- *Precise measurement capabilities* with the use of a movable "ruler" that can be used to determine the distance between two vessels or other MESs, or the distance between any locations shown on the display.



Thanks to COMSAT's MobileTrac™ service, land managers and MES users on land, in the air and at sea can take advantage of enhanced Inmarsat-C communications to plot the course and location of their MESs.

- *Advanced plotting abilities* through labeling applications in the vessel tracking software that enable managers to label stopover ports or points, names and other important items. Time and date of positioning and latitude and longitude readings can also be applied as labels.
- *Defined alarm zones* that activate visual alarms when user-defined boundaries are crossed.

Whether MobileTrac™ is being used to manage a fleet at sea or to track aircraft—the tracking, communications and weather services provided by COMSAT's MobileTrac™ and C-Link℠ services leave all other communications services back at the dock. ■

To: dale@ldgo.columbia.edu
From: dale@ldgo.columbia.edu (Dale Chayes)
Subject: USCG Local Notices to Mariners Now On-line
Date: Mon, 15 May 1995 16:24:54
Cc: marsupt, captain@ewing.ldgo.columbia.edu

--- Forwarded message follows ---
From: gttm@cais3.cais.com (USCG TELECOMMS)
Subject: USCG Local Notices to Mariners Now On-line
Date: 14 May 1995 02:56:07 GMT
Keywords: NTM, LNTM

Good news. Coast Guard local notices to mariners from every district are now on-line, and they are all up to date.

Previously, only about 1/3 of districts posted up to date NTMs, and another 1/3 had no NTMs posted. That problem has now been corrected.

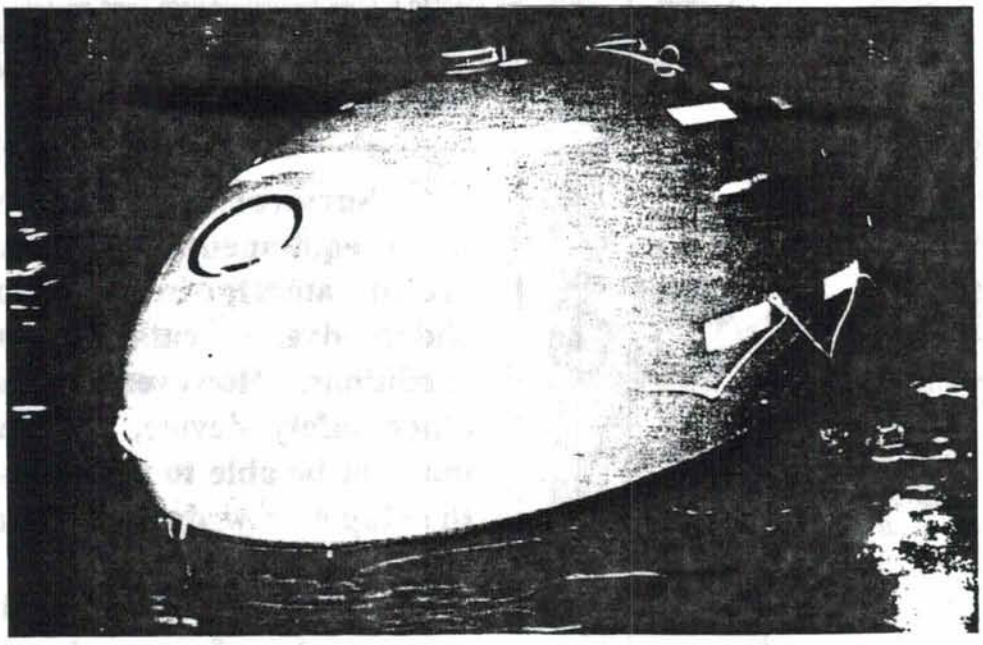
NTM's are published monthly, with weekly supplements. Electronic postings are made weekly. Notices are posted in two formats: .TXT and .DCX.

They are available by modem from 703.313.5910, or through 'telnet fedworld.gov' by entering 'udd54' at the first full menu. This info should be fully Internet available (through anonymous ftp, gopher and www) by July first.

JoeH

-
+ COAST GUARD COMMUNICATIONS +
| |
| Telephone: (202) 267-2860 U.S. Coast Guard (G-TTM) |
| Fax: (202) 267-4106 Washington DC 20593 |
| Internet: CGComms/g-t07@cgsmtp.comdt.uscg.mil |
+----------+

Closed egg-shaped capsule can mean survival at sea



By Mr. Jean-Marc Chiasson

Since the disastrous *Titanic* sinking in April 1912, marine rescue techniques have been carefully reviewed. It is now mandatory that every person aboard a ship is entitled to have efficient rescue equipment in threatening situations.

In February 1982, the petroleum and marine communities were appalled by the loss of the *Ocean Ranger* oil drill rig which capsized in a few seconds during a violent storm off Newfoundland, Canada. There were no survivors. A life boat was severely damaged during launching. The liferafts were not used.

Marine rescue specialists were convinced that a safer survival device had to be developed to save seafarers and passengers in endangered vessels. The risk of hypothermia, which can kill in minutes, as well as drowning had to be considered in designing the device.

A survival craft research team based in New Brunswick, Canada, determined that the craft required four major factors to achieve its objective of saving lives at sea.

Esperanto 6

In November 1992, after ten years in development, a commercially viable version of the *"Esperanto 6"* survival capsule was completed.

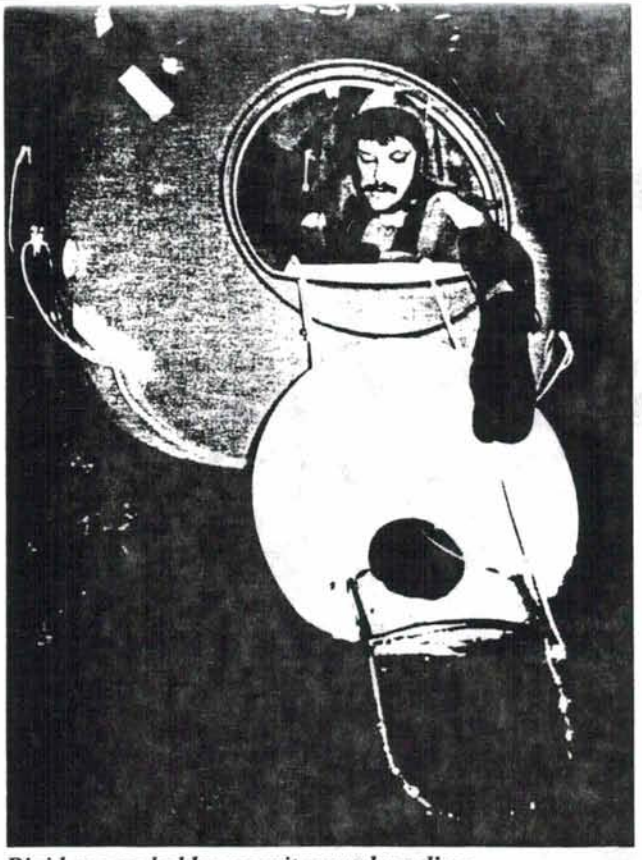
The capsule is 9'3" long and 4'3" wide, and can accommodate six adults in survival suits. Weighing 580 pounds, the capsule is fitted with a retractable center keel which can be easily released when in the water. In addition, the keel is fitted with a system than can propel the capsule manually at about 1.8 knots. Free flooding water ballast tanks are built low in the structure, giving it adequate righting levers to maintain it upright with comfortable motions even in rough seas.

The capsule is easily boarded by a rigid access ladder from the sea or from the deck of a ship, thus avoiding the risk of hypothermia or injury by jumping into the sea.

Synthetic resins, kevlar and balsa (a very light wood) combined with the egg shape produce a hull shell with high impact resistance. All surfaces are treated with fire retardant materials.

The craft should:

1. **be closeable and watertight when closed,**
2. **be able to withstand high impact loads,**
3. **be capable of being boarded from the vessel and the sea, and**
4. **ensure sufficient thermal insulation to avoid hypothermia in low temperatures.**



Rigid access ladder permits easy boarding.

Performance tests

After a series of tests conducted by the Canadian National Research Center, the *Esperanto 6* capsule was approved by the Canadian Coast Guard as a safety rescue vehicle. Additional tests were performed and witnessed by the United States Coast Guard in August 1994. The capsule passed the tests, which covered:

a. seaway towing;
b. lifting with a weight of 4,000 pounds inside;
c. speed and maneuverability attained by manual paddling and drop keel propulsion;
d. water tightness and absorption;
e. acceleration and deceleration when dropped into the water from 15 to 65 feet above the surface;
f. boarding trials, including handling of an injured person from the sea; and
g. impact measurements when simulating the striking of the capsule against the ship's side when davit launched.

The capsule is also approved by the United States Coast Guard and meets Safety of Life at Sea (SOLAS) Convention requirements as a six-person rigid liferaft.

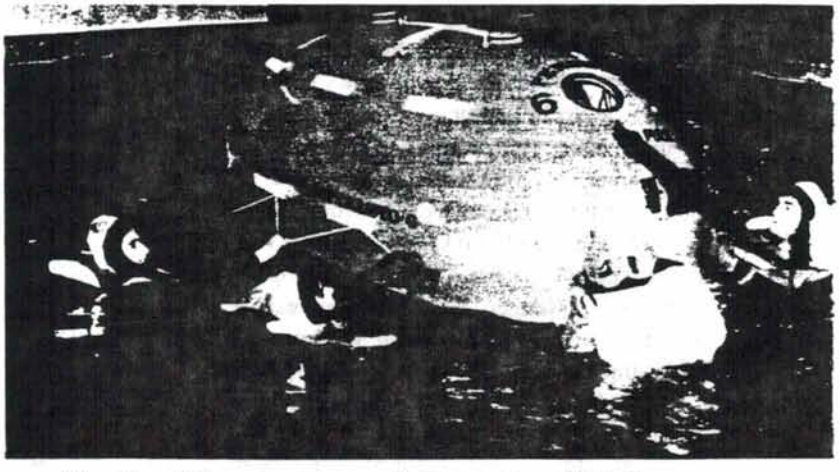
Experienced seafarers volunteered to participate in both sets of tests. They concluded that the capsule was easy to board from the sea, easy to propel and steer, and comfortable and secure when in a seaway. They also found that the capsule afforded protection from the elements and hypothermia.

Uses

Radio locator beacons, VHF and other apparatus can be installed in the survival capsule, which can be adapted for use by marine cargo and passenger vessels, commercial fishing boats, offshore oil platforms and vessels, private yachts, as well as marine education and training centers.

Survival craft are vital safety equipment, particularly in cold waters far from rescuers, and in adverse weather and sea conditions. However, like any other safety device, the craft may not be able to save lives if the ship's crew does not know how to operate it.

Safety drills and training in survival craft operation are essential for every crew member on board the vessel.



"Survivors" hang on to capsule from external life lines.

Mr. Jean-Marc Chiasson is marketing director of Ovatek Ltee, P.O. Box 24, Industrial Park, Bas-Caraquet, New Brunswick, EOB 1EO, Canada.
Telephone: (506) 727-5039.

Shipboard
Environmental [Data]
Acquisition
System

SEAS/AMVER Compressed Message A Reality!

Volunteer Ships Needed To Test Communications Software

The United States has been collecting data from volunteer ships at sea for years to support international meteorological and search and rescue programs, which in turn support safety at sea. The programs are known as the Shipboard Environmental (Data) Acquisition System (SEAS) and the AMVER system, respectively. Reports for these systems include much of the same data.

Ship reports historically have been made via terrestrial communications using HF, MF, and VHF frequencies. The choice of radio frequencies has depended upon the location of the ship and propagation conditions at the time. In some cases, it is not possible to communicate due to poor propagation, and in other cases reports have waited until the next watch for a skilled operator to transmit the traffic.

During recent years, ship reports via satellite communications have been made utilizing INMARSAT - A Ship Earth Stations with telex or low speed data methods of transmission. These reports have used both full text and report encoding for message brevity. The INMARSAT-C communications system has been developed for two-way store and forward telex or data messaging communications via satellite, and includes polling and data reporting capabilities.

Using personal computers (PC) and satellite communications aboard ships will reduce the cost and work associated with these reports, and increase participation. The National Oceanic and Atmospheric Administration (NOAA) and the Coast Guard are testing software that can be used with personal computers and Inmarsat C terminals to send compressed data reports inexpensively for either SEAS, AMVER, or both. This enables properly equipped ships to submit reports without charge (cost borne by the United States).

WE NEED VOLUNTEERS FOR LATEST PROJECT

If your ship is already participating in both the AMVER and meteorological programs, this software will give you the following additional benefits:

Environmental reports have historically been paid for by the government. If ships use this software, AMVER reports will also be paid for by the government.

Ships will only need to submit AMVER sail plans, deviation and arrival reports. Routine position reports will be replaced by weather observations. When the weather observation arrives at the ground station, a position report will automatically be forwarded to the Coast Guard.

Messages will be entered through a PC so that errors will be minimized. They will then be transmitted with modem error correcting software and hardware so that garbles will be minimized and accuracy maintained.

To participate in the test, ships must have the following equipment:

- A 286 or higher IBM compatible personal computer

- An INMARSAT Standard C terminal

Both pieces of equipment must be on or near the bridge where the deck officer can access them on a 24 hour basis. If the PC is connected to the Standard C terminal, the transmission is very simple. If not, the observation can be written on a PC diskette and carried over to the Standard C terminal. In either case, transmission requires only a few keystrokes.

• If you are interested in participating and have the equipment, please contact:

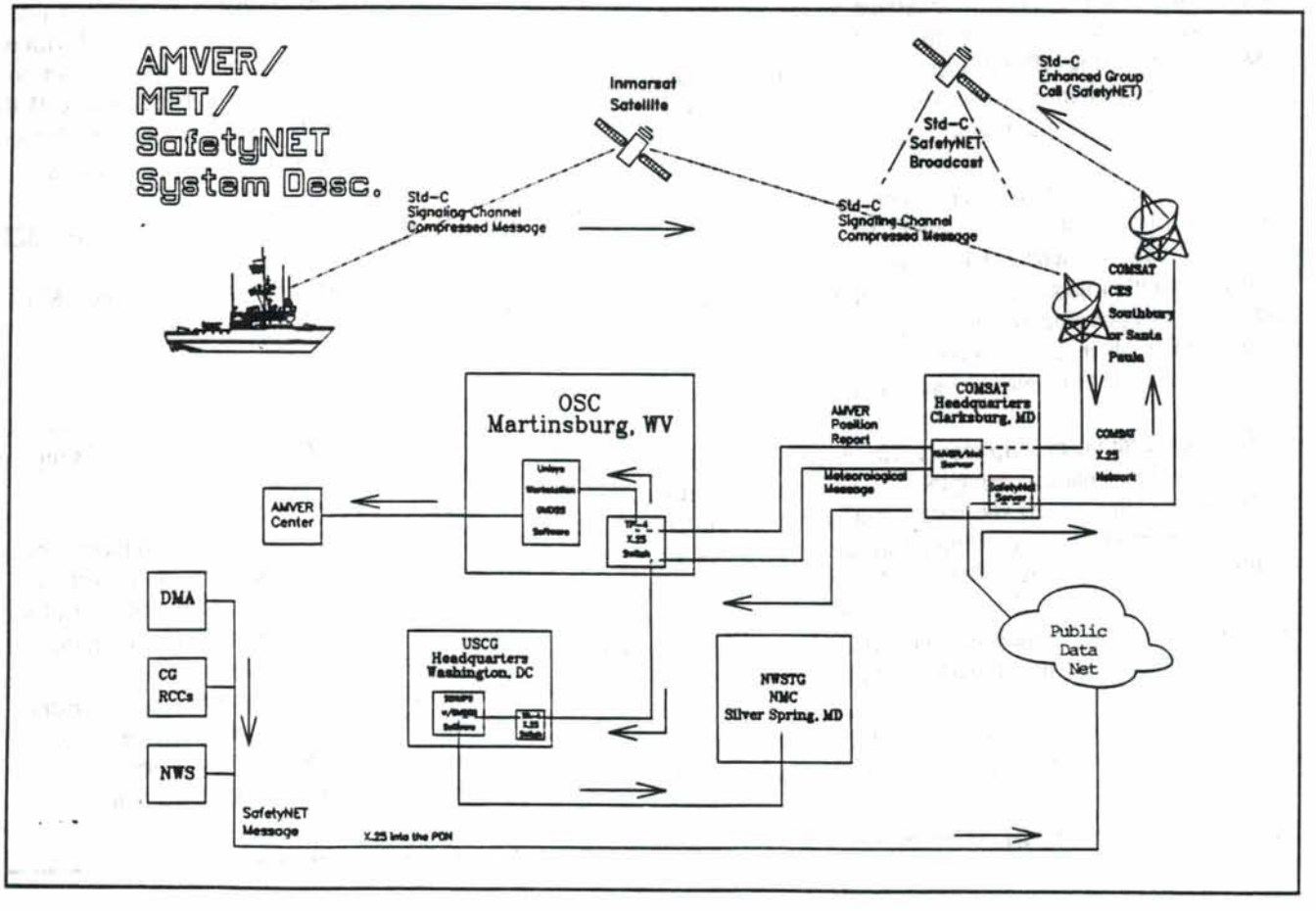
Mr. Chris Noe
National Oceanic and Atmospheric Administration
Observing Networks Branch, NOS
SSMC4 Room 6308
1305 East West Highway
Silver Spring, Maryland 20910-3281

Voice: (301) 713-2790
Fax: (301) 713-4499
Internet - cnoe@noaa.gov

Then send in the following information:

Ship Name
International Radio Call Sign
Brand and Model of Standard C and version of Software
Your INMARSAT Mobile ID (So we can contact you if necessary)
Mailing Address - for software, manual, and newsletter.
List of U.S. Ports of Call and Schedule - It may be possible for one of our field personnel to visit the ship, install software and answer any question that may arise.

You can help us make this study a success by offering your technical input. The more participation we receive from a more divergent source, the more successful and helpful the test will become!



Beware: Pirates Are Not Just In Old Movies

Gang Activity on the Sea?

Reprinted With Permission Of Naftiliaki Magazine

The swash-buckling image may belong to the past, but pirates are back in business again.

The last few years have seen an increasing incidence of violent attacks on ships by heavily armed and well-organised gangs. This problem is particularly bad in the Far East, West Africa, South America and India, but there have also been incidents in other parts of the world. Some of these may be related to drug smuggling. Other attacks have beeen carried out by terrorist groups as part of their political campaigns.

The most common locations for attacks on ships at anchor or in port are those West African ports between Senegal and Angola, and South American ports with Brazil, Columbia and Venezuela being particularly susceptible.

Over the years many of these attacks occurred on an opportunistic basis and involved the use of crude weapons. Recently, however, it has become evident that gangs are targeting particular ships using information as to the nature of the cargo carried, and the level of security which is being maintained onboard. Not only has piracy become more organized in the last few years but we have also seen an increasing level of violence with the more common use of firearms.

An unwelcomed encore...

Perhaps the greatest increase in piracy has been seen in South East Asia, organised criminal gangs attracted by the large volume of high value cargoes being carried.

A number of such attacks have taken place while the ship was under way, assailants using small high-speed craft and gaining access to the vessel by grappel hooks or long bamboo poles.

Until the middle of last year, most attacks took place in and around the Straits of Malacca. However, in July 1992, the Indonesian and Malaysian governments signed a treaty allowing "hot pursuit" of pirates into each other's territorial waters. Singapore joined this pact one month later.

Communication is the key

A Piracy Reporting Center has also been established in Kuala Lumpur by the International Maritime Bureau. These intiatives seem to have reduced attacks though a penchant continues for coastal vessels of 2-3 tons, especially in the Gulf of Thailand and in the Philippine waters. In some of these attacks, the cargo is removed and sold with the ship herself being traded with false papers. The cargoes which are chosen are those that are easily disposed of locally - corrrugated iron, cement, rice, etc. The ship may well be used for further trading by pirates with a crew quite innocent and who know nothing of the circumstances by which the ship was obtained.

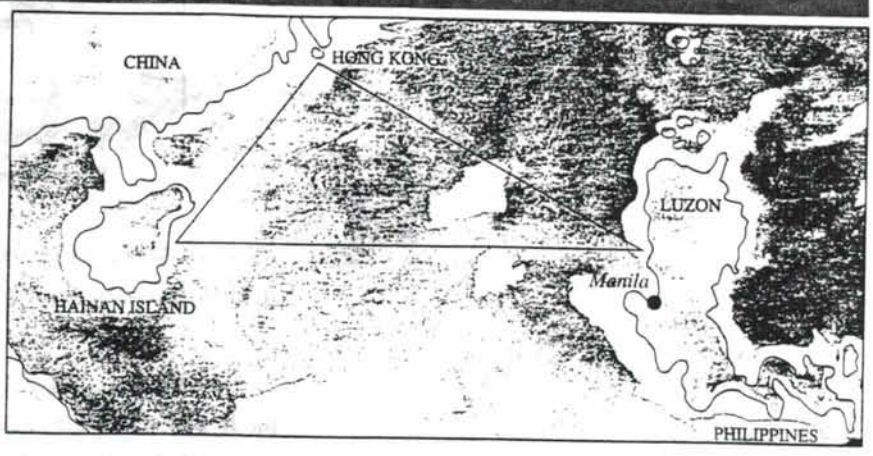
In a recent development, pirates have started to operate in the South China Sea, often at some distance from land in the vicinity of the Philippines. These pirates often use sophisticated high speed motor yachts or launches and, although their attacks bear some resemblance to those of pirates in the straits of Malacca, they are generally cruder in their methods and more violent.

In recent months, a number of ships from Hong Kong, bound for ports in northern Vietnam, have been intercepted - in some cases by members of the Chinese People's Security Bureau (or, perhaps, individuals masquerading as such officials), intimating that contraband goods were being carried.

Both the north and south of Hong Kong have also seen attacks by pirates using fishing boats. The opening line (these vessels clearly lacking speed) has often been to fire grenades or anti-tank missiles at the ship in order to persuade her to heave to.

Particularly alarming is that these pirates don't appear to be able to distinguish between a tanker or a gas carrier and a dry-cargo vessel; on at least one occasion a VLCC had hand-grenades projected onto her weather deck. To the great fortune of those in the vicinity, no serious damage resulted.

The "Golden Triangle' - The scene of rising attacks on shipping. Extreme care should be taken while navigating these waters.



The following measures, based on guides from the UK Department of Transport, are key elements in the fight against piracy:

- **Keep up-to-date with the areas posing problems. Re-routing may even be a necessary option.**

- **Careless talk costs. All information regarding sailing routes, schedules and the nature of the cargo carried should be treated as confidential. Many attacks have occurred after such information has leaked out.**

- **If visiting a port where pirates are known to attack anchored ships, try to arrive during daylight. If a long wait before berthing is anticipated, consider "making your number" so as to establish berth priority and then pulling off into deep water.**

When a ship is either at anchor or in port, the following precautions should be taken:

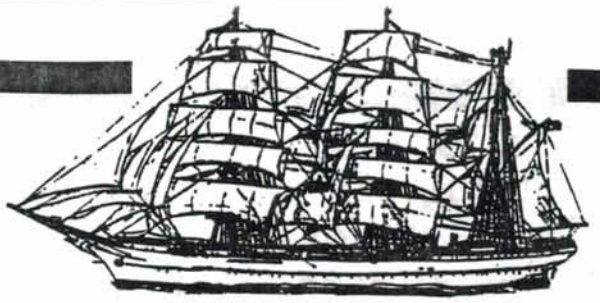
- **Control the number of people allowed access on board and record the names of those who are admitted. The use of closed circuit television should be considered.**

- **When berthed in dangerous ports, it is particularly important to arrange proper illumination of the decks and quayside areas.**

- **Gangways, ladders and ramps should be raised or closed at night. Decks should be patrolled regularly and, in areas of particular danger, additional watches should ensure a good look-out at all times.**

- **Formulate an anti-attack plan and make sure that all crew members know what they should do if the ship comes under attack.**

- **If the ship comes under attack, alarm signals should be sounded and the crew should seek refuge in previously designated secure areas. An immediate attempt must be made to contact the port control office, law enforcement agencies or navigational authorities by VHF radio or GMDSS equipment if the ship has this.**



When underway, the following precautions should be taken in addition to some of those listed before:

"Crews should avoid use of firearms"

* The crews of slower ships with a lower freeboard should be particularly vigilant but all masters are advised to double watches and have the radar and radio continually manned during navigation in dangerous seas.

* When sailing through dangerous waters at night, the vessel should be blacked out apart from mandatory navigation lights. Wide-beamed floodlights can however be used to illuminate the stern area and signal projector lights used systematically to probe for suspect craft.

* As with attacks in port, as soon as an attack is identified it should be reported by VHF radio or GMDSS to the relevant law enforcement agencies and distress signals given when the ship is in imminent danger.

* When an attack occurs, this may be repulsed by using power hoses. Water jets are particularly effective as they can both swamp the attackers' boat and make boarding more difficult.

* If attacked, sound the alarm as soon as possible. Designated secure areas should be known to the crew. These should be in key areas of the ship and should be made secure from attack by strengthened doors and locks.

* The use of aggressive physical action or firearms by the crew should be avoided. In many instances, compliance with the attackers' demands may be the only safe alternative, especially as resistance or obstruction can lead to increasing violence and risk to the crew. Once the attackers have left the vessel, it is crucial to report the incident to the law enforcement agencies or navigation authorities of the coast or state where the vessel is navigating. □

Pirate attacks dropped over 30% for the first quarter of 1993 against the same period in 1992. However, the area around Hong Kong and in the South China Sea was labelled "a hotbed of piracy".

U.S. MARITIME LEGISLATIVE UPDATE

The Telecommunications Competition and Deregulation Act of 1995 (S252) recently passed by the U.S. Senate, contains, in part, the following provisions of possible interest to RTCM members:

(1) Section 308(e) of the Communications Act would be modified to include "domestic ship radio service" in the list of services for which the U.S. Federal Communications Commission (FCC) may "by rule authorize the operation of radio stations". In plain English, this provision would authorize the FCC not to require ship station radio licenses for ships engaged in only domestic radiocommunications.

(2) Ship radio inspections would be privatized with the FCC being authorized to enter into contracts for carrying out inspections and certifying compliance with requirements.

(2) A section of the bill titled "Automated Ship Distress And Safety Systems" contains the following: "Notwithstanding any provision of the Communications Act of 1934 or any other provision of law or regulation, a ship documented under the laws of the United States operating in accordance with Distress and Safety System provisions of the Safety of Life at Seas Convention shall not be required to be equipped with a radio telegraphy station operated by one or more radio officers or operators. This section shall take effect for each vessel upon a determination by the United States Coast Guard that such vessel has the equipment required to implement the Global Maritime Distress and Safety System installed and operating in good working condition."

The House of Representatives has not yet taken action on legislation dealing with these issues.

EPIRB USERS TAKE NOTE

During discussions at the Beacon Manufacturer's Workshop held in conjunction with the 1995 RTCM Annual Assembly Meeting attention was drawn to problems seen with EPIRBs which have undergone battery changing at service shops not authorized by the EPIRB manufacturer.

Without access to manufacturers spares and service bulletins, and without prescribed test equipment for each and every EPIRB model, these shops have in several cases unknowingly rendered EPIRBs unfit for use. Problems noted included: (1) Wrong battery type fitted. (Correct chemistry and voltage, but "low rate" cell construction meant that the EPIRB would have only worked for a few hours.); (2) Plain "O" ring seal fitted instead of prescribed special conductive type. (Caused complete corruption of radiated signal.); (3) Leaking beacons due to lack of waterproofness testing.

Users should note that a "PASS" indication of an EPIRB self-test function is not a guarantee that the EPIRB will, in fact, function correctly.

U.S. MARINE WEATHER RADIO FACSIMILE BROADCAST UPDATE

The President's budget for fiscal year 1996 submitted to Congress proposes a reduction of $500,000 by eliminating the transmission of weather charts to marine radiofax broadcast stations on September 30, 1995. Under this proposal the weather charts produced by the U.S. National Weather Service would be made available to maritime users only through private weather information services. In the Congress, a Bill has been introduced (HR1450) proposing similar budget cuts looking toward eliminating government broadcast of marine facsimile charts and preparation of offshore and high seas marine weather forecasts.

Subject to these possible changes in government radio broadcast policy as noted above, the U.S. Coast Guard and the National Weather Service have agreed to increase marine weather facsimile products broadcast from USCG Communications Station Boston by August 1, 1995. The Coast Guard also plans to begin marine weather radiofacsimile broadcasts from USCG Communications Station New Orleans beginning October 1, 1995.

In an unrelated action, previous U.S. Navy plans to cease HF radiofacsimile broadcasts by September 1995 have been postponed until at least 1997, due to delays in installing satellite high speed fleet broadcast receiving equipment on its ships.

U.S. COAST GUARD ANNOUNCES DSC INSTALLATION SCHEDULE

The U.S. Coast Guard has announced current plans for HF and MF Digital Selective Installations for shore facilities encompassing Coast Guard Communication Stations and Group Radio facilities. These are expected to begin in the spring of calendar year 1996, at a rate of 6-8 shore facilities per quarter and completion of all planned installations prior to the end of 1997.

Shipboard HF and MF installations on Coast Guard cutters are planned for 1997-1998, and VHF shoreside installations are programmed for 2001-2002.

RTCM ISSUES SECOND CALL FOR PAPERS AND PROPOSALS FOR 1996 RTCM ANNUAL ASSEMBLY MEETING

As reported in the last RTCM Newsletter, RTCM has begun work on plans for the 1996 RTCM Annual Assembly Meeting to be held in San Diego, California, May 12-17, 1996. Suggestions on topics for sessions, workshops and panel discussions are needed, as well as abstracts for specific paper presentations. Your inputs are needed NOW in order for them to be included in the program planning. Please send to the RTCM Assembly Planning Committee by telefax to 202-347-8540 or by mail to 655 Fifteenth Street, N.W., Suite 300, Washington, D.C. 20005.

A wire rope cleaner and lubricant protects the environment

By Emile E. Grignard

U.S. environmental protection laws are so strict that even the cod liver oil your kids swallow cannot be used to lubricate wire ropes used in public waters. Fish oil creates a forbidden sheen on the water. Chlorinated hydrocarbons are strictly verboten, and most rope cleaning fluids are on a par with organized crime.

So what can a user put on his nautical wire ropes? Read what the author has to say.

Background

As you may remember, the previous highly recommended solvent for cleaning wire rope was a chlorinated hydrocarbon. However, today that material is classified as hazardous. If spilled or discarded into a drain or thrown on soil, it can enter our drinking water source. And if it evaporates, scientists say it may deplete the earth's ozone layer; what's worse, in some formulations it is considered carcinogenic.

Before the dangers of chlorinated hydrocarbons were known, the U.S. Navy requested my company to formulate an effective cleaner for wire rope to be used prior to the rope's being socketed. In response, Grisolve MT-N was formulated, tested, and approved for use on naval aircraft carriers.

When it was discovered that chlorinated hydrocarbons are not environmentally safe, the navy expressed interest in a wire rope cleaner that is safe. The navy specified a water biodegradable cleaner that could also handle the non-biodegradable material removed from wire rope. Such material is usually petroleum based.

The new wire rope cleaner

To meet the new navy specs, we formulated Grisolve PEG-2. It's a water base biodegradable cleaner that allows the soil residue from wire rope to separate and be skimmed off by many commercial units available for the discard of petroleum oil in coolant reservoirs.

The navy evaluated many cleaning solutions; and Grisolve PEG-2 met their requirements, including the screening test described below.

The screening test

Briefly, the screening test consisted of metal test "Q-panels" of cold rolled steel SAE 1010, coated with a solid wire rope compound. The panels were submersed into the cleaning solution at different water dilution ratios and temperatures. The time a cleaning solution took to remove the wire rope compound from the test panel was recorded.

The test panels were then water washed, and the ASTM F22-65 water-break test conducted.

If the cleaning solution being evaluated passed the water-break test, then the copper sulfate test was performed to assure that there was no residue left on the metal that could affect the bonding of zinc during socketing. See figure. 1.

The copper sulfate test

Fig. 1 shows a steel test panel coated with a solid wire rope compound. The bottom third of the panel was placed in a copper sulfate solution. As you see, the copper sulfate solution did not completely plate copper to all this section of panel, indicating this section was not completely cleaned. The cleaning solution (not Grignard's) failed the test.

The panel's middle section is coated with the wire rope compound that was not subjected to the cleaning solution; and the top section was not coated.

After selection of cleaning solutions that did pass the copper sulfate test, the candidates were evaluated on wire rope in a full-scale field test.

A full-scale field test

Fig. 2 shows bright steel broomed wires that were cleaned with Grisolve PEG-2 and water washed. The wires were then placed in a copper sulfate solution to determine if each broomed wire was completely clean and free of any wire rope compound.

The next phase was to determine the acceptance of an aquous cleaning solution using the present socketing

Fig. 1. A copper sulfate test tells if a wire rope cleaner is effective. This picture shows that the cleaner on the bottom third of the test plate failed.

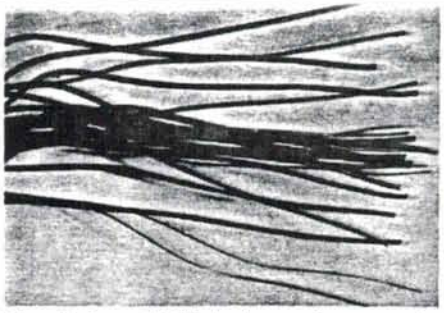


Fig. 2. In a field test, a wire rope is broomed, cleaned with PEG-2, washed, socketed, and tension tested. It passed.

the ship. Aboard a naval aircraft carrier, the wire rope being socketed was bright steel 1-7/16" (6x31 fiber core). The procedure was as follows: Chlorinated solvent was used as the control.

1. The wire rope was broomed and the hemp core was removed up to the seizing.
2. The broomed rope was soaked in a cleaning solution, Grisolve PEG-2, at a 4:1 water ratio. The cleaning solution temperature was between 90° F-110° F and air agitated.

cleaning phase was air-blown then rinsed in running water (180 for 2 to 3 minutes.

4. The broomed wire rope was blasted (steel grit) to assure a cl surface was obtained.
5. The rope was fluxed in a zinc monium chloride solution for 3 r utes then allowed to dry for 5 minu
6. The sockets were also cleane the same cleaning solution; wa washed & grit blasted.
7. The terminal was pre-heated v an acetylene torch to 970° F mi 1020° F as indicated by a tempilsti

The zinc was heated to 1000° F p to being poured into the terminal, temperatures being measured wi pyrometer. All terminals were allo to air cool. If the socketing was p erly done, when tested to destruct a wire rope will break before it pull from the socket.

The cleaning cycle time of Gris PEG-2, like any water base cleane determined by the bath temperat and the dilution ratio of cleaning s tion concentrate.

Similar to doing dishes at home v little detergent and cold water, it ta longer to remove the food from plates and you still might have a sl surface film. Therefore, when you the proper amount of detergent hot water, the glasses or plates shine. The same applies to wire r cleaner. Temperature must be hot.

Remember structural strands more demanding of cleanliness th wire rope. The wires after broomin a structural strand are practica straight with no helixing.

The brighter side of using aquous cleaner diluted w water is that the conta nated residue will float to the top s can be skimmed off, making the moval cost minimal. The cleaning lution can be reused after the w rope compound is removed from surface. Any wire rope compound t might reappear on the wires when moved through the surface film of cleaning solution will wash off in water rinse phase.

It has a pleasant odor, and t cleaning solution is not harmful to operator's health.

Preservatives and lubricants

Now that the cleaner meets the vironmental standards, what ab the wire rope preservative and lub cant used in manufacturing or dre ing the rope?

Yes, you can use a fish, vegetable, animal or synthetic oil that will meet the EPA toxicity regulations. These wire rope compounds for marine use will probably meet the EPA standards but they won't conform to government regulation 40 CFR Ch.1 #110.3 DISCHARGE INTO NAVIGABLE WATERS OF SUCH QUANTITIES AS MAY BE HARMFUL: The regulation says it shall not –

"Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines."

A small tug boat company in Seattle, WA, was subjected to a fine by the coast guard. The old standby fish oil was used to dress their towing cables but it left a sheen on the water that was in violation of the government code.

The coast guard abides by this regulation saying that a sheen on the water is not allowed.

The chemist at the Grignard C pany was asked by company peopl the West Coast who service the ma industry to formulate a preservat lubricant that was sheen-free.

Grignard Company formulate Prelube-19 metal preservative/lu cant under the authorization an rection of the coast guard and Release Branch. The Grignard C pany had the properties of Prelub evaluated by an independent lab tory under the supervision of a gov ment inspector.

The wire rope samples furnishe Paulsen Wire Rope were dressed Prelube-19 and placed in a bath taining ASTM synthetic sea wa Water temperature in the bath 80° F. This temperature was chose the average water temperature t from "The Times Atlas of the Oce printed in 1983. The wire rope s mens were submerged at this tem ature for 72 hrs.

The Prelube-19 coating used or wire rope did not cause a sheen or water; known as irridescense us formed by mineral oil. A petrol compound did.

The Prelube-19 surface film forms on the crowns of the wires forms in the valleys betwee strands. This surface film prevent preservative/lubricant from bein leased into the water.

What about lubrication proper

Prelube-19 is a vegetable tri eride, and like many others it far greater boundary lubrication a petroleum oil. Instead of usin four ball test method that is fo on pin point contact we use the Falex method. This method has t blocks pressed against a revolvin ter pin. We believe this rubbing simulates the wires moving strand going over a sheave.

People say the zinc in galva wire rope offers enough lubrici tween the wires. Yes, zinc is a metal protectant and lubricant it is present, but sea water an rain will remove it.

Viscosity of your wire rope pound in the manufacturing o larger than 1½" is importan large diameter rope being ma tured, the Grignard Company lated its new Prelube-19HV to p run-off during the twisting and operation. Prelube-19HV will r between the wires in the str offer additional lubrication/pre tion in adverse working conditio

Prelube-19, a lower viscosit

rope compound previously formulated for dressing, is still satisfactory in the manufacture of small diameter rope as used in the oceanography field.

Lube for wire ropes on dry land

Marine wire rope is not the only wire rope confronted with the release of the lubricant from the rope as it is working or stationary.

Think about the sightseers that ride on the ski lifts or tramways to witness the scenic views in the summer when the temperature is hot. One of the problems is that the viscosity of the lubricant thins out and drips on them. The surface film that forms on Prelube-19 won't let this happen.

This also happens with wire ropes in the summer as some vertical lift bridges are being raised and the wind is blowing. People to leeward get spattered with lube.

High atmospheric temperature will allow the protective coating, if any was used in the manufacturing of the guy wires, to thin out and subjected them to corrosion from acid rain. This atmospheric corrosion was evident on Texan guy wires located a good distance from sea water. An analysis showed a high percent of sulfur in Texan air.

Acid rain will flow down to bridge sockets because the wire rope acts as a conduit or hose. Once at the socket, acid will attack the zinc. One of the most critical sections on guy and bridge wires is at the socket; this is because of torque on the wires. That is why the surface film is important on each wire.

Treating used wire rope

When dressing used wire rope, two important factors must be taken into consideration – the surface condition of the wire rope and the temperature.

The valleys between the wires especially on strand cable and the valleys between the strands on regular rope must be free of residue.

If these valleys are blocked, the wire rope preservative/lubricant can't migrate into the inner wires and core and will just give you a cosmetic appearance.

I recommend a wire brush cable cleaner like the Universal Cable Cleaner manufactured by Grignard Co., or similar ones being marketed. If the valleys between the wires or strands are free of residue then you should have good flow with the proper viscosity preservative/lubricant.

Also the atmospheric and wire rope temperatures is very important if you want good flow into the inner portion of the wire rope.

Don't be misled when the temperature during the day is high after a cool night because it takes longer for the inner wires to warm up.

The dressing compound put on cold rope may migrate into the second layer of wires and then become too heavy to flow into the core especially if it is being dressing manually.

You can evaluate the wire rope compound you are currently using by heating the wire rope and running it under tension around sheaves to determine if you get any drippage or if the outside coating cracks. Also you can open the strands to determine if the wires are coated with the lubricant.

Special Thanks for the information contributed to this article:

Wilbert A. (Al) Lucht, President of Wire Rope and Metallurgical Engineering Service, California; and retired Chief Wire Rope Engineer of American Steel and Wire (U.S. Steel) □

AMVER

Automated Mutual-Assistance Vessel Rescue System

MESSAGE

MARITIME COMMUNICATION INFORMATION NOW AVAILABLE ON INTERNET

The United States Coast Guard Navigation Center computer bulletin board system now includes information on Coast Guard radicommunications systems and stations, including the Global Maritime Distress and Safety System, radio frequencies and schedules used to broadcast high seas maritime safety information, frequencies used to receive distress and safety calls from the mariner, and who to contact concerning problems.

International NAVTEX and Inmarsat SafetyNET schedules are also available, as is information concerning LORAN C, OMEGA, GPS and differential GPS services.

Also available are local notices to mariners, boating safety and maritime radio information for boaters, and information concerning OPA 90 Certificates of Financial Responsibility.

This information can be accessed by Internet by entering 'telnet fedworld.gov', logging on, and selecting 'UUD54' at the first menu. Note that this code may change as Fedworld changes their menu structure. If it does change, look for the Coast Guard under "Gateways". It can also be accessed with a 300-28,800 baud modem using the common 8N1 setting, by dialing (703) 313-5910. The Navigation Center watchstander can be reached directly 24 hours a day at (703) 313-5900. This computer should be fully up on Internet, including gopher, World Wide Web and ftp, by mid-1995.

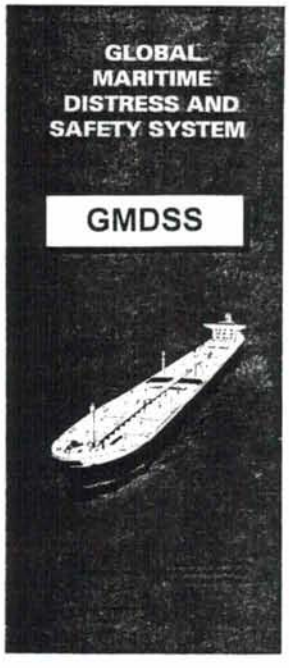
NOAA

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE OBSERVER

U.S. DEPARTMENT OF COMMERCE NOAA

New GMDSS Information Pamphlet Now Available Upon Request!



A new information guide for **GMDSS** has been published by the U. S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service. The pocket-sized pamphlet offers invaluable material on the implementation of **GMDSS, SafetyNET, NAVTEX Maritime Safety Information (MSI) broadcast schedules, the voluntary observing ship program,** and much more. To receive a copy, contact the **Port Meteorological Officer** at most major ports or the national program office in **Silver Spring, Maryland, USA at (310) 713-1677, EXT. 129.**

SEAMAN STATUS, DIVERS: A LEGAL BRIEF

By Douglas W. Truxillo

Going against a recent trend where various courts have held divers who work on a number of unrelated vessels are not Jones Act seamen, the District Court, Eastern District of Louisiana, denied a similar motion for summary judgment with respect to the seaman status of a diver. In *Hall V. Professional Divers of New Orleans*, 865 F. Supp. 363 (E.D. La. 1994) the court held that the undisputed fact that the employee-diver was not permanently assigned to a vessel or fleet of identified, commonly owned vessels did not necessarily preclude a judge or a jury from finding that the diver was, nonetheless, a Jones Act seaman. In *Hall*, a 34-year-old diver, employed by Professional Divers for over a nine-year period, had actually worked on 53 different vessels owned by 37 different companies. He was killed while working from a derrick barge. His employers filed a motion for a summary judgement claiming that the diver was not a seaman since he was "not more or less permanently assigned" to any one vessel or fleet of vessels despite the fact that 83% of his employment time was spent on board the 53 different vessels.

The district court in *Hall* noted that there was a conflict between *Wallace*, which instructed that the nature of the work performed by the diver was controlling on the seaman status issue, and *Barrett*, which supposedly imposed a "fleet attachment requirement." The court then held that since the *Wallace* case was decided before the Barrett case, it was bound to follow Wallace and denied the motion for summary judgement as a matter of law. This decision will allow the trier of fact (judge or jury) to determine at trial whether this particular diver was or was not a seaman. **uw**

Douglas W. Truxillo is a partner with the Lafayette, Louisiana law firm of Onebane, Donohoe, Bernard, Torian, Diaz, McNamara & Abell and Legal Adviser for the Association of Diving Contractors.

UNDERWATER CALENDAR OF EVENTS

1995

AUG. 15, Deadline for Submissions, Abstracts for UI '96. Call Doug Stroud 407-743-7000.

AUG. 26-27, ADC East Coast/Midwest Chapter Inland Diving Symposium, Pittsburgh, PA. Call Rick Jager at 203-368-4611, Fax 203-366-1993.

SEPT. 5-8, Offshore Europe'95, Aberdeen, Scotland. SPE, 4 Mandeville Pl, London W1M 5LA, UK. 44+181-1549-5831.

SEPT. 18-20, 3rd Annual Thematic Con., Seattle, WA. Call 206-994-1200, ext. 3454.

SEPT. 25-27, 9th Annual Unmanned and , Untethered Submersible Symposium, Durham, NC. Call 617-599-7114.

OCT. 2-6, Primary Training in Hyperbaric Medicine, Carolina Hyperbaric, Columbia, S.C. Call Dick Clarke at 803-434-7101.

OCT. 8-13, Society of Exploration Geo-physicists, Houston, TX. Call 918-493-3516.

OCT. 9-12, MTS/IEEE, OCEANS'95, in San Diego, CA. Please write: P.O. Box 261149, San Diego, CA 92196.

OCT. 22-25, SPE Annual Conference and Exhibition, Dallas, TX. 214-952-9393.

OCT. 30-NOV 6, ADC Western Chapter Conference, Honolulu, HI. Call John Ritter at 1-800-634-8377.

DEC. 4-8, Primary Training in Hyperbaric Medicine, Carolina Hyperbaric, Columbia, SC. Call Dick Clarke 803-434-7101.

1996

JAN. 15-17, (UI'96) UNDERWATER Intervention 1996 New Orleans, LA. Call 1-800-316-2188.

APRIL 3-12, (WSI'96) Human Powered World Submarine Invitational Call Cindy Clark or Page Jennings at 619-534-1294.

Fax news of your underwater event to UnderWater magazine, (713) 580-4433.

Nobody asked me, but . . .

By Lieutenant Commander Jonathan A. Kendrick, U.S. Coast Guard Reserve

Reengineering the Coast Guard

The Commandant of the Coast Guard has convened two task forces to look into restructuring the service and to review cradle-to-grave training. The current sentiment calls for the consolidation of several districts, the elimination of area, maintenance, and logistics commands, and the formation of total Coast Guard forces in given locations by combining groups with marine safety offices.

The Commandant stated that the Coast Guard is in the vanguard of Total Quality Management (TQM), of strategic planning, of reengineering, and of acquisition. He also has used the term "streamlining" in recent speeches. TQM has become a way of life in the service, and process improvement is becoming a fact of life in most units. However, the multiplicity of missions is seldom mentioned, except in statements that the service will remain "flexible" in adapting to changing missions.

TQM provides a path for improvement, and streamlining will make the Coast Guard more efficient and effective. Nevertheless, reengineering is the way truly to improve the service. Reengineering can be defined as the need to start with a clean slate, to reinvent a way of doing business and of meeting customers' needs. Reengineering complements TQM, but it is not the same thing. TQM is a long-term commitment to improving processes and providing a quality product. Reengineering is a one-time—perhaps traumatic—event, which redefines roles and eliminates unprofitable business lines.

Before reengineering itself, the Coast Guard should first compare its own missions to other maritime missions within the government and then determine the best use of resources to accomplish them. This may require giving up a mission, taking on a new mission, forming a new agency, or eliminating an existing one.

To achieve a clean slate in viewing the government's role in maritime policy, one mentally must eliminate the bureaucracies of not only the Coast Guard but also the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), the Army Corps of Engineers, and perhaps pieces of other agencies, including the Maritime Administration, the Customs Service, the National Science Foundation (NSF), and the Navy. The boundaries and organizational charts must disappear and be redrawn.

Here are some possible plans for reengineering the Coast Guard:

Operation Bold Stroke

- Eliminate NOAA and its commissioned officer corps; then, merge it with Coast Guard aids-to-navigation, icebreaking, and scientific missions to form a National Ocean Service or Ocean Service Corps. This agency would operate as a uniformed service and conduct all survey, mapping, research, icebreaking, and aids-to-navigation operations. It would have no law enforcement authority—ships and aircraft would not be armed—but would be subject to a wartime commitment to perform its services as necessary under the protection of the Navy.
- Create the Maritime Services Administration, charged with responsibility for marine inspection, marine licensing, waterways management, vessel traffic services, port safety and security, coastal search and rescue, and environmental response. This would call for the integration of much of the Coast Guard and the marine-related missions of the Corps of Engineers. It would be civilian in nature, with a uniformed branch (similar to customs) to police and inspect ports and operate coastal search-and-rescue platforms. Reservists and Coast Guard Auxiliary members with training in these missions would be given the option to become true part-timers with their schedules determined by the field offices.
- Create a new Coast Guard as a seagoing service tasked with maritime law enforcement on the high seas. It would retain a national-defense mission and be incorporated into the Navy in time of war. Surveillance aircraft and helicopters would support cutters, and reserves assigned to this agency would remain somewhat traditional in their structure.

There are problems with this plan: Aircraft are divided among the agencies, but training could remain joint. The mission of deployable harbor defense and environmental defense are not accounted for. Because of extreme reductions, the Coast Guard Reserve might not be worth keeping. The entire recreational boating safety mission would have to be passed to the states.

Operation Bold Slice

- Create the Ocean Service Corps.
- Delegate: the waterways-management mission to the Corps of Engineers, boating safety to the states, and environmental cleanup to the Environmental Protection Agency.
- The Coast Guard would retain all other marine safety and marine-law-enforcement missions. Streamline what remains with Coast Guard Forces (multimission organizations) in various geographic locations reporting to six regions. Eliminate maintenance and logistics commands and areas and consolidate districts into larger regions. Transfer former staff billets to the operating units to meet full staffing requirements. Retain deployable harbor defense as a port security mission. Make the reserve more "part-time" by eliminating reserve units and incorporating reserve training, qualifications, and scheduling into active units.

Operation Bold Parry

- Streamline missions and eliminate redundancies. Though not reengineering, streamlining would improve the service.

The first two plans may be simplistic and naive, and who knows whether they are even achievable? Nevertheless, reengineering must occur for the Coast Guard to operate efficiently and effectively. The National Performance Review demands a leaner and smarter government. We must take a close look at how our government manages its maritime services and meets its customers' needs, then restructure accordingly.

Lieutenant Commander Kendrick is a human resource manager at a major Florida bank. He is assigned as the operations officer for Reserve Group Mayport.

Watch out for these costly mistakes when terminating employees

By Philip M. Perry

Discharged workers are more likely than ever to sue your business. Because of new wrinkles in the employment law and the increasing pace of litigation, you are at risk even if your business is not unionized and you do not have workers on contract. The problem has become worse as companies large and small trim staffs to buttress profits against a sluggish economic rebound.

"Wrongful discharge is one of the most rapidly changing features of the legal landscape," says Henry S. Knight, Jr., an employment law specialist at Nelson, Mullins, Riley & Scarborough in Columbia, S.C.

Knight says court decisions are eroding the traditional idea of "employment at will," which allowed employers to discharge non-union workers for any reason. "Over the past few years new laws have given discharged employees more opportunity to litigate successfully."

Attorneys are moving in for the kill. "The practice of law is more competitive," says Knight. "The increase in the number of attorneys has led to 'creative lawyering,' to find new ways to make a buck."

Most observers feel the situation will get worse. "There is going to be an increasing flood of wrongful discharge litigation based on all kinds of theories," says Herbert L. Segal, past chair of the American Bar Associations' Labor and Employment Law section, and a partner at the Louisville firm of Segal, Isenberg, Sales, Stewart, Cutler & Tillman. For example, some discharged workers are now suing their employers on the grounds of emotional stress caused by harassment in the work place.

Because wrongful discharge cases generally go before juries, the deck is usually stacked against a business. "Juries are more sympathetic to employees than to management," says Knight. "That's because they usually do not have management people sitting on them."

Even if your case is among the 80 to 90 percent of such lawsuits settled before they go to court, the threat of a jury trial can leverage a plaintiff's position and increase the amount for which you will likely settle.

Unpredictable juries can surprise employers. Jurors often find wrongful termination even when no law supports the verdict.

"No matter that the law doesn't spell it out," warns Ronald J. James, an employment law attorney at Cleveland's Squire, Sanders & Dempsey. "Juries may decide what you have done is unfair. You really have to ask yourself, *how will this look on a blackboard at the end of a three-day trial, to a jury?*"

"Awards have been horrendous for some employers," says Theodore J. St. Antoine, professor of law at the University of Michigan. "In California, for example, a survey found that plaintiffs win jury trials about 75 percent of the time, with average awards over $300,000." That's besides the $80,000 or so in attorneys' fees required to defend a business in such a suit.

What can you do to avoid getting into trouble? Here are the most common errors committed by employers. Keep them in mind when you develop your own termination policies. Don't learn the hard way.

1. Failure to put honest evaluations in writing.

"You should establish good policies and procedures for reviewing the performance of employees and maintain records of such reviews," says Charles G. Bakaly, Jr., a labor and employment lawyer with the Los Angeles firm of O'Melveny & Myers. "Develop a disciplinary system that causes employees to be counselled and warned for improper performance." This warning system might involve six-month reviews, during which evaluations of performance are written down and filed for reference later.

"Many employers don't like to give negative evaluations because they feel it is bad for morale," says St. Antoine. "Then, when they fire an employee suddenly, it looks suspicious." Without documentation, a worker has a leg up in a lawsuit when claiming dismissal was for other — illegal — reasons.

Consider the case of a company in Rhode Island. The legality of its termination of an employee was upheld, though that employee had a contract. The reason was that the employer had kept careful records of the worker's failure to appear for some important appointments, improper behavior at company functions, and commission of errors that cost the business money.

2. Including dangerous wording in employee handbooks.

Traditionally, courts held that employee handbooks had nothing to do with legal rights and remedies of workers. Employers could change their policies at will.

No more. Many employers have lost big money because handbook wording implies employees will only be fired "for cause." In some states judges consider any handbook a contract; in others only juries can decide.

It often doesn't help to include a statement that the handbook does not

represent a contract. "Some courts have said that you can't have it both ways," says Segal. If the handbook paints a rosy picture by stating that employees will not be fired at will, to muddy the waters with a disclaimer in the same document doesn't help.

Other troublesome phrases can crop up in an employee handbook. You don't want to call employees "permanent," for example, though the term is widely used in the management field. That's because it implies that employees will only be fired for cause. "Regular" is a much better word.

"Include in the manual the statement that an employee can be discharged any time," says Bakaly. Don't try to go it alone on this important issue. Says Bakaly: "These manuals really should be reviewed by a labor attorney."

3. Making informal oral contracts.

"Come with us, Joe, and you'll have a job for life." Used to be, courts considered that statement an expression of present intent. It held no power as a binding contract.

Today, no way. Oral contracts are enforceable!

A recent New York case enforced an oral promise of lifetime employment, to the effect that the employee would only be fired for "just cause." And many other court cases in other states have reached the same conclusion.

"An employer might tell a new employee 'as long as you're doing a good job, you'll have a job for life,'" says Segal. "That kind of statement can come home to roost."

And who is to prove that an oral statement was made? "If someone else is in the room when the statement is made, or if the employee is smart enough to send a letter with the rules as he understand them, this can lead to evidence," says Segal. So can testimony by other employees that they were told the same thing.

The fact that an employee has worked for your company for many years, and that he states he had always understood that he would be terminated only for just cause, can also represent evidence.

This is a good spot to pause and clarify one fine point about the term "just cause." Although it usually refers to improper conduct by the employee, in the area of termination policy it can also refer to a financial downturn suffered by the employer.

4. Not instructing supervisors on correct procedures for terminating workers. Establishing discharge procedures isn't enough. You have to make sure supervisors know and use them. "Communicate your policies so a supervisor does not fire someone in the wrong manner and drag the company into court," says Don Schackne, president of Personnel Management and Administration Associates, Delaware, Ohio.

"Training supervisors in good personnel practices includes instruction on how to counsel employees," says Nancy L. Abell, partner at the Santa Monica firm of Paul, Hastings, Janofsky & Walker. Be safe: institute procedures to double check supervisors' actions to assure adherence to company policies.

"Appoint a czar of discharge," suggests Abell. "Before the firing becomes final the czar should review the employee's version of events."

State law often dictates what documents must be kept in personnel files. Clean out whatever is not necessary. "A common mistake is leaving old documents in a person's personnel file," says David S. Fortney, partner with the Philadelphia firm of Reed, Smith, Shaw & McClay. "Old, outdated re-

ports can come back to haunt employers when terminated workers later claim unfair treatment under a legal standard." And be wary of multiple personnel files kept by layers of supervisors. They are difficult to monitor.

5. Forcing a resignation by making working conditions unreasonable.

Some employees try to avoid the penalties of wrongful discharge by demoting an employee into a position that is so much lower as to be humiliating. Or, they make the working conditions so miserable through harassment that the employee must resign.

Mistakes. "Constructive discharge means working conditions are made so intolerable that a reasonable person in the plaintiff's shoes would have felt compelled to resign," says Abell.

Courts often find against companies whose supervisors have edged out workers in this manner. In a case in Massachusetts, for example, an employee had been punished with material change in duties and a reduction in rank. He resigned. The court decided the employer had breached the employment contract. A similar case came up in Louisiana.

Lawsuits for constructive discharge have become so common that it is almost a given that aggrieved workers will throw it into the lawsuit cooking pot. "We are seeing a growing phenomenon of 'quit and sue for the damage I caused myself,'" says Abell.

6. Terminating an employee for refusing to commit an unlawful act or violate public policy.

Surprisingly, loads of court cases have involved the wrongful termination of employees who have refused employers' orders act in some way against public policy.

Courts have come down harder in this area in recent years. "Years ago terminating someone for refusing to commit an illegal act wasn't even a tort," says Julius Glickman, a Houston attorney who won the nation's largest wrongful discharge case in 1992 (totaling $124.4 million) for his client. "But lately the courts are allowing monetary recovery. You can't fire someone for going on jury duty, or for refusing to go along with a lie to a government regulatory agency."

A special word of warning: "In this area, the most common lawsuits are filed against employers who fired workers for filing workers compensation claims," says Glickman.

State laws also touch on this. In Texas you can't fire someone for attending a political convention or for joining a union or for complying with a subpoena. In Michigan, an employee was discharged for refusing to commit perjury when his employer was on trial. A Pennsylvania employee was terminated for refusing to support his boss' political lobbying efforts.

Also, you can't terminate because an employee's salary is subject to garnishment to pay a debt.

Thoughtful employers will develop defensible policies for termination and enforce them. "Perhaps the best piece of advice is to take an objective view of your procedures for assessing and discharging employees," says Knight. "If you do only what the law requires, then you come across looking cruel and inconsiderate to juries." That lays open your business to a costly lawsuit by discharged workers.

"Look at your procedures from the point of view of an outside observer," concludes Knight. "Do what you have to do to make them fair."

Consider arbitration

While binding arbitration has long been an element to consider in union situations, more non-union employers

are starting to include third party arbitration as a way to resolve termination issues that might otherwise explode into costly court cases.

"I tell my clients to establish arbitration agreements with employees to keep these cases away from juries," says Nancy L. Abell, partner at the Santa Monica firm of Paul, Hastings, Janofsky & Walker. "Set out the whole arbitration system, including any appeal rights, what discovery will be permitted, what the statute of limitations is. Indicate what standard will be used for summary judgement— the federal rules of civil procedure, or state rules?"

The six most common errors bosses make in discharging workers

1. Failure to put honest appraisals in writing.
2. Including damaging language in employee handbooks.
3. Making off-the-cuff oral promises.
4. Not instructing supervisors.
5. Harassing employees to make them quit.
6. Discharging for refusal to violate a matter of public policy.

Employee misdeeds can scuttle wrongful discharge suits

If hit with a wrongful discharge suit, your company may squeeze through a new wrinkle in the law. In many recent cases, courts have decided that employers are not liable for wrongful discharge if it is later discovered that plaintiffs committed seriously wrong acts on the job or lied on their employment applications.

"The point of these cases is that the employees would have been fired anyway, had the employer known what the employee had done," says Trent M. Kittleman, an associate at Arent Fox Kintner Plotkin & Kahn, Bethesda, Md.

The workers' transgressions were not known to the employers until the companies began engaging in the discovery process before going to trial. Attorneys refer to such evidence as "after-acquired knowledge," because it is acquired after lawsuits are filed.

The cases represent a sea change in the law. Traditionally, courts would consider evidence of employee misconduct only if it related somehow to the wrongful discharge complaint being filed.

Be aware, however, that juries will come down on different sides of this issue. An employee wrongdoing must not be trivial.

Veracity cuts both ways. What if employers are discovered to be lying about the real reasons for terminating an employee? Recently, the U. S. Supreme Court decided that an employer was not liable for wrongful discharge because of racial discrimination when the only evidence was proof that the employer lied about the grounds for discharge. (St. Mary's Honor Center v. Hicks.) "This clearly means that the employee has a tougher practical burden," says Theodore St. Antoine, professor of law at the University of Michigan.

Yet the decision doesn't mean employers can lie with impunity. "Employers who lie under oath are subject to prosecution for perjury," warns Joseph M. Sellers, an attorney with Washington Lawyers' Committee for Civil Rights Under the Law.

"Also, you always have to ask yourself what the average juror will think." Sellers adds that the Hicks decision does not prohibit a finding of discrimination when an employer is found to be lying— only that such a finding is not required. □

Latest Line

BY CHARLES SUMMERS, CORRESPONDENT

High-tech ropes offer benefits in certain applications.

When you design tractor tugs powerful enough to assist some of the world's largest ships, what kind of line do you use to withstand the tremendous dynamic forces generated?

Louisiana Offshore Oil Port Inc. (LOOP) asked itself that question when it built the 7,200-hp *LOOP Responder* in 1992.

"It turned out to be almost a two-year study of cordage technology," said Ed Lynch, LOOP's project consultant, "and that led us to look at Kevlar® and Spectra®."

After conducting tests, LOOP opted for ropes made of Spectra. An "extended chain polyethylene" fiber, it's manufactured by AlliedSignal Fibers.

The primary marine user of DuPont's Kevlar, an aramid fiber, is the U.S. Navy. It utilizes mooring lines made of the synthetic material.

Light yet strong

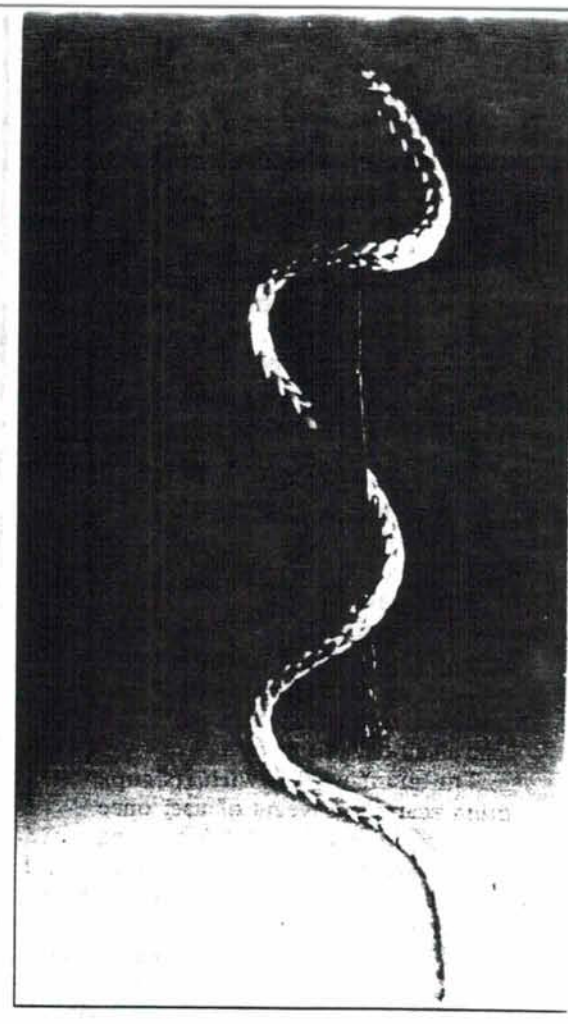
According to Gale Foster of the Cordage Institute, Spectra and Kevlar are high-tenacity, industrial grades of fiber, "with aramids having roughly seven times the strength of steel for its weight and Spectra about 10 times the strength of steel for its weight."

Their high strength-to-weight ratio is their primary advantage. On the inland waterways, for example, where facing wires secure towboats to their tows, the difference between wire and Spectra is significant.

A 180' length of 1" wire rope weighs 300 lbs., said Foster, while the same length of Spectra weighs about 40 lbs. (A Kevlar rope of equal break-strength weighs approximately 52 lbs.) So, crew members handling it lift a lot less weight. This reduces accidents, injuries and, possibly, the size of the crew required.

Al Anderson, senior port captain in Seattle for Crowley Marine Services Inc., said the lighter ropes also save time. Coming into the Columbia River with a tow, tugs heave-to near Astoria, Ore., in order to remove heavy tow wires and make up in the notch of the barge for pushing it upriver.

"When we make up with 2-1/4" wire pendants, it might take us an hour or even longer," he said. "With Spectra line, that whole operation is done in less than 30 minutes."



A big benefit of Spectra and Kevlar ropes are their high strength-to-weight ratios. A 180' length of 1" wire rope weighs approximately 300 lbs. The same length of Spectra weighs about 40 lbs., and a Kevlar rope of equal break-strength weighs approximately 52 lbs.

Foss Maritime uses 10"-circumference polyester and polyester-nylon ropes on its 4,000-hp ship-assist tractor tugs. However, ropes of these materials would have been too heavy and occupied too much space on the winch if put on the company's new 8,000-hp tractors, the *Garth Foss* and *Lindsey Foss*.

"We required a rope with an approximate breaking strength of three-quarters of a million pounds," explained Joel Altus, Foss' supervisor of vessel rigging and supply. "If you make a straight conversion to nylon or polyester, you're looking at a 15" to 16" circumference and nearly four times the weight.

"The minimum equivalence in conventional wire rope would be no less than a 3" diameter, and handling it would be virtually impossible at 17 to 18 lbs. per foot," Altus continued. "Its construction would also require maximum flexibility, very fine wires, plus a much heavier winch and scantlings. In contrast, our 10" Spectra line is about 2.6 lbs. per foot."

Compared to steel wire, both Kevlar and

Spectra offer a significant measure of safety in the event of a break. Broken wire is notorious for snapping back on deck and injuring, even killing, those in its path. Nylon and polyester also can snap back at a high velocity when they part.

The lighter weight and low energy absorption of Spectra and Kevlar fibers mean ropes made of them recoil less. Plus, 4-strand, wire-lay ropes of these fibers can be constructed so that strands break in a "cascading" fashion instead of all at once.

Braid vs. wire-lay

Construction is a point on which manufacturers of synthetic ropes often disagree.

There is a demand for wire-lay rope, said Chuck Smith, vice president of sales and marketing for The American Group's Samson Division, so the company offers it. "But, in our view, the best product is the 12-strand braided, because it is a much more flexible line and handling is, obviously, a lot easier."

Whitehill Manufacturing Corp. produces, among other things, both Spectra and Kevlar 4-strand, wire-lay ropes. The company's West Coast sales engineer, Simeon Whitehill, agreed that a braid is more flexible. But he argued that to achieve the same break-strength as a wire-lay rope requires the manufacturer to use 40 percent to 50 percent more material. That makes the rope heavier and more expensive.

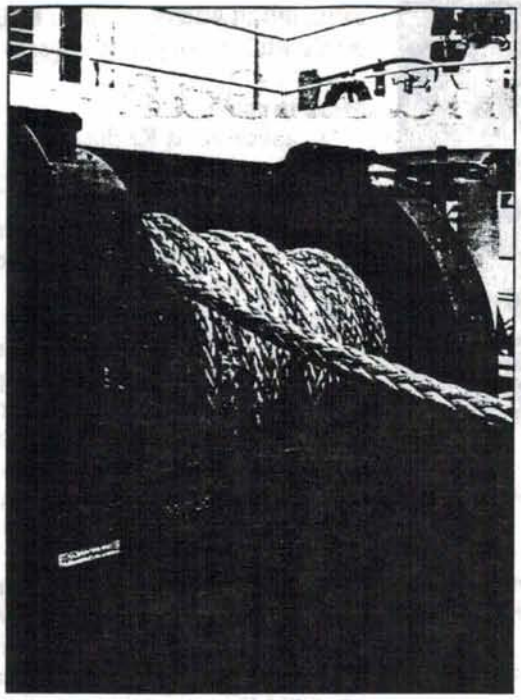
"If you put a twist in a braid," he said, "half the strands get longer, so you are carrying the weight of a load on only half the strands. Nylon and polyester will stretch and eventually even out the load. But that doesn't work with Spectra, and it's worse with Kevlar."

Kevlar and Spectra ropes can be spliced without difficulty, said Foss' Altus, but 4-strand constructions require jacketing to hold the splice together. Twelve-strand does not, he said, because the splice is so interwoven into the strand structure.

Both fibers are more susceptible to abrasion damage than wire. And Kevlar is less abrasion-resistant than Spectra.

Whitehill said that Kevlar ropes work better in a static application, such as mooring, than for ship-assist work, where lines constantly move across rough surfaces.

Twelve-strand, braided construc-



C. Summers.

Foss Maritime opted for Spectra line on its new 8,000-hp tractor tug the *Lindsey Foss*. The company needed a rope with a breaking strength of 750,000 lbs. A nylon or polyester rope with that break-strength would have a 15" to 16" circumference and weigh nearly four times more than the Spectra line.

tions also seem to resist abrasion better than 4-strand, wire-lay ropes, which LOOP used on the *Responder*.

"You have a greater surface area and less specific chafe on one strand," Lynch explained. "I recommended that LOOP consider 12-strand construction the next time around for that reason."

To reduce damage at critical chafe points, both operators and manufacturers have developed a variety of coverings, ranging from the traditional firehose sleeves to jackets of Kevlar and Dacron®.

Some have taken it a step further. The purchasing manager for barge operator Ohio River Co., Bill Geisel, said, "Our guys were so happy to have Spectra they developed innovative ways to protect it. For example, they used pieces of carpet to cover rough surfaces to make the line last longer."

Protection is important for cosmetic reasons, too. "The rope may look a little ragged when you pass it up to a ship because the coatings are ripped up," said Lynch. "The rope itself may be great, but people on the ship look at it and say, 'Wait a minute — that doesn't look too hot.'"

Pros and cons

Choosing between Kevlar and Spectra usually comes down to a user's specific application.

The Navy prefers ropes made of Kevlar, said DuPont's Gordon Caldwell, because of its higher melting point. "Kevlar can withstand a temperature up to 850° before it turns back into carbon," he said. "It never does burn or melt. Spectra, on the other hand, burns and melts at a much lower temperature."

Another reason the Navy buys Kevlar lines, Whitehill said, is because they don't "creep," or elongate, as much as Spectra ropes. "Over time, a Spectra line can elongate as much as 20 percent of its [original] length," he said.

On the other hand, even though Kevlar is much lighter than wire, it still sinks. Spectra floats, so it is less apt to become fouled in the screws.

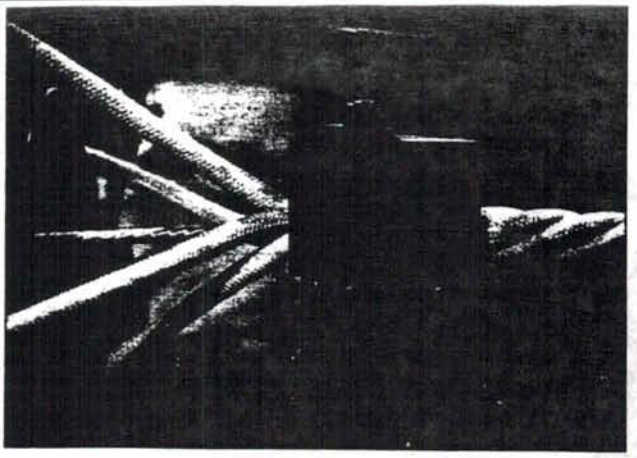
Competitors make a big deal out of rope floating. But people have been dealing with polyester and steel all these years.

Whitehill minimizes the benefit of that feature. "My competitors make a big deal out of rope floating," he said. "But people have been dealing with polyester and steel all these years. It's hard to justify the difference in price for just having a line float."

The dollar difference between the fibers is significant. A rope manufacturer pays about $10.50/lb. for Kevlar, more than double the price of steel. Spectra costs producers $16/lb., and will likely reach $17 this summer.

The Cordage Institute's Foster believes that purchase price shouldn't be the only financial factor when considering a change from wire to synthetic-fiber ropes. There's also the cost savings possible because of fewer injuries to crew.

"I understand that tug and barge companies are being eaten alive by workmen's compensation and injury litigation," he said. "So it isn't just a



Whitehill Manufacturing

Rope manufacturers differ over the best construction method. Some tout wire-lay construction, because it involves less material to produce a given length. Others say a braided construction is better, due to the finished product being more flexible.

matter of one rope costing more, or less, than another."

Despite the advantages of Kevlar and Spectra, more-conventional materials continue to perform well in many applications. This can make it difficult sometimes to justify their cost.

"We've only used Spectra on our enhanced tractors because of their capabilities and the forces they generate," said Altus. "You'd go broke if you used Spectra universally. In other applications, you might have polyester and nylon constructions, or combinations of the two, or use the Spectra as a forerunning pendant."

Also, neither Kevlar nor Spectra are desirable in some situations. When towing an oceangoing barge, for instance, the captain tries to maintain a catenary, or sag, in the towline. The weight of the sagging steel wire and surge chain acts as a shock absorber between the tug and barge, which react independently to wave and swell action.

Spectra, because it floats, and even the slightly heavier Kevlar, would remain taut and inflexible. Although that might not create a problem on calm, inland waters, it would be intolerable while towing in rough seas.

More to come

As advanced as Kevlar and Spectra fibers are, even more sophisticated synthetics loom on the horizon. They include stronger fibers, like Vectran®, a liquid crystal polymer from Hoechst Celanese Corp.

And, Puget Sound Rope Corp. has introduced a new Spectra rope called Plasma™. The company uses a post-production process on Spectra to improve the "molecular orientation of the fiber." Plasma looks and feels like a 12-strand Spectra rope, but reportedly has less creep and 50 percent more strength.

"Neither Kevlar nor Spectra are the end of the road," said Altus. "We're still looking at other constructions and fibers, and are very interested in modern ropes that will enhance safety for our crews and the success of our missions." WB

FOR ADDITIONAL INFORMATION ON THE COMPANIES CONTRIBUTING TO THIS ARTICLE, CIRCLE THE FOLLOWING NUMBERS ON THE READER SERVICE CARD: 250 (ALLIEDSIGNAL FIBERS), 251 (DUPONT), 252 (SAMSON DIVISION, THE AMERICAN GROUP), 253 (WHITEHILL MANUFACTURING CORP.).

F. A. RICHARD & ASSOCIATES

SPEECH MARINE INDEX BUREAU

GOOD MORNING LADIES AND GENTLEMEN. THANK YOU FOR THE INTRODUCTION AND INVITING ME TO PARTICIPATE IN YOUR SEMINAR.

I WANT TO SPEAK WITH YOU TODAY ABOUT THE SUCCESSFUL BUSINESS IN THE YEAR 2000 AND THE ROLE CLAIMS MANAGEMENT WILL PLAY. BUSINESS IN THE NEXT DECADE WILL BE SUBSTANTIALLY DIFFERENT THAN IT HAS BEEN IN ALL THE PREVIOUS DECADES. THE DYNAMICS OF CHANGE ARE WELL UNDER WAY. I BELIEVE THE SUCCESSFUL COMPANIES OF THE FUTURE WILL ALL HAVE THESE THINGS IN COMMON.

1. THEY WILL HAVE BE AT THE MOST EFFICIENT PROFITABLE SIZE.
2. THEY WILL HAVE FORMED STRATEGIC TRADING ALLIANCES.
3. THEY WILL BE SUPER STRONG IN COMMUNICATION AND AUTOMATION.
4. THEY WILL ALL HAVE SUCCESSFUL CLAIMS MANAGEMENT.

WE HAVE GONE THROUGH THE DECADES OF THE 70'S & 80'S AND ARE HALF THROUGH THE 90'S. DURING THIS PERIOD OF 25 YEARS WE HAVE SEEN THE INSURANCE INDUSTRY MOVE FROM AN UNDERWRITING INSTITUTION MODE WHERE A GREAT DEAL OF EFFORT AND PORTION OF THE PREMIUM WAS DEDICATED TO LOSS CONTROL AND CLAIMS MANAGEMENT, TO A FINANCIAL INSTITUTION UNDERWRITING DRIVEN MODE. THE RESULT IS BY AND LARGE THE INDUSTRY IS IN A REACTIVE, PROCESS AND PAY MODE AS RESPECTS CLAIMS IN GENERAL AND PARTICULARLY SO IN THE WORKERS COMPENSATION ARENA. WHILE IT IS VERY EASY TO INDICT THE INDUSTRY IN WHICH I MAKE MY LIVING, I DON'T THINK IT IS FAIR. I BELIEVE WE SHOULD LOOK AT HISTORY.

I BELIEVE THE INDUSTRY BEGAN MOVING IN THE WRONG DIRECTION WHEN NADER AND HIS RAIDERS ATTACKED BY POINTING OUT THAT ONLY 52 CENTS OF EVERY INSURANCE DOLLAR WENT TO PAY CLAIMS. WELL THAT WAS TRUE BUT BECAUSE OF LOSS CONTROL AND CLAIMS MANAGEMENT INSURANCE AND WORKERS COMPENSATION COSTS WERE NOT A PROBLEM. THE INDUSTRY REACTED PROMPTLY TO THE CRITICISM WHILE NO DOUBT FEARING FEDERAL REGULATION, AND TODAY WE HAVE ABOUT 75 CENTS OR HIGHER GOING TOWARD PAYMENT OF CLAIMS. BUT AT WHAT EXPENSE? TODAY THE INDUSTRY SPENDS 5 TO 7 CENTS PER PREMIUM DOLLAR ON LOSS CONTROL AND CLAIMS COMBINED. WHILE ~~THIS MAY LOOK~~ makes THE UNALLOCATED LOSS EXPENSE AND ADMINISTRATIVE EXPENSE PERCENTAGES LOOK GOOD, IT DOES NOTHING POSITIVE FOR THE OVERALL LOSS RESULTS. THUS PENNIES HAVE BEEN SAVED AND DOLLARS LOST. A

F. A. RICHARD & ASSOCIATES, INC.
Corporate Office
2360 Fifth Avenue
Mandeville. LA 70471
Phone (504) 624-8383 • FAX (504) 624-8489

CLASSIC CASE OF FALSE ECONOMY.

IT IS NOT UNCOMMON TO HAVE AN ADJUSTER HANDLING 250 OR MORE OPEN WORKERS COMPENSATION CASES. IF YOU CONSIDER THAT ADJUSTER ONLY HAS ON AVERAGE A MAXIMUM OF 20 WORKING DAYS PER MONTH, @ 8 HOURS PER DAY, 160 HOURS ON THE JOB. NOW WE ALL KNOW NO ONE ACHIEVES MAXIMUM WORKING EFFICIENCY SO LET'S CONSIDER 90% OF THAT TIME AS PRODUCTIVE OR 144 HOURS PER MONTH. THIS ALLOWS A MAXIMUM OF 34.5 MINUTES THE ADJUSTER CAN DEVOTE PER FILE PER MONTH. NOW THAT DOES NOT CONSIDER ANY NEW CASES COMING IN, HANDLING PROBLEMS, ETC. I AM CERTAIN YOU CAN READILY SEE THAT SOME FILES GET ZERO ATTENTION OR AT BEST, VERY LITTLE ATTENTION. I AM AWARE OF SOME COMPANIES WHICH HAVE THEIR ADJUSTERS HANDLING A SUSPENSE OF 300 AND EVEN 400. PLEASE RECOGNIZE IN EVEN A 200 FILE SUSPENSE SITUATION THE ADJUSTER IS IN A PURE REACTION PUTTING OUT FIRES POSITION. THERE CAN BE NO CLAIMS MANAGEMENT NO MATTER WHAT IS ADVERTISED.

THE SUCCESSFUL BUSINESS IN THE FUTURE CANNOT AFFORD TO TRANSFER RISK IN THIS FASHION. IN ALL PROBABILITY THERE ARE OVER PAYMENTS, DUPLICATE PAYMENTS, MISSED RECOVERIES, MALINGERING, AND ALL OF THE ILLS PRODUCED BY INEFFICIENCY. INSTEAD THE SUCCESSFUL BUSINESS MUST HAVE EFFECTIVE CLAIMS MANAGEMENT. TODAY MORE OFTEN THAN NOT THIS IS BEING OUTSOURCED TO THE PEOPLE WHO SPECIALIZE IN FURNISHING THIS SERVICE.

BUT WHAT IS EFFECTIVE CLAIMS MANAGEMENT? IT IS A NICE BUZZ WORD BUT SORT OF LIKE COST CONTAINMENT, WHAT DOES IT REALLY MEAN, AND HOW DO YOU DETERMINE WHETHER OR NOT IT EXISTS.

I LOOK AT CLAIMS MANAGEMENT AS ENCOMPASSING THE LOSS CONTROL AND COST CONTAINMENT EFFORT AS WELL. THIS SHOULD BE A CONCERTED TEAM EFFORT. SOME KEY ELEMENTS OF A SUCCESSFUL PROGRAM WOULD INVOLVE RECOGNITION OF THESE POINTS.

1. MANAGEMENT IS GOING TO GET THE LOWEST LEVEL OF LOSS CONTROL COMPLIANCE THAT YOU ARE WILLING TO ACCEPT IN YOUR ORGANIZATION. WHATEVER YOU PUT UP WITH WILL DETERMINE THE HIGHEST LEVEL REACHED. RECOGNIZE THERE IS ALWAYS A CONFLICT BETWEEN PRODUCTION AND THE COST OF PRODUCTION DOING THE JOB SAFELY. IT IS ALWAYS MORE EXPENSIVE TO DO IT UNSAFELY BUT RARELY DOES MANAGEMENT RECOGNIZE IT AS SUCH BECAUSE THE COST IS NOT PROPERLY PRESENTED.

2. MAKE CERTAIN YOUR LOSS CONTROL PLAN ENCOMPASSES WHAT HAPPENS AT THE OUTSET OF A CLAIM. MAKE CERTAIN THE PROPER PHYSICIANS SEE YOUR INJURED EMPLOYEE AT THE OUTSET. MAKE CERTAIN ALL REFERRAL TO SPECIALISTS IS TO AN APPROVED PHYSICIAN. REMEMBER THE REFERRAL PHYSICIAN IS THE "COMPANY DOCTOR" REGARDLESS OF HIS OUTLOOK. THERE SHOULD BE A RECOGNIZED BUSINESS RELATIONSHIP BETWEEN THE PHYSICIANS WHO TREAT YOUR EMPLOYEES AND THE COMPANY. THE PHYSICIAN MUST UNDERSTAND AND COOPERATE WITH THE NEED TO RETURN THE INJURED EMPLOYEE TO THE WORK PLACE.

3. PARTICIPATE IN A PPO FOR YOUR WORKERS COMPENSATION CLAIMS. IT WORKS. YOU CAN SAVE UP TO 20% ON THE MEDICAL COSTS.

4. THE EDP SYSTEM FOR THE CLAIMS MANAGEMENT SHOULD PRODUCE 100% OF YOUR REQUIRED INFORMATION. THIS INCLUDES TYING THE ACCIDENT FREQUENCY, SEVERITY, AND DISABILITY INDEX RATES BACK TO THE LOWEST LEVEL OF SUPERVISION YOU CAPTURE WITH PAYROLL; THE OSHA 200 LOG, SAFETY ANALYSIS REPORTS RUN AT ANY LOCATION ANY TIME REQUIRED; AND TYING THE COST OF CLAIMS BACK TO THE PEOPLE RESPONSIBLE FOR PRODUCTION AND SUPERVISION. IT IS ONLY THEN THAT THEY WILL START PAYING AS MUCH ATTENTION TO LOSS CONTROL AS IS PAID TO THE COST OF WELDING RODS.

5. ONE OF THE MOST IMPORTANT INDICATORS IS THE WORKERS COMPENSATION COSTS PER MAN HOUR WORKED.

6. OBTAIN CONTRACTUAL RELIEF FROM YOUR SUBS WHEN POSSIBLE BY GETTING THEM TO NAME YOU AS AN ADDITIONAL NAMED INSURED ON THEIR GL POLICIES AND INCLUDE A WAIVER OF SUBROGATION IN YOUR CONTRACT. MAKE SURE YOU GET CERTIFICATES OF INSURANCE WHICH MEET THIS REQUIREMENT.

7. THE CLAIMS MANAGEMENT EFFORT MUST BE GEARED TOWARD GETTING THE INJURED EMPLOYEE BACK TO WORK, EVEN IF AT ALTERNATIVE EMPLOYMENT AT A REDUCED WAGE.

THE PROBLEM WITH CLAIMS ADMINISTRATION AND CLAIMS HANDLING IS THAT IT IS EXTREMELY DIFFICULT TO MEASURE. WHEN WE BUY 15 GALLONS OF GAS AT THE SERVICE STATION THAT IS REALLY EASY TO QUANTIFY AND MEASURE. CLAIMS HANDLING IS AN ENTIRELY DIFFERENT MATTER. I CAN TELL YOU SOME OF THE THINGS YOU NEED TO LOOK FOR TO DETERMINE WHETHER YOU ARE GETTING CLAIMS MONITORING OR CLAIMS MANAGEMENT AND PERHAPS THIS WILL HELP YOU QUANTIFY AND MEASURE YOUR SERVICE.

I SUSPECT MOST OF YOU HAVE CLAIMS MONITORING IN YOUR PRESENT PROGRAM. I ALSO SUSPECT VERY FEW OF YOU HAVE BEEN EXPOSED TO REAL CLAIMS MANAGEMENT. GOOD CLAIMS MANAGEMENT IS NOT CHEAP. IT COSTS MORE TO HANDLE CLAIMS CORRECTLY BECAUSE IT TAKES MORE PEOPLE HANDLING FEWER FILES. POOR CLAIMS HANDLING ON THE OTHER SIDE IS INCREDIBLY EXPENSIVE BECAUSE IT INVARIABLY TRANSLATES INTO LARGER INDEMNITY PAYMENTS AND A HIGHER ALLOCATED EXPENSE RATIO WHICH ULTIMATELY TRANSLATES INTO MUCH HIGHER OVERALL COSTS.

LET ME DESCRIBE A TYPICAL CASE OF CLAIMS MONITORING AND SEE IF IT SOUNDS FAMILIAR. AN EMPLOYEE GETS HURT ON YOUR JOB. YOUR OFFICE IS NOTIFIED THAT DAY OR THE FOLLOWING DAY AND YOUR PEOPLE PREPARE THE EMPLOYERS FIRST REPORT OF INJURY & MAIL IT TO THE INSURANCE CARRIER. THEY RECEIVE THE REPORT IN A DAY OR THREE, SET UP A FILE IN A DAY OR TWO AND WAIT FOR THE DOCTORS FIRST REPORT. YOU GET THE DOCTORS REPORT AND MAIL IT TO THE CARRIER. THEY RECEIVE IT, CALCULATE THE COMP RATE OFF THE HOURLY RATE FOR THE WORKER AND ISSUE THE FIRST WEEKS COMPENSATION CHECK. IN SOME CASES THE INJURED CLAIMANT IS CONTACTED AND INTERVIEWED ABOUT HIS ACCIDENT AND PERHAPS A STATEMENT IS TAKEN FROM HIM OVER THE PHONE. THIS IS PROBABLY THE EXCEPTION NOT THE RULE. THE HANDLING ADJUSTER AWAITS MEDICAL REPORTS FROM THE DOCTOR AND CONTINUES TO PAY WEEKLY BENEFITS AND MEDICAL BILLS IN A TIMELY FASHION. THE CLAIMANT UNDERGOES A REGIMEN OF TREATMENT AND IS SUBSEQUENTLY GIVEN PHYSICAL THERAPY. EVENTUALLY HE IS PLACED IN THE HOSPITAL FOR "CONSERVATIVE MEDICAL EVALUATION" A MYLEOGRAM AND CAT SCAN IS ADMINISTERED, A BULGING DISC AT L4-L5 LEVEL IS INDICATED AND A LAMINECTOMY IS PERFORMED. THE CLAIMANT CONTINUES TO RECEIVE HIS WEEKLY BENEFIT CHECKS AND HIS HOSPITAL BILLS ARE PAID LESS ANY CHARGES NOT COVERED BY THE COMP ACT SUCH AS TELEVISION RENTALS, PRIVATE ROOM RATES ETC.

LETS ASSUME THIS WORKER WAS BEING PAID $8.00 PER HOUR AND WORKING A 40 HOUR WEEK. HIS TAKE HOME PAY MIGHT LOOK SOMETHING LIKE THIS. $320.00 GROSS LESS ABOUT $23.00 SOCIAL SECURITY AND ABOUT $48.00 INCOME TAXES AND ABOUT $50.00 MAJOR MEDICAL CONTRIBUTION. THUS HIS TAKE HOME PAY IS $199.00 PER WEEK. NOW HIS COMPENSATION RATE IF CALCULATED AS DESCRIBED ABOVE WILL BE $213.00. RIGHT AWAY YOU SEE THAT HE IS BETTER OFF UNDER COMP BECAUSE NOW HE DOESN'T HAVE TO PAY FOR HIS TRANSPORTATION TO AND FROM THE JOB SITE. ON TOP OF THAT, LIKE EVERY OTHER GOOD WORKING AMERICAN HE HAS HIS HOUSE OR MOBILE HOME FINANCED, HIS CAR FINANCED AND AT LEAST HIS ENTERTAINMENT CENTER FINANCED. NOW NO LENDER TODAY IS GOING TO FINANCE ANYTHING FOR AN HOURLY WORKER

IN INDUSTRY WITH OUT CREDIT LIFE AND CREDIT DISABILITY INSURANCE. SO LETS ASSUME WITH OUR MYTHICAL WORKER THAT HIS HOUSE PAYMENT IS $300.00 PER MONTH, HIS CAR PAYMENT IS $150.00 PER MONTH AND HIS ENTERTAINMENT CENTER IS $35.00 PER MONTH.

IF WE TAKE THE CLAIMANTS WEEKLY PAY AND CONVERT IT TO A MONTHLY BASIS USING 4 WEEKS PER MONTH AS THE MAXIMUM NUMBER OF WEEKS HE WOULD PROBABLY WORK ON AVERAGE THEN THE MONTHLY TAKE HOME PAY PRE WORKERS COMP INJURY IS $796.00 AND HIS MONTHLY PAYMENTS ARE $485.00 LEAVING HIM A TOTAL OF $311 FOR FOOD, GAS, AND DISCRETIONARY SPENDING. NOW LETS LOOK AT THIS SAME WORKER POST INJURY AND ON WORKERS COMPENSATION. HIS WORKERS COMPENSATION WILL PAY HIM ABOUT $916.00 PER MONTH, 4.3 TIMES $213 BUT NOW ONCE HE IS OUT 30 DAYS, HIS MONTHLY PAYMENTS OF $485.00 PER MONTH ARE PICKED UP BY HIS DISABILITY INSURANCE LEAVING HIM WITH DISCRETIONARY SPENDING OF $916.00 AND NOTHING TO DO BUT STAY HOME, WATCH TV, RENT VIDEOS, EAT, AND COMPLAIN TO THE DOCTOR.

NOW I ASK YOU IS IT ANY WONDER THAT THE MAN UNDER GOES SURGERY WHICH MAY NOT BE NECESSARY? WHY NOT, THE FINANCIAL INCENTIVES ARE ALL THERE.

ON TOP OF ALL THIS HE SEES THE ATTORNEYS ADS ON TV OR HIS UNION BOOSTER ARRANGES FOR AN ATTORNEY. AT ANY RATE HE CONSULTS AN ATTORNEY FOR ADVICE. THE ATTORNEY FILES A PERMANENT AND TOTAL DISABILITY ACTION AS WELL AS A FAR FETCHED THIRD PARTY TORT ACTION WHICH IS PROBABLY MERITLESS. THE EMPLOYER IS THEN CALLED UPON TO DEFEND THE THIRD PARTY ACTION UNDER IT'S CONTRACT WITH THE THIRD PARTY OR CREATES AN OCCUPATIONAL DISEASE CLAIM ALL IN SEARCH OF ATTORNEY FEES.

DOES ANY OF THIS SOUND FAMILIAR? I SUSPECT IT DOES.

MY DEFINITION OF CLAIMS MANAGEMENT WORKS DIFFERENTLY. IT HAS A GREAT DEAL TO DO WITH COMMON SENSE AND COMMUNICATION. WE CONSIDER GOOD CLAIMS MANAGEMENT TO CONSIST OF SIX ITEMS:

1. PROMPT INVESTIGATION TO DETERMINE EXPOSURE.
2. CONTROL OF CLAIMANT.
3. COST CONTAINMENT.
4. MEDICAL MANAGEMENT.
5. ELIMINATION OR MITIGATION OF EXPOSURE.
6. INDEXING AND COORDINATION OF PROGRAMS.

THESE ARE GREAT SOUNDING BUZZ WORDS BUT HOW DO YOU PUT THEM INTO PRACTICE.

A PLAN OF HANDLING SHOULD BE INSTITUTED WHERE ALL ACCIDENTS INVOLVING LOST TIME SHOULD BE REPORTED BY TELEPHONE OR FAX SO AN ADJUSTER CAN BE IMMEDIATELY ASSIGNED TO THE CASE. AT SOME OF OUR LARGE ACCOUNTS WHICH HAVE A HOSPITAL ON PREMISES, THE INJURED WORKER SEES OUR ADJUSTER IN THE HOSPITAL IMMEDIATELY AFTER SEEING THE DOCTOR. IF IT IS A VERY MINOR CASE THEN IT CAN BE HANDLED BY AN INSIDE ADJUSTER BY PHONE. IF IT IS A LOST TIME CASE AN ADJUSTER MUST MEET PERSONALLY WITH THE CLAIMANT. IN EITHER CASE THE CLAIMANT MUST BE IMMEDIATELY CONTACTED AND A PERSONAL VISIT MADE TO ESTABLISH CONTROL. THE CASE MUST ALSO BE IMMEDIATELY INVESTIGATED TO DETERMINE EXPOSURE, APPLICABILITY OF SUBROGATION OR THIRD PARTY CONTRACTUAL EXPOSURE, AND SECOND INJURY OR SPECIAL FUND RELIEF. THE CLAIMANT SHOULD BE CONTACTED THE SAME DAY IN ALL CASES NO LATER THAN 24 HOURS. THE CLAIMANTS PROPER AVERAGE WEEKLY WAGE MUST BE DETERMINED SO THE PROPER COMP RATE IN ACCORDANCE WITH THE LAW CAN BE CALCULATED. LOSS CONTROL INTERFACE MUST BE MADE FOR PREVENTION OF FUTURE SIMILAR LOSSES.

CONSIDER WHETHER OR NOT THE EMPLOYEE CAN BE CLASSED AS A "PART TIME" WORKER AT THE OUTSET OF THE EMPLOYMENT. IF THIS IS DONE THEN THE COMP RATE MAY WELL BE SIGNIFICANTLY LOWER. IT PROBABLY WOULD BE MORE ACCURATE AS WELL AS REALISTICALLY MULTIPLYING THE HOURLY RATE TIMES 40 HOURS A WEEK CONTEMPLATES THE WORKER WORKS 52 WEEKS A YEAR. HARDLY LIKELY IN YOUR INDUSTRY IN MY OPINION.

MEDICAL MANAGEMENT MUST BE INVOLVED EARLY ON IN THOSE CASES WHICH WARRANT THIS INTERVENTION. THE FOCUS OF THE MEDICAL CASE MANAGEMENT MUST BE TO GET THE INJURED EMPLOYEE BACK TO THE JOB OR AND ALTERNATIVE JOB. THE EMPLOYER MUST PROVIDE ALTERNATIVE EMPLOYMENT. DO THIS BECAUSE IT IS IN FACT LESS COSTLY.

TYPICALLY IN LOUISIANA TODAY A TORN MEDIAL MENISCUS KNEE INJURY INVOLVES OVER 39 WEEKS OF TEMPORARY TOTAL DISABILITY. YET WHEN YOU LOOK AT THE DISABILITY GUIDELINES FOR THIS INJURY PUBLISHED BY THE AMA YOU FIND IT IS LIMITED TO ABOUT 6 WEEKS. THE DIFFERENCE IS ALTERNATIVE EMPLOYMENT IS NOT BEING USED. THE INJURED EMPLOYEE FALLS INTO THE SYSTEM DESCRIBED EARLIER AND ALL THE INCENTIVES WORK AGAINST THAT EMPLOYEE RETURNING TO WORK. IF WE GET THAT SAME EMPLOYEE BACK TO WORK IMMEDIATELY, EVEN IF IT MEANS ALL HE DOES IS ANSWER THE PHONE OR WATCH THE PARKING LOT SOME WHERE YOU ARE FAR BETTER OFF. IT MAY WELL MEAN PAYING HIM A WAGE COMMENSURATE WITH THE ALTERNATIVE WORK HE IS DOING AND PAYING A REDUCED TEMPORARY PARTIAL DISABILITY WORKERS COMP BENEFIT AS WELL. NEVER THE LESS YOU HAVE REMOVED MOST OF THE DISINCENTIVES THAT WOULD BE APPLICABLE.

ON SERIOUS OR QUESTIONABLE INJURIES WE BELIEVE AN INVESTIGATION SHOULD BE CONDUCTED PROMPTLY TO DETERMINE EXPOSURE AND TO EVALUATE THE EXPOSURE. OBVIOUSLY ON MINOR CASES THE INVESTIGATION CAN BE HANDLED AT THE LEAST POSSIBLE APPROPRIATE METHOD BUT IT STILL SHOULD BE DONE. ON SERIOUS CASES A FULL INVESTIGATION MUST BE CONDUCTED. THIS WILL ENTAIL AN IMMEDIATE VISIT TO THE SCENE TO PRESERVE EVIDENCE BEFORE IT IS LOST. WE WILL WANT A FIRST HAND VIEW, PHOTOS WHERE FAVORABLE AND STATEMENTS FROM FAVORABLE WITNESSES. THIS IS ULTIMATELY THE CHEAPEST WAY TO GO. YOU NEED TO GET A FIRST HAND VIEW OF THE WITNESSES AND SEE WHAT KIND OF IMPRESSION THEY ARE GOING TO MAKE IN THE COURTROOM SHOULD IT GO THAT WAY. THE ALTERNATIVE OF WAITING UNTIL A LAWSUIT OR ACTION IS FILED IS SIMPLY TOO EXPENSIVE. RUNNING DOWN WITNESSES MONTHS OR YEARS LATER CAN LITERALLY COST THOUSANDS OF DOLLARS AND OFTEN THE WITNESS HAS TURNED HOSTILE OR HAS A MEMORY LAPSE.

WE TRY TO DO AS MUCH INVESTIGATION AS POSSIBLE IN THE EMPLOYMENT ATMOSPHERE. IF POSSIBLE, SETTLEMENT NEGOTIATIONS SHOULD ALSO BE CONDUCTED IN THE EMPLOYMENT ATMOSPHERE NOT IN THE CLAIMANTS KITCHEN.

A WORD ABOUT INVESTIGATIONS; THE WITNESS SHOULD BE INTERVIEWED FIRST AND IF UNFAVORABLE DO NOT TAKE HIS STATEMENT. WE DON'T WANT TO PRESERVE UNFAVORABLE EVIDENCE THAT CAN BE USED AGAINST US AT OUR OWN EXPENSE. UNDER NO CIRCUMSTANCES SHOULD A TAPE RECORDER BE TURNED ON UNTIL YOU KNOW WHAT THE CLAIMANT IS GOING TO SAY. NEVER TAKE PHOTOGRAPHS WHICH CAN HURT YOU. A BROKEN LIGHT BULB IN THE BACKGROUND OF A PHOTO CAN END UP MAKING THE PLAINTIFFS CASE THAT THE AREA WAS NOT PROPERLY LIGHTED.

IF WE HAVE TO END UP TRYING THE CASE THEN WE ARE GOING TO HAVE TO TURN OVER EVERY STONE IN THE CLAIMANTS PAST. WE ARE GOING TO LOOK AT THE EMPLOYMENT APPLICATION HE FILLED OUT AND EVERY OTHER DOCUMENT HE HAS COMPLETED WHILE WORKING FOR YOU THAT IS AVAILABLE IN HIS PERSONNEL FILE. WE ARE GOING TO TRY TO FIND SOMEPLACE OR SEVERAL PLACES WHERE HE HAS LIED. BE IT ABOUT HIS HIGH SCHOOL DIPLOMA OR HIS RECORD OF EMPLOYMENT OR WHATEVER. THIS IS OFTEN GOING TO BE THE MOST HELPFUL DOCUMENT AVAILABLE TO US IN THE DEFENSE OF THE CASE THEREFORE IT IS IMPORTANT THAT IT BE A GOOD ONE AND THAT IT BE FULLY COMPLETED BY THE CLAIMANT IN HIS OWN HANDWRITING AND SIGNED BY HIM AND DATED BY HIM.

WE MUST PRESERVE ALL FAVORABLE EVIDENCE AND WE MUST BE EXTREMELY CAREFUL IN PRESERVING THE CHAIN OF EVIDENCE SO THAT IT CAN BE PROPERLY INTRODUCED.

WE MUST EXPLORE ALL OF THE BUSINESS RELATIONS WITH THE PARTIES AND EQUIPMENT INVOLVED IN THE ACCIDENT. WE MUST LOOK AT THE CONTRACTS, NOT TO SEE WHO IS DOING WHAT FOR HOW MUCH MONEY, BUT FOR THE EXISTENCE OF HOLD HARMLESS AND INDEMNITY CLAUSES, WHAT THEY SAY AND WHAT THEY ARE BASED UPON. WE ALSO HAVE TO LOOK FOR THE PRESENCE OF OCPL REQUIREMENTS, ADDITIONAL NAMED INSURED REQUIREMENTS AND WAIVER OF SUBROGATION REQUIREMENTS.

THE RISK SHOULD MAKE THE FIRST REPORT OF INJURY FILING WITH THE PROPER AUTHORITY SUCH AS THE OFFICE OF WORKERS COMPENSATION OR THE DOL. WITH SOME SYSTEMS SUCH AS OURS THIS FILING IS MADE THROUGH AUTOMATION AND ALL SUBSEQUENT FILINGS ARE AUTOMATED.

IT IS IMPORTANT THAT YOU DEVELOP A PHILOSOPHY THAT YOU ARE GOING TO FOLLOW IN YOUR CLAIMS MANAGEMENT. YOU SHOULD TREAT ALL CLAIMANTS WITH DIGNITY AND RESPECT AS WE DESIRE TO BE TREATED. IMMEDIATELY IDENTIFY ALL JUST CLAIMS AND HANDLE THEM PROMPTLY, IN A FAIR AND PROPER MANNER. BASICALLY PAY WHAT WE OWE AS QUICKLY AS POSSIBLE WITHOUT FORCING PEOPLE TO RESORT TO LITIGATION. ON THOSE FEW CLAIMS WHERE FRAUD IS IDENTIFIED, FIGHT THEM ALL THE WAY.

IT IS EXTREMELY IMPORTANT IN MAINTAINING CONTROL THAT ALL PAYMENTS DUE THE CLAIMANT BE MADE TIMELY TO ARRIVE IN HIS HANDS TIMELY AND THAT HE FULLY UNDERSTAND WHAT EACH PAYMENT COVERS. IT MIGHT INTEREST YOU TO KNOW THAT IN THE STATE OF MICHIGAN IT TAKES AN AVERAGE OF 28 DAYS FROM THE DATE OF THE ACCIDENT UNTIL THE DATE PAYMENT IS ISSUED BY THE CARRIER. THIS MAY WELL BE THE SAME FOR OTHER STATES, BUT MICHIGAN IS THE ONLY STATE THUS FAR THAT HAS PUBLISHED THE INFORMATION. THIS IS AN UNACCEPTABLE TIME PERIOD. HOW DOES THE INJURED WORKER FEED HIS CHILDREN?

DURING THE COURSE OF CARE THE ADJUSTER MUST FOLLOW THE CARE REGIMEN VERY CAREFULLY AND MUST ASK SPECIFIC QUESTIONS ON A TIMELY BASIS. MEDICAL CASE MANAGEMENT SHOULD BE USED ON PROFILE IDENTIFIED CASES.

IT IS TOTALLY INSUFFICIENT TO ADDRESS A LETTER TO THE PHYSICIAN ASKING HIM FOR A CURRENT OR UP TO DATE MEDICAL REPORT. THIS ACCOMPLISHES ABSOLUTELY NOTHING AND IN FACT COULD RESULT IN HARM IF THE REPORT IS WISHY WASHY. WHAT THE ADJUSTER NEEDS TO DO IS ADDRESS SPECIFIC QUESTIONS TO THE PHYSICIAN SUCH AS:

DOES THIS INJURED EMPLOYEE'S PROBLEMS ALL RELATE TO THE INJURY WHICH OCCURRED ON THIS PARTICULAR DATE OF ACCIDENT FOR THIS EMPLOYER. IF NOT PLEASE GO INTO DETAIL COVERING THE PAST HISTORY.

IS THE EMPLOYEE TOTALLY DISABLED FROM ALL EMPLOYMENT AT PRESENT? IF NOT COULD HE WORK IN SOME SORT OF SEDENTARY EMPLOYMENT WITH REASONABLE ACCOMMODATIONS?

HAS THIS INJURED EMPLOYEE REACHED A PERMANENT AND STATIONARY PLATEAU? IF NOT WHEN DO YOU EXPECT THIS TO OCCUR? IF SO, HAS THE INJURED EMPLOYEE REACHED MAXIMUM MEDICAL IMPROVEMENT?

WILL HE BE RATED WITH A DISABILITY IN ACCORDANCE WITH THE AMA ORTHOPAEDIC GUIDELINES? IF SO PLEASE RATE THE DISABILITY TO THE PARTICULAR PART OF THE BODY INVOLVED.

WILL THE INJURED EMPLOYEE BE ABLE TO RETURN TO ANY TYPE OF GAINFUL EMPLOYMENT? IF SO WILL HE BE ABLE TO RETURN TO HIS FORMER TYPE OF EMPLOYMENT? IF NOT WILL YOU INDICATE WHAT WORK RESTRICTIONS WILL APPLY.

YOU WILL NOTE THESE ARE VERY SPECIFIC QUESTIONS WHICH DESERVE SPECIFIC ANSWERS. IF YOU HAVE THE RIGHT DOCTORS TREATING THE CLAIMANT THEY PRESENT NO PROBLEM. IF NOT YOU ARE LETTING THE DOCTOR KNOW YOU WANT AND EXPECT STRAIGHT ANSWERS. IF THE CLAIMANT ENDS UP IN THE HANDS OF AN UNFAVORABLE PHYSICIAN, AND OCCASIONALLY IT WILL HAPPEN, WE MUST EXERCISE OUR RIGHT TO INDEPENDENT MEDICAL EXAMS AND RIGHT OF SECOND REVIEW PRIOR TO AUTHORIZING PAYMENT FOR ANY HOSPITALIZATION OTHER THAN EMERGENCY TREATMENT.

WE MUST GET THE CLAIMANT TO RETURN TO THE WORK FORCE. IF HE WILL NOT BE ABLE TO RETURN TO HIS FORMER OCCUPATION THEN WE MUST INVOLVE REHAB TO TEST, EVALUATE AND DO A JOB STUDY FOR THE CLAIMANT. THAT IS ABOUT ALL WE WANT REHAB TO DO ON THE AVERAGE CASE. YOU HAD BETTER GET GOOD REHAB OR YOU WILL END UP PAYING A BUNCH OF MONEY FOR THESE PEOPLE TO HOLD THE CLAIMANTS HAND AND SYMPATHIZE WITH HIM. THAT IS NOT WHAT WE ARE AFTER. WE ARE NOT REALLY INTERESTED IN TRYING TO RETRAIN A PERSON WITH A SIXTH GRADE EDUCATION TO BE A COMPUTER PROGRAMMER. I HAVE SEEN JUST SUCH AN EXAMPLE TAKE PLACE. WHAT WE ARE AFTER IS A JOB STUDY WHICH WILL IDENTIFY WHAT THE CLAIMANT CAN DO AND JUST WHAT WAGE HE CAN EARN. THIS WILL IMMEDIATELY REMOVE THE CLAIM FROM THE PERMANENT AND TOTAL DISABILITY CATEGORY AND FIX THE CLAIM EITHER

WITHIN A LOSS OF WAGE EARNING CAPACITY. IF THE INJURY IS TO A SCHEDULED MEMBER OF THE BODY, YOU MAY ONLY HAVE TO PAY THE SCHEDULE ONCE YOU DETERMINE EMPLOYABILITY.

WE MUST BE CONSTANTLY ON THE LOOKOUT FOR A THIRD PARTY TO RECOVER OUR COSTS OR TO CONTRIBUTE. ALL CONTRACTS SHOULD BE EXPLORED TO DETERMINE POSSIBLE RELIEF. ALL THIRD PARTY PLACING ON NOTICE SHOULD BE CLEARED WITH YOU PRIOR TO INSTITUTING ACTION. WE MUST REALIZE BUSINESS RELATIONS ARE FRAGILE AND THERE MAY BE MUCH MORE THAN SIMPLY THE CLAIM AT HAND AT STAKE.

UTILIZING GOOD CLAIMS MANAGEMENT WE HAVE CONTROLLED THE CLAIMANT, MANAGED THE MEDICAL TREATMENT AND IDENTIFIED AND OBTAINED A RATING OF THE DISABILITY. WE HAVE DONE OUR JOB STUDY AND WE NOW KNOW THE PRESENT ANTICIPATED LOSS OF WAGE EARNING CAPACITY OR SEB STATUS. THE EASY WAY OUT IS TO SIMPLY START PAYING A REDUCED COMP RATE. NOW IS WHEN YOU CAN GET RID OF THE CASE IF THE COMP ACT ALLOWS SETTLEMENTS.

IF WE ARE DEALING WITH A JONES ACT CASE OR IF WE HAVE A THIRD PARTY CONTRACTUAL TYPE EXPOSURE WHICH WE ARE GOING TO HAVE TO EAT THROUGH AN ACTION OVER POSSIBILITY THEN WE MUST BE ASTUTE ENOUGH TO RECOGNIZE THIS EXPOSURE AND TO ELIMINATE IT. IN ADDITION THERE IS ANOTHER EXPOSURE WHICH HAS NOT YET REARED IT'S UGLY HEAD AND THAT IS THE POSSIBILITY OF A RETURN TO TEMPORARY TOTAL DISABILITY STATUS DUE TO A CHANGE IN THE MEDICAL PICTURE OR GENERAL DETERIORATION OF THE CLAIMANTS MEDICAL CONDITION DUE TO AN INTERVENING CAUSE WHICH YOU CAN GET STUCK WITH SUCH AS HEPATITIS OR AIDS.

WE SUBSCRIBE TO THE THEORY THE ONLY GOOD CASE IS A CLOSED CASE THAT STAYS CLOSED. IF LUMP SUM SETTLEMENTS ARE PERMITTED, I RECOMMEND MAKING A SETTLEMENT PROVIDED YOU MAKE A SAVINGS. WITH CLAIMS YOU SHOULD SUBSCRIBE TO THE MURPHY'S LAW THEORY, WHAT CAN GO WRONG SHALL GO WRONG. YOU NEED TO GET RID OF THE EXPOSURE NOW THAT YOU HAVE IT IN THE BEST POSSIBLE POSITION.

YOU SHOULD ALSO CONSIDER MAKING USE OF A STRUCTURED SETTLEMENT VEHICLE ON SERIOUS CASES.

THE ONE THING I HOPE YOU HAVE GATHERED FROM THIS SPEECH IS THERE IS A SUBSTANTIAL DIFFERENCE BETWEEN CLAIM PROCESSING OR CLAIMS MONITORING AND CLAIMS MANAGEMENT. THE FORMER ALLOWS THINGS TO HAPPEN AND JUST LOPES ALONG. THE LATTER CAUSES THE RIGHT THINGS TO HAPPEN WHICH RESULT IN SAVINGS. YOU SHOULD TRY YOUR BEST TO MAKE SURE YOU GET CLAIMS MANAGEMENT.

WELL HOW DO YOU GET CLAIMS MANAGEMENT. PROBABLY THE EASIEST METHOD IS TO SIMPLY UNBUNDLE THE SERVICES ASPECT OF THE INSURANCE AND CONTRACT THE LOSS CONTROL AND CLAIMS ADMINISTRATION OUT SEPARATELY YOURSELF. IF YOU ARE A QUALIFIED SELF INSURED, THIS IS THE STANDARD WAY BECAUSE YOUR INSURANCE IS EXCESS COVERAGE. THERE ARE FRONTED AND LARGE DEDUCTIBLE PROGRAMS WITH UNBUNDLING AVAILABLE. THE INSURANCE MARKET PLACE IS GOING THROUGH THE DECADE OF CHANGE AS WELL. SHOULD YOU DESIRE SOME HELP IN THIS AREA I WILL BE HAPPY TO CONSULT WITH YOU INDIVIDUALLY.

THE BEST ADVICE I CAN GIVE YOU AT THIS POINT IS TO RECOGNIZE THAT THE INSURANCE INDUSTRY TODAY IS DIFFERENT THAN SOME YEARS BACK. RECOGNIZE WHAT YOU NEED AND MAKE CERTAIN YOU GET EVERYTHING YOU CAN FROM YOUR PROGRAM. IF YOU HAVE A POOR ADMINISTRATOR, SEEK CHANGE. MAKE CERTAIN YOU DO EVERYTHING YOU CAN AT YOUR END PARTICULARLY STRESSING THE POINTS I HAVE MADE IN THIS SPEECH AND STRESS AN ACCIDENT PREVENTION PROGRAM ON THE JOB AT ALL TIMES. GET FINANCIAL ACCOUNTABILITY BACK TO THE LOWEST LEVEL YOU CAN. MAKE THAT FOREMAN OR SUPERVISOR RESPONSIBLE FOR THE PROFITABILITY OF HIS JOB INCLUDING THE COST OF CLAIMS. THIS IS EASILY ACCOMPLISHED BY SETTING UP YOUR LOSS RUNS BY LOCATION CODES AND PRE CODING YOUR ACCIDENT REPORTS. IT IS SOME THING WE DO AS A ROUTINE MATTER ALTHOUGH SOME CARRIERS OR THIRD PARTY ADMINISTRATORS MAY NOT HAVE THAT CAPABILITY.

A WORD OF CAUTION ABOUT COST CONTAINMENT. BE CAREFUL ON THE EXPENSE SIDE. GENERALLY IT PAYS FOR ITSELF BUT THERE ARE SOME VENDORS OUT THERE WHO WILL WRITE YOU $500 REPORTS WHICH BASICALLY REGURGITATE THE FACTS THEY HAVE GLEANED FROM YOUR FILE AND CALL IT A REHABILITATION REPORT. I HAVE SEEN MANY EXAMPLES OF THIS AND THUS WE WENT IN HOUSE AND HAVE ALL THE MEDICAL CASE MANAGERS, UTILIZATION REVIEW PEOPLE, VOC REHAB PEOPLE, AND SURVEILLANCE PEOPLE REPORT THEIR NOTES DIRECTLY TO THE ADJUSTERS ELECTRONIC NOTES FILE. THIS GOES A LONG WAY TOWARD INCREASING EFFICIENCY AND REDUCING COST. YOU SHOULD CERTAINLY BE ON LINE TO THE ADJUSTERS NOTES FILE AS ALL OF OUR CLIENTS ARE.

LAST BUT CERTAINLY NOT LEAST YOU MUST HAVE AN ADEQUATE INDEXING SYSTEM WHICH ACCESSES BOTH THE MARINE INDEX AND THE REGULAR INDEX SYSTEM. THIS IS CRITICAL. IN ADDITION YOU NEED TO COORDINATE YOUR WORKERS COMPENSATION CLAIMS WITH YOUR GROUP HEALTH CLAIMS AS WE HAVE FOUND THAT 8% OF THE CLAIMS HAVE SOME ELEMENT OF CROSS OVER FRAUD. USUALLY THE CLAIMANT IS WORKING ON

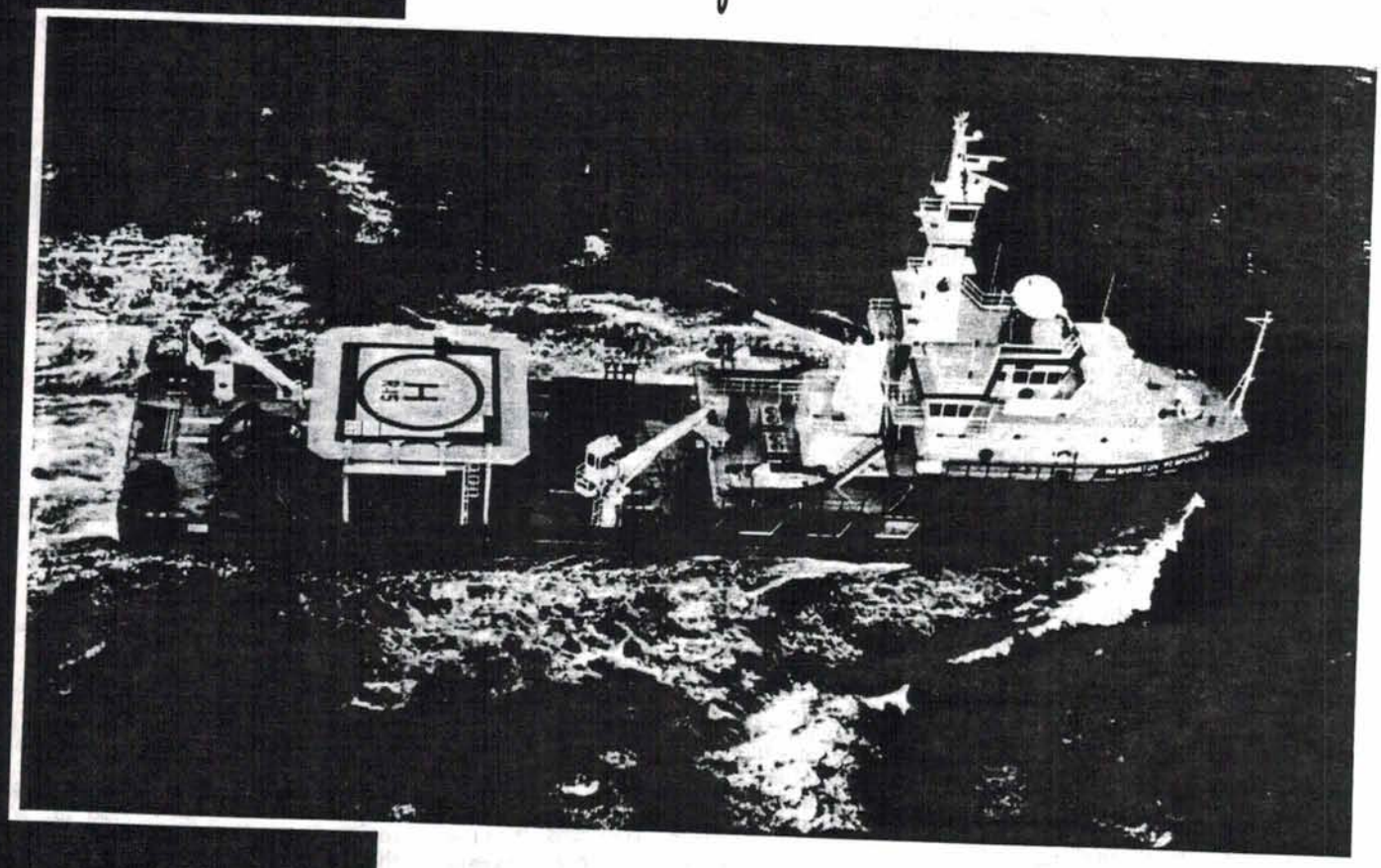
HIS DEDUCTIBLE WITH PRESCRIPTION DRUGS, ETC. THIS CAN BE VERY HELPFUL BECAUSE ON THE CLAIM FORM FILED WITH THE HEALTH CARRIER HE HAS TO CHECK A BLOCK WHICH SAYS IT IS NOT A WORK RELATED INJURY.

THANK YOU FOR YOUR KIND ATTENTION. I WILL NOW BE HAPPY TO FIELD ANY QUESTIONS OR COMMENTS FROM YOU.

5-1-95

FRANCIS A. RICHARD
PRESIDENT

Vol. 13 # 1
July 1995



MSRC operates sixteen high-sea oil-spill recovery vessels like the *Washington Responder*, shown here.

Who is afraid of a little old oil spill?

BY D.W. LERCH

Ever since the ***Exxon Valdez*** casualty in Prince William Sound sparked public and congressional awareness of the agony caused by a major oil spill, all of us who make our living or spend our leisure time on salt water have been affected by the laws and regulations promulgated to avoid even the smallest of spills.

No one, from the CEO of Exxon, to the child finding his first clam, ever wants to see another spill like that from the ***Exxon Valdez***.

We don't want a major earthquake either.

Earthquakes and oil spills do damage to people and to nature, and cost a lot to recover from, but we shall probably have both within our lifetimes.

Because we cannot do much about earthquakes, let's look at oil spills.

The costs of oil spill pollution, prevention, preparation and response have increased substantially since the **Oil Pollution Act of 1990** (OPA90) was implemented.

Although the costs of spill prevention and response plans, equipment and insurance have risen dramatically, the financial consequences of a major oil spill have risen even more.

But, one might say, these new costs are just part of the price of doing business in the United States. Therefore,

companies and individuals, must do all they can to try to keep the costs down while complying with both the intent and the letter of the law. Not always an easy task, when the causes of the costs are government induced.

The increasing costs of prevention are illustrated by the story of the reef-bound fish boat.

In the not too distant past, a 57-foot fishing vessel ran onto a reef in Alaska and, unable to free herself on an ebb tide, asked the Coast Guard for a portable pump, in case she took on water during the flood, before she was off the reef. Fearing an oil spill was possible, the Coast Guard made several over flights and mobilized some response efforts, but never did bring a pump to the stricken vessel.

The fish boat came off on the next tide, no pump had been delivered, nor was any oil spilled, but the skipper was presented with a bill for something on the order of $10,000 to cover the government's response, not for vessel safety or the preservation of human life, but for the protection of the environment.

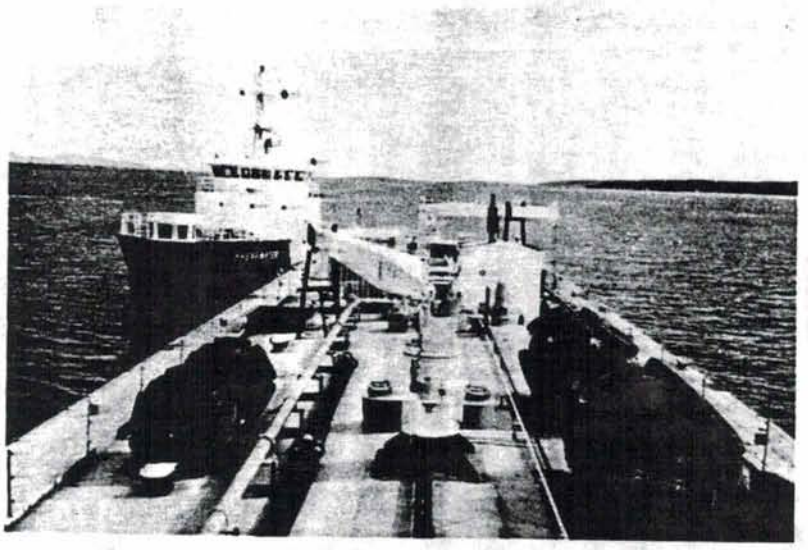
Another fishing vessel casualty made recent history off the Washington coast.

A Japanese trawler, the ***Tenu Maru*** was fishing legally in Canadian waters off southern Vancouver Island on a foggy summer day. When she was rammed and sunk by a Chinese flagged freighter, bunker C oil seeped out of one of the ruptured tanks and drifted into American waters and onto the Coast of Washington.

The Canadians responded with a fifty-foot oil recovery vessel (ORV) from Vancouver, and Clean Sound Cooperative, from Puget Sound, responded with three seventy three-foot ORVs. Management of recovery operations was taken over by the Coast Guard as soon as the luckless Japanese fishing company ran out of insurance. It is not really known how much oil was discharged or how much made it into US waters and onto Washington's beaches (one estimate is less than 3,000 gallons released), but the total bill was approximately $10.9 million; $5.5 million was for the government response, and $5.4 million for "damage to natural resources," all paid out of the National Response Fund.

Based on a 3,000-gallon spill, not recovered oil, but oil released from the ship, the response and "mitigation" costs amount to more than $3,600 a gallon.

In addition, the two ship owners paid $1 million in legal fees.



Clean Sound's *Shearwater* alongside a Clean Sound barge to offload recovered oil.

At another recent bunkering spill, the *NOSAC 4*, in Tacoma, an estimated 5,000 gallons of oil was spilled, contained and recovered. The clean-up and damage costs were about $2.1 million, perhaps 4 to 6 times as expensive as the same clean up would have been 10 years ago.

The greatest potential liability, under the modern doctrine of unlimited liability, lies in the **Natural Resource Damage Assessment** (NRDA).

The concept of assessing the changes to the environment, caused by man-made or natural activities, is not new and has been practiced by natural scientists for nearly a century. The idea of compensating the public for damages to the environment is a relatively new addition to the legal, scientific, emotional and financial complex of US law.

The **Comprehensive Environmental Response, Compensation, and Liability Act** (CERCLA), the **Clean Water Act** (CWA) and OPA90 have clearly defined the direction these efforts have taken, and have greatly increased the costs associated with an oil spill.

The 1986 ***Apex/Houston*** oil spill off the central coast of California was reported to have cost $80,000 for the clean-up response. None of the oil from the ***Apex/Houston*** spill damaged the beach, but "natural resource damages" were settled in 1994 for $6.4 million, plus $1 million in legal fees.

Even Little Guys

Even operators of small pleasure boats in inland waters have been hit with major fines and response costs when their boats have sunk at the dock, releasing small amount of crankcase oil. Many small-boat marine insurance policies now include "fuel and other spill liability" coverage, subject to the usual deduction which run from 1 percent to 3 percent of the hull insurance value.

Pleasure boat owners have also kept many a marina and boat yard active checking fill and vent systems, to lessen the chances of the fueling burps that spill an expensive half a cup of diesel oil into the pristine marina. Some small-boat owners have gone to the expense of segregating bilges so that clean stern-tube and rudder stuffing-box leakage is separated from oily water that may accumulate beneath machinery, long a practice on commercial boats.

Marine supply stores all sell a wide variety of sorbent materials, including pads and tubular socks, for use in bilges to capture the oil that drips out of marine engines.

All fueling docks sell sorbent pads and urge boaters to use them around fills and vents when taking on fuel.

Fuel dealers have also been saddled with OPA90 burdens, which includes colored and clear taxed/non taxed fuels.

Commercial vessels use "untaxed" high-sulfur, diesel dyed red, whereas

pleasure boaters must buy non-dyed, low-sulfur diesel, taxed at 24.4 cents a gallon.

Pleasure boaters in some parts of the country are having difficulty finding fuel docks willing to set up separate delivery systems for pleasure and commercial craft.

Back To Business

Commercial ship operators who have carried pollution insurance for years, must now also have approved **Certificates of Financial Responsibility** (COFR), or proof of adequate insurance, filed with the Coast Guard, as well, and every tank vessel carries small spill-response kits to handle minor spills that may occur during making/breaking hose connections or other minor accidents.

All commercial vessels over 300 gross tons, including fishing vessels, must have written procedures for fueling or bunkering, and they must notify the Coast Guard 24 hours in advance of fueling. In the State of Washington, they must also notify the Office of Marine Safety.

All vessels over 300 gross tons that sail in the waters of the Sate of Washington, except the Columbia River, must have an Oil Spill Contingency Plan filed with, and approved by, the Washington State Office of Marine Safety.

Tank vessels that carry oil in bulk must have contingency plans filed with, and approved by, the US Coast Guard as well.

The Coast Guard does not monitor fuel transfers on a routine basis, but Roger Mowery, past Puget Sound Captain of the Port, noted that after 44 refueling spills in the fishing industry in 1993, he sent a bunkering surveillance team out and "there weren't any spills when the Coast Guard was there watching."

When all else fails, and there is a spill, the law is clear that the spill must be reported and there must be a response. The contingency plan must, among the many requirements, specify who and what oil-spill response contractors are under contract and available to handle a worst-case spill scenario.

Who Responds?

In the State of Washington there are three primary response contractors. Each serves distinct segments of the marine industry. Other less visible and less capitalized clean-up contractors handle small spills, and specialize in beach clean-up or decontamination after a spill response.

The chain of command and the interconnection between all of the primary and secondary contractors are basically through the Coast Guard's Captain of the Port who is the designated "Federal On Scene Coordinator." In the event of a major casualty, say equal to the ***Exxon Valdez*** spill, every resource in this area would be put to work and equipment and supplies brought in from other regions and the US Navy as well.

The first several hours of the response are the most critical. Contingency plans, by law, call for a two-hour mobilization and deployment of booms and skimmers, and a maximum of 12 hours anywhere within the jurisdictional region.

Who are the players?

The Marine Spill Response Corporation (MSRC) was founded by the major oil companies to provide a national response operation for their own use. The funding organization for MSRC is the Marine Preservation Association (MPA), formed by individual oil companies that own or operate tank vessels. MPA assesses the members based on the amount of oil transported by each and disburses the money to MSRC, a non-profit corporation.

MSRC has grown from a concept conceived during the ***Exxon Valdez*** response, to a very large and expensive operation. So expensive that the member companies of MPA are "encouraging" MSRC to cut back on all frills and activities not directly related to the physical recovery of an oil spill. Programs such as response management, public relations and major research and development projects currently handled by the co-op will revert to the member companies which will handle them on their own.

Bob Aldag, President of MPA, assures that "MSRC is developing its own strategic plan to streamline and make their operation more efficient." He further states that "there will be no repositioning of equipment, nor reduction in capability."

MSRC has regional response headquarters in Everett, Washington, and Port Hueneme, California.

Patricia Patterson, spokesperson for MSRC in the NW Region, notes that the organization currently maintains the 208-foot, 4,000-barrel capacity ***Washington Responder*** and ***Oregon Responder*** in Everett, Washington, and Astoria, Oregon, respectively, as well as a fleet of smaller boom-deployment and general-purpose work boats in each port.

The two ***Responders*** have a crew of seven and eight oil-recovery specialists standing by at all times. MSRC also has positioned oil boom and supplies in Port Angeles, Bellingham, and Neah Bay, Washington, and Astoria, Oregon.

They also train and have contracts

Fast-Response boats deploy boom through an open ramp at the bow.

with some 360 vessel owners in the Sound and Gray's Harbor and have deployed them during major training exercises.

The Northwest Region also has 201 tugs under standby contracts and more than 2000 Hazwoper trained responders identified.

The MSRC regional headquarters in Port Hueneme is responsible for all of California and Hawaii. The region has three ***Responder***-class vessels, the ***California Responder*** in Port Hueneme, the ***Pacific Responder*** in Richmond, and the ***Hawaii Responder*** in Honolulu.

MSRC will not respond to a spill caused by a non member until ordered to do so by the Coast Guard, and under separate contract for each spill. MSRC will also not cross the boundary to British Columbia because they do not enjoy the same protection from liability they do in the US.

The Cleans...

Preceding MSRC by 20 years, and establishing the structure for oil-spill response organizations, are cooperatives established in the major port areas along the Pacific Coast.

Clean Seas in Carpinteria, California, founded in 1970 and celebrating its 25th anniversary this year, may be the oldest such organization on the coast. Darryle Waldron, general manager of the organization, reports to a seven-member executive committee formed from the oil-producing companies operating in the Santa Barbara Channel.

Clean Seas has three oil-spill response vessels, the ***Mister Clean, Mister Clean II*** and ***Mister Clean III***, all converted offshore supply vessels in the 140 to 180-foot range, eight 100-barrel response barges, and one 7,600-barrel barge. In addition, Clean Seas has twelve 40-foot vans placed at strategic spots in Ventura, Santa Barbara and San Luis Obispo counties, and 60,000 feet of oil-containment boom.

Waldron says Clean Seas has the capacity to recover 80,000 barrels of product per day.

Clean Coastal Waters, with headquarters in Long Beach, is a cooperative founded in 1972, and responds to spills, or potential spills from Point Dume, just north of Malibu, to the Mexican border.

Chris Gregory, president of CCW, reports to a 22-member board of directors representing the oil-producing and transporting industry. The organization has four major vessels, the 143-foot ***Clean Waters I***, two 100 footers, the ***Recovery I*** and ***Recovery II*** and the 72-foot ***CCW Spirit***, which are supported by a fleet of fast-response boats. To speed response, Clean Coastal Waters has positioned containment boom and

Burard Clean No. 9 is shown here being towed by two boom boats with an oil-diversion boom.

supplies at 20 sites along the coast, between Los Angeles and San Diego.

Clean Bay, established in San Francisco Bay in 1971, is a cooperative with 32 members and 66 associate members, responsible for waters extending from Fort Bragg to Cape San Martin, and eastward to San Francisco Bay, San Pablo Bay and Suisun Bay to Antioch.

The co-op maintains two major oil-spill response ships, the 140-foot ***Clean Bay I*** in Richmond, and the 166-foot ***Clean Bay II*** in San Francisco, as well as a fleet of smaller boom boats, fast-response boats and general work boats.

Included in Clean Bay's array of equipment are 14 skimmers which can be delivered by truck for fast response, a 1,000-barrel barge, 10 miles of boom, 15,000 gallons of dispersant and a dispersant spraying DC4. The DC4 is also equipped with sophisticated electronic gear that allows it not only to track the path of a moving oil spill, but also the thickness of the oil.

Stephen Ricks is the president of Clean Bay.

The Humboldt Bay Response Corporation (HBRC) was founded in 1973 to respond to oil and other spills at terminals in Eureka, Arcata, Samoa, Fields Landing and other towns bordering on the bay. The corporation has seven members who contract operations functions to a "dedicated responder," Pacific Affiliates Environmental Engineering, Inc. (PAEE).

HBRC maintains a fleet of small response vessels and skimmers, as well as support equipment owned by the co-op or by PAEE.

The Coos Bay Response Cooperative, formed in August of last year to comply with Oregon State law, has 12 members and a board of directors headed by Richard H. Lauer, of Sause Bros. Ocean Towing. The co-op draws on equipment owned by the members, as well as that purchased to meet state regulations.

Fire Training Too

Clean Rivers, founded in 1971, and the Maritime Fire and Safety Association, founded in 1983, share response equipment and responsibilities on the Columbia River, from the I-205 bridge to three miles offshore of the Columbia bar.

Mark Copeland, manager of Clean Rivers, in Portland, explained that the 22-member cooperative is made up of terminal managers along the river who maintain a fleet of high-speed boom boats and skimmers, including two Desmi "Terminator" recovery boats equipped with a screw pump for highly viscous

liquids, such as bunker C.

The Maritime Fire and Safety Association (MFSA), founded in 1983, following a fire aboard the grain ship ***Protector Alpha***, is a cooperative made up of 27 terminal operators who also operate vessels. MFSA and Clean Rivers jointly own the response equipment described in the previous paragraph, and cooperate in their responses to spills and other incidents.

. . . picking up the oil is the easy part, . . . recovered oil is the hard part.

MFSA maintains training classes for fire fighters and other emergency response personnel, and has separate fire and communications equipment.

Clean Sound Cooperative, Inc. is one of the three oldest oil spill response cooperatives in the country. It was founded in 1971 as the Washington State Oil *Spill* Cooperative, but the concept of cooperating in the spilling of oil soon came into disfavor and the more popular sounding Clean designator prevailed.

Clean Sound is one of the best funded, and hence best equipped near-shore oil spill co-ops in the nation. It operates as a corporation and owns 28 vessels, including 7 major oil spill recovery vessels and smaller skimmer boats, and fast-response boom boats. The corporation maintains the area's only stock of fire-proof boom to enable in-situ burning of spilled crude oil, and owns a 13,000 barrel and a 26,000 barrel tank barge.

Clean Sound was the first co-op to acknowledge that picking up the oil is the easy part, off-loading the skimmer boats and storing the recovered oil is the hard part.

Clean Sound has a permanent staff of 37 for first response, with additional trained operators on standby. Equipment-storage facilities are located in Seattle, Port Ludlow, Edmonds, Bellingham, Anacortes, Neah Bay and Tacoma.

Clean Sound is basically responsible to its members, all oil companies or tank vessel operators, and has mutual response arrangements with the State of Washington, Coast Guard and the British Columbia oil-spill-recovery complex.

Wismic?

The newest kid on the block is WSMC. Conceived as the Washington State Maritime Commission—Wismic was the product of Washington State's own regulations covering Contingency Plans and oil spill response for all vessels over 300 gross tons plying these waters not covered under the existing oil industry co-ops.

The new organization uses the same initials, but the Commission becomes Cooperative, and the body is no longer a state Commission with Commissioners appointed by the Governor, but a non-profit corporation, incorporated March 16, 1995, with its own board of directors.

The cooperative began operations at midnight on July 1, and the commission no longer exists. The sole purpose of the cooperative is to provide contingency-plan coverage for any vessel traveling the tidal waters of Washington, other than the Columbia River, to meet the requirements of Washington State regulations.

Wismic provides an emergency oil spill response system for those vessels that may be infrequent callers in Washington waters for a per-vessel, per-voyage fee. The fees range from approximately $80 for a 301 GRT non-tanker vessel carrying oil as fuel, to $178 for such vessels of 5,000 GRT and over. Tank vessels of 10,000 GRT or more pay the highest fees, $3,572 per trip.

The co-op has two employees, an executive director, Roger Mowery, and a Response Manager (Primary Standby Incident Commander), John Felton. Both are retired US Coast Guard Captains who have served as Captain of the Port and Chief of Vessel Inspection in Seattle and Puget Sound.

The Marine Exchange of Puget Sound handles the administrative duties of the co-op, including enrollment and assessment billings, and all reporting and vessel communications functions

Wismic will maintain its own response capabilities through Foss Environmental which has been the response contractor for the Commission since its

inception in 1991, and will continue with the co-op.

Policy is set by a board of directors consisting of seven members representing the various industry groups: towing, ferries, fishing, shipping.

In case of a casualty to an enrolled vessel, the Marine Exchange acts like a marine 911 emergency one stop call. They will respond for the stricken vessel with the myriad of calls to Federal and State agencies specified in the Contingency Plan, and will notify the co-op and the co-op's response contractor to initiate the oil spill response network.

The co-op will have command of the Response for the first 24 hours, during which time the spiller is required to provide his own Qualified Individual to manage the spill and pay the bills.

Burrard Clean

Burrard Clean was established as an oil-spill response cooperative made up of those operating oil ships and terminals in Vancouver, BC, but has since become a private corporation and expanded responsibilities to take in the entire British Columbia coast, a sizeable chunk of salt water real estate.

Flagship of the organizations response fleet is the 75-foot ***Burrard Clean Number 9***, located in Burrard Inlet. Satellite facilities equipped with response vessels and equipment are situated at twenty strategic locations, between Roberts Bank and Prince Rupert. The equipment includes 40 skimmers, a 6,000-barrel and a 4,000-barrel barge, work boats, boom and boom-deployment vessels.

In addition, Burrard Clean can call on the operators of about 75 vessels of opportunity whose operators have been trained in oil-spill response.

There is also a Fishermen's Oil Spill Emergency Team with a fleet of 125 fishing vessels and their crews that have been equipped and trained to respond to a spill, according to Colin Hendry, Burrard Clean's operations manager.

Complacency

Prevention, preparation, response and restoration are costly. When they get too costly, and there seem to be no tangible benefits, industry grows complacent and lax. It is difficult to keep in a state of readiness when nothing happens. The industry has been through the cycle before from the high level of activities of the 70s, with the formation of co-ops and the purchase of equipment, through the complacency of the 80s, ending with the great financial feeding frenzy in Prince William Sound in 1989.

Right now, it would seem that the territorial waters of the US are reasonably well protected from the ravages of an oil spill, at reasonable costs to the citizens.

One must remember, however, that whether a disaster is "natural" like an earthquake that finally knocks down the ultimate earthquake-proof buildings, bridges and highways, or a man-made disaster like a giant oil spill, serious changes and damage will be done to the environment and no response to that disaster can ever be perfect.

Although the environment always manages to heal itself, flora, fauna and fish do grow back, the damage to people's emotions and the political structure linger much longer, and, ultimately, cost a whole lot more. ■

THE TOOLS

A marine oil spill response starts with the deployment of many small boats called Oil Spill Response Vessels (OSRV). The first on site are the **Fast-Response Vessels,** loaded with **Oil-Containment Boom.** The boom is set around the spill, or in the spills track, to contain or deflect the spreading oil.

Oil Recovery Vessels (ORV) and skimmer boats specially designed and outfitted to pick up an oil spill and temporarily store and/or transport the recovered oil to the to the collection site, are the next on scene.

Vacuum trucks, dirty-oil barges or other portable containers are assembled to off load the ORVs and skimmer boats.

Shoreline and beach clean-up crews use **Sorbents**, synthetic pads and tubes that will absorb oil, but not water.

Fast Response Vessels

Fast-Response vessels are generally 28 to 40 feet in length, powered by either outboard engines or inboard diesels, and built with a large foredeck and bow opening ramp. They carry 1000 to 2000 feet of lightweight oil-containment boom and may have auxiliary hydraulic power systems, portable skimmers and limited storage for recovered oil.

Some are kept on trailers, ready to be towed to the site, while others are kept in the water at strategic sites, such as near oil refineries or major ports.

Containment Booms

Oil spill response booms are generally constructed of PVC or Urethane coated synthetic material, with a round buoyancy chamber and a skirt ballasted to hang down beneath the chamber to contain the oil and debris on the surface. Sizes vary from chambers four inches in diameter with a six-inch skirt, to 24-inch chambers with a 40-inch skirt.

Smaller booms have solid foam flotation, whereas larger booms have air-filled flotation chambers. Prices vary from approximately $6 per foot, to more than $150 per foot, for heavy duty offshore inflatable boom.

Specialized oil-containment booms include those for semi-permanent harbor installations made from heavy conveyer belting with solid flotation and lead or chain ballast, fireproof booms to be used during in-situ burning of a fresh oil spill, and sorbent booms used to clean up light oil spills and sheen. Most lighter "response" booms are discarded after use because the cost of cleaning them is more expensive than replacing and repairing them. Heavier and more expensive booms are steam cleaned with biodegradable cleansers and the inevitable sea damage repaired.

Skimmer Boats

ORVs are fitted with various types of recovery apparatus, including weirs, oleophilic disks, filtering belts, and submersion belts.

When an oil-recovery weir is used, surface water and oil flow over an edge into a receiver, from which they are all pumped into the vessel's storage tank. Weirs are generally free floating and attached to the skimmer vessel with hoses. They do not handle debris and are effective on spills of very light oil like diesel. They work best when they are stationery in calm water.

Oleophilic discs, ropes or mops pass into the oil, the oil adheres to the surface, and the disk or rope is rotated back out of the water, where the oil is removed by scraping or squeezing. Oleophilic or surface-adherence skimmers are effective in medium oils, but do not recover debris unless particles are small enough to be held to the collector by the oil. Discs and mops are most effective in closed basins, harbors or shallow shore side applications, where the equipment remains stationary and the oil is brought to it.

Porous filtering conveyor belts (Filterbelt) strain or filter the oil and floating debris off the water and convey the recovered product upwards into the vessel, where the oil and debris are removed by scraping and squeezing.

The water, which is carrying the oil and debris, is drawn through the belt by a powerful flow-inducing pump, which makes the Filterbelt very effective in stationary or advancing modes of operation. It is the most popular system in Puget Sound because of its versatility and effectiveness in handling heavy oil in debris-filled waters.

Submersion-belt skimmers (Dynamic Inclined Plane) use a downward and backward moving solid conveyer belt to depress or submerge the surface oil, allowing it to collect inside the vessel. The oil is pumped out of the collection well into the ORV's storage tanks. The DIP is effective only when advancing over the oil and is used on some of the larger ORVs in Puget Sound.

The design, construction and operation of ORVs are tightly regulated by the USCG.

HAZWOPER

Once oil is spilled on the water, it is considered by law, to be a hazardous material, and subject to the regulations for handling, transporting and disposal of such materials. All operators of ORVs must have 40 hours of Hazardous Waste Operations Emergency Response (HAZWOPER) training, as well as the appropriate USCG licenses for the size and rating of the vessel they are operating.

Vacuum trucks used by tank cleaners and other clean-up contractors are most often used to unload the recovered-oil tanks on ORVs because the heavy oils tend to become too thick and viscous to pump with ordinary pumps. The vacuum truck can safely and legally carry the "hazardous" oil to the disposal facility.

Sorbents shed water (hydrophobic) and absorb hydrocarbons (oleophilic), so they are selectively wetted by oil when in the presence of both. A typical 17-inch by 19-inch 3M pad can absorb about 3/8 of a gallon of diesel oil. Sorbents are most effective in mopping up small spills of light oil, sopping up small fueling spills, and protecting decks from oily shoes or splash or spray. Sorbents are fabricated as thin fluffy pads, or rolled into sausages and encased in netting to form floating booms or bilge socks.

Heavy oils are collected by snares made of loose strands of polypropylene resembling pom-poms. These are most effective in beach clean up and have been used effectively in surf.

Dirty sorbents are bagged in garbage sacks to keep them from oozing and disposed of by burning or landfill, depending on local regulations.

Decontamination

Cleaning the equipment, including gas-freeing storage tanks, and disposal of the tons of slop oil and debris as "hazardous materials" is a long and costly procedure, often costing more than the actual recovery of a black-oil spill. When it comes right down to it, everything at an oil spill seems to be "oleophilic," attracts and gets fouled with the black gooey stuff, and must be cleaned and decontaminated. Skimmers are often taken apart to steam clean and rinse off the heaviest of oils. ■

***D.W. "Bill" Lerch** recently retired as executive vice-president of MARCO Pollution Control. A graduate of Webb Institute of Naval Architecture, Lerch joined MARCO in 1959 as chief engineer, after working as senior naval architect and marine engineer with several US shipyards.*

MAVERICK
FOAM VEST SYSTEM

DERBYSHIRE FOAM SYSTEMS PRODUCTS
5100 BELFIELD AVENUE
PHILADELPHIA, PA. 19144-1788
PH:(215) 844-3200 FAX: (215) 849-8680

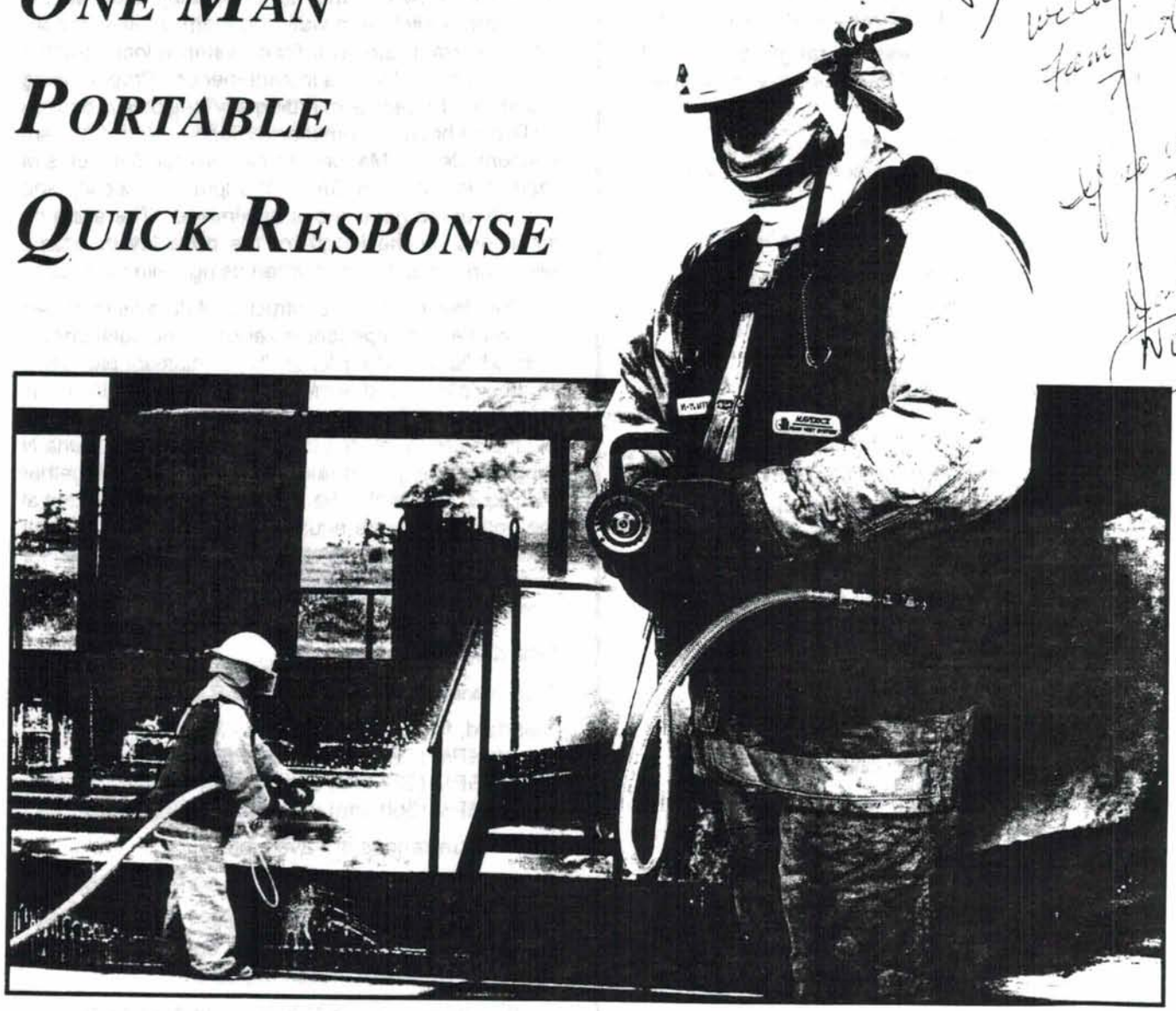
REVOLUTIONARY...
FOAM PROPORTIONING SYSTEM

UL LISTED

ONE MAN

PORTABLE

QUICK RESPONSE



MAVERICK FOAM

Features

- Compatible with Class A, Class B and Hazmat foam concentrates.
- Simple, one person, foam operation. Any water supply can now have foam capability. Ideal for hose reel stations.
- Fast set up time with one person. No eductor to install or foam pails to open.
- Maximum hose line mobility. No elevation or hose length restrictions.
- Maximum efficiency. The pressure loss of 30% or more associated with in line eductors is eliminated.
- Effective operating pressure range of 75 PSI (5.2 bars) to 125 PSI (8.6 bars) for use with all types of water sources.
- One person controls the foam system and application. The nozzle person knows how much foam remains at all times.
- Large 1½" (38 mm) fill cap for fast refilling.
- Available with brass or aluminum nozzle.
- Can be worn with breathing apparatus.

Materials of Construction

Outer Shell:	Flame retardant Nomex® fiber.
Strap Connectors:	High temperature plastic.
Internal Bladder:	Buna N rubber with nylon impregnation. The same material used in bladder tanks for fixed foam systems.
Hoses:	½" (12.5 mm) I.D. PVC with single braid reinforcement.
Fittings and Connectors:	Brass or Stainless Steel.
Discharge Valve:	Brass with nylon ball and seats.
Check Valve:	Brass with nylon ball and seats.
Nozzle:	Brass or Anodized Aluminum with rubber bumper and pistol grip.

* US Patent 5137094

Nomex® Dupont Reg. Trademark

Description

The Maverick™ Foam Vest System* provides unparalleled fire power in state-of-the-art portable foam fire fighting.

Designed to be worn as a vest and operated by one person, the Maverick™ puts instant foam operation into the hands of the fire fighters on the end of the hose line.

The Maverick™ contains up to 5 gallons (19 liters) of foam concentrate in the vest, and with the specially designed nozzle, any hose line is transformed into a foam line. A twist of the turn operating knob lets the fire fighter switch from water, to foam, whenever conditions warrant. Since the foam system is located at the nozzle, foam delivery is instantaneous. Proportioning is built into the vest, eliminating any long delays caused by filling a hose lay with foam solution. With 1% foam concentrate, the Maverick™ can provide 5 minutes of foam delivery at 95 GPM (360 lpm). Flexibility and mobility of the hose line is maximized. There are no limitations on the length of the hose lay or nozzle elevation, as is the case when using in-line eductors.

The Maverick™ is constructed of durable materials for long life and dependable service. The outer shell is Nomex® fabric, utilized for its' flame retardant properties. Strategically placed reinforcements are used in critical stress areas for toughness. The tubular internal foam bladders are fabricated from nylon reinforced Buna N rubber for strength, and all joints are vulcanized together for a liquid tight seal. The bladders are interconnected at the bottom to insure equal drainage and even weight distribution. Wide arm openings and four adjustable rear straps provide a comfortable fit without restricting movement.

Specifications

Proportioning available for Class A, B and Hazmat foams.

Standard, fixed flow ranges:
30 GPM (113 lpm) at 100 PSI (6.9 bar).
60 GPM (227 lpm) at 100 PSI (6.9 bar).
95 GPM (360 lpm) at 100 PSI (6.9 bar).

Special flow ranges are available.

Nozzle range: 85 feet (26 m) at 100 PSI (6.9 bar).

Nozzle Pattern: Infinitely variable between straight stream, power cone, and full fog, plus flush capability.

Weight: Empty - Approximately 7 Lbs. (3.2 kg)
Full - Approximately 51 Lbs. (23.2 kg.)

Operating Instructions

- Check that the foam discharge valve is in the closed position.
- Remove both 1½" fill caps.
- Fill vest with the same type concentrate as labeled on the pocket.
- Use the filling funnel and both fill openings to maintain an even level of foam concentrate on both sides of the vest.
- After filling, replace both caps. These caps are to remain closed during operation.
- Don the vest as you would put on a coat, one arm at a time. Secure the three fasteners on the front of the vest, and adjust the rear straps for desired fit.
- If wearing the vest over breathing apparatus, adjust the rear straps to the full open position before donning the vest.
- Attach nozzle to 1½" hose line. Establish a nozzle pressure of 75 psi. to 125 psi.
- Remove the cap from concentrate inlet connection, on the bottom of the nozzle grip. Release the discharge hose from the hose holder on the vest. Pull down on the outer ring of the quick disconnect and insert over the inlet connection on the nozzle grip. Push firmly and release the outer ring. Tug gently to insure proper fit.
- Establish a water flow by fully opening the ball shut-off valve on the nozzle. Open the foam discharge valve on side of vest. Foam solution will begin flowing at once.

To Secure:

- Close the concentrate discharge valve.
- Secure water flow.
- Remove quick connect from the vest valve.
- Fully open the nozzle ball shut-off and place the foam discharge hose end into the water stream for approximately 10 sec., to facilitate flushing.
- Secure water flow and reconnect foam discharge hose to the foam valve on vest.

Remove quick disconnect from the nozzle.

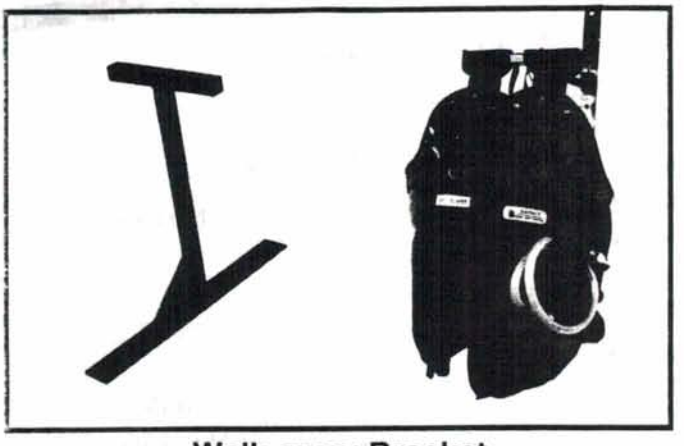
lote:

The nozzle may remain attached to the water hose at all times, as it is also a very effective water nozzle.

Maintenance Instructions

- Clean regularly with soap and water.
- Refill foam vest immediately after use.
- Before introducing foam to the nozzle, it may be necessary to adjust the nozzle to the flush position to remove any small objects.
- If nozzle becomes difficult to operate, install a nozzle repair kit as required.
- If concentrate stops flowing due to an orifice obstruction, remove the hose at both quick connects and place the female end into the water stream to clear the obstruction. Reassemble.
- Lack of foam solution may be caused by the following:
  1. Insufficient nozzle pressure.
  2. Nozzle ball shut-off handle not fully opened.
  3. Obstruction in the nozzle.
  4. Concentrate valve not fully opened.
  5. Concentrate orifice obstructed.
  6. Foam concentrate supply depleted.

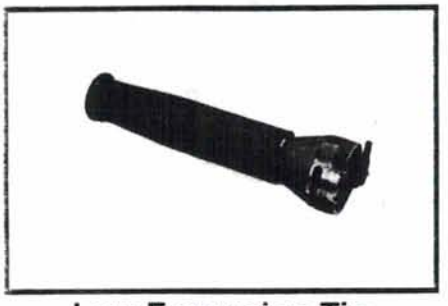
Optional Accessories



Walk-away Bracket

Walk-away Cover

Maverick Nozzle



Low Expansion Tip

Medium Expansion Tip

Carry Bag

Description	Part Number	Description	Part Number
Foam Vest for 1% AFFF @ 95 GPM	1233-8600-1	60 GPM Aluminum Nozzle	1233-8601-9
Foam Vest for 1% AFFF @ 60 GPM	1233-8600-2	30 GPM Aluminum Nozzle	1233-8603-9
Foam Vest for 1% AFFF @ 30 GPM	1233-8603-2	95 GPM Brass Nozzle	1233-8601-8
Foam Vest for 3% AFFF @ 95 GPM	1233-8603-6	60 GPM Brass Nozzle	1233-8602-0
Foam Vest for 3% AFFF @ 60 GPM	1233-8603-7	30 GPM Brass Nozzle	1233-8604-0
Foam Vest for 3% AFFF @ 30 GPM	1233-8603-8	Walk-Away Bracket	1233-8602-5
Foam Vest for 3% Polar Solvent AR-AFFF @ 95 GPM	1233-8600-3	Walk-Away Bracket Cover	1233-8602-6
Foam Vest for 3% Polar Solvent AR-AFFF @ 60 GPM	1233-8600-4	Carry Bag	1233-8602-4
Foam Vest for 3% Polar Solvent AR-AFFF @ 30 GPM	1233-8603-3	Low Expansion Tip Attachment	1233-8602-7
Foam Vest for Class A Foam @ 95 GPM	1233-8600-5	Medium Expansion Tip Attachment	1233-8602-8
Foam Vest for Class A Foam @ 60 GPM	1233-8600-6	30 GAL Stainless Steel Quick Fill Tank	1233-8602-9
Foam Vest for Class A Foam @ 30 GPM	1233-8603-4	**Maverick Foam Vest System Demo and Training Video available upon request.**	
95 GPM Aluminum Nozzle	1233-8601-7		

FOAM VEST SYSTEM VS THE EDUCTOR SYSTEM
COMPARISON CHART

FEATURES	FOAM VEST SYSTEM	EDUCTOR SYSTEM
PRESSURE LOSS	1 %	30% TO 40%
FLOW	95 GPM AT 100 PSI	78 GPM AT 100 PSI
RANGE/DISTANCE	90 FT AT 100 PSI	80 FT AT 100 PSI
HOSE LENGTH RESTRICTION	NONE	150FT MAX. NO CLIMBING OF LADDERS OR STAIRS
NOZZLE MATCH	SAME NOZZLE USED FOR ALL PERCENTAGES	MUST MATCH EDUCTOR TO NOZZLE
PROPORTIONING SETTINGS	THE VEST PROPORTIONS AUTOMATICALLY	EDUCTOR MUST BE ADJUSTED TO TYPE OF FOAM USED.
PERCENT ACCURACY	WITHIN 0.06% OF 1%	UNKNOWN, BUT UNRELIABLE
FOAM QUANTITY	USER KNOWS EXACTLY HOW MUCH FOAM HE HAS	USER MUST RELY ON SOMEONE ELSE
MANPOWER NEEDED	ONE (1) MAN	MINIMUM, 3 MEN
SET-UP TIME	APPROXIMATELY 15 SECONDS	2 TO 3 MINUTES, MINIMUM
FLOW RESPONSE TIME	HALF (1/2) SECOND	10 TO 15 SECONDS
TRAINING TIME	15 MINUTES	???
NOZZLE USE	WATER OR FOAM	WATER OR FOAM
INTERCHANGEABLE BETWEEN WATER AND FOAM	YES ALLOWS THE FIRE-FIGHTER TO CHANGE FROM WATER TO FOAM AND BACK TO WATER AS MANY TIMES AS HE PREFERS	NO
	U. L. LISTED ABS TYPE APPROVED	

5100 BELFIELD AVE. PHILADELPHIA, PA 19144-1788 (215) 844-3200 FAX (215) 849-8680

Jerry Loughren

Parts smart crane owners protect their investment

In times of knee-jerk litigation where the buck stops nowhere, the adage "protect your investment" encompasses a great deal more than buying insurance and providing adequate training. It also means purchasing reliable, quality parts for your cranes, from new wire rope to each tiny replacement valve.

Due to the high risks associated with crane applications, original equipment manufacturers (OEMs) make every effort to engineer safety into each aspect of a crane. That protection can only be safeguarded if manufacturers' design specifications are met for every component ever placed on their machines. When non-complying replacement parts are used instead, crane manufacturers can't assure the owner that the crane will perform as originally designed. In a position paper on replacement parts and authorized repairs and modifications, the Power Crane & Shovel Association (PCSA) outlines its stance on the use of manufacturer recommended replacement parts:

"Proper care, maintenance, servicing and repair of cranes by trained personnel is of prime importance in assuring the proper operation of the unit. It is essential that the recommendations of the crane manufacturer be followed whenever a crane is serviced. Use of manufacturer recommended replacement parts is vitally important to avoid compromising the crane's performance, reliability, warranty and certification."

Safety, compliance and liability

There are several reasons for avoiding non-recommended replacement parts. For example, non-OEM manufacturers may not meet all crane manufacturer specifications. Such parts could affect the performance and structural integrity of the machine, putting the safety of the crane operator, job site personnel and others at risk. For example, using unauthorized repair materials or procedures to fix a lattice boom, such as using lower grade steel when replacing lacings, jeopardizes the ability of that boom to hold a load.

In addition, OSHA regulations pertaining to employers in the construction industry state that the "employer shall comply with the manufacturer's specifications and limitations applicable to the operation of any and all cranes and derricks." The regulations further caution that "no modifications or additions which affect the capacity or safe operation of the equipment shall be made by the employer without the manufacturer's written approval." [29 CFR 1926.550(a)]. The use of non-complying replacement parts on a crane may therefore put the construction employer who uses that crane in violation of OSHA's safety standards. Remember that violation of OSHA standards can result in substantial fines and other penalties.

Yet another reason to stay away from non-recommended parts is to protect the product warranty on the crane. Cranes may carry such warranties to the owner of the unit, guaranteeing to repair any unit with a flaw in materials or workmanship during the warranty period. Use of non-complying replacement parts on a crane could void the crane manufacturer's warranty. Beware that while some non-OEM manufacturers may warranty their parts, they don't necessarily protect the user from other damage caused by their equipment.

Still, despite the risks incurred by using non-OEM replacement parts, lower costs or convenience are often cited as reasons to use them anyway. Sometimes a lack of communication between the crane owner and maintenance supervisor or purchasing agent contributes to the use of non-OEM parts. When comparing an OEM's parts price to a replacement-part manufacturer's price, make sure to take all factors into consideration. If a boom collapses or a load is lost, the 20, 30 or even 50 percent savings on any part becomes insignificant. When a non-OEM part is used, chances are the life expectancy of that assembly is greatly reduced. Also, remember that non-OEM parts are not always improved to include current manufacturer standards and updates.

In today's legal environment, end users that don't rely on the manufacturer for all their cranes' product support are certainly standing alone. Policies and recommendations concerning replacement parts, repairs, modifications and product warranties are formulated by each manufacturer, acting independently and exercising its own judgment. A dealer or other business should also exercise caution in the selection of replacement parts as being suitable on a particular unit. Dealers should seek assurance from their vendors that all parts are recommended or approved by the crane manufacturer, or comply with established requirements, specifications and quality standards. They may wish to obtain some type of certification to that effect from the vendor, as well as an indemnity/hold harmless agreement. Working together, the manufacturer and dealer will be better able to provide proper care, maintenance, servicing and repair of cranes so that all units are ready for proper operation.

Jerry Loughren is vice president sales for American Crane Corp., Wilmington, N.C.