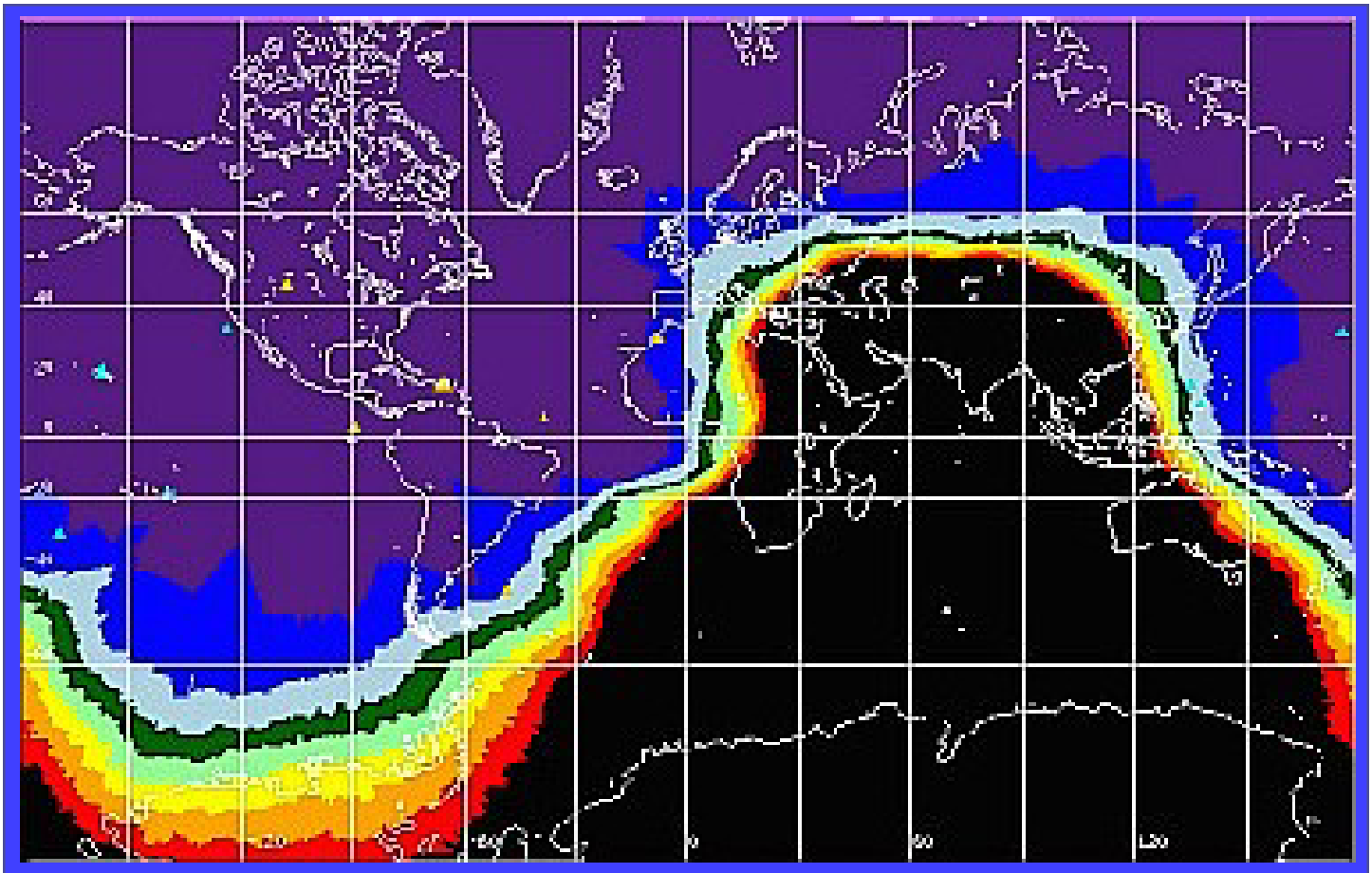
ON SCENE

The Journal of U. S. Coast Guard Search and Rescue



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Spring 2003 **COMDTPUB P16100.4**

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The Journal of U.S. Coast Guard Search and Rescue
Spring 2003

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Notice to librarians:
The last issue published was the summer 1999 edition.

Table of Contents

Front Cover: A computer-derived chart shows DASS coverage with two ground stations located in Hawaii and Puerto Rico - Story on Page 18.

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ISSN: 0093-2124

A Note from the Chief of Search and Rescue...

Dear ON SCENE Readers,

Greetings shipmates! Have you seen the movie "Castaway" with Tom Hanks, who plays a FedEx Quality Assurance trouble-shooter? If so, do you remember the part in the beginning of the movie when he's in Russia and opens a package that he had sent to himself from the states? That package contained a digital clock displaying the number of days, hours, minutes and seconds that it had taken it to arrive to its final destination; he did this to provide the employees a critical visual reminder that ***time was their taskmaster*** – that every second was critical in their endeavor to deliver their packages on time; because that was their mission – that is what their customers expected. Using this analogy, the same holds true for Search and Rescue – that when performing this vital mission, we have to constantly be aware of the passage of time…because every second counts if someone is treading water; every second counts when someone is battling the effects of hypothermia; every second counts when a boat is on fire or sinking; and every second counts when a disabled boat is beset by heavy weather.

Everyone is familiar with STAN team inspections – the Coast Guard uses them to ensure compliance with expected standards. What STAN teams don't check for though, is how our entire system of small boats, cutters, watchstanders and air resources work together in SAR to ensure an overall timely response to a distress call. That's where you come in.

If you're a Group Commander, CO, OinC, watchstander or part of the crew – check and evaluate your part in the system. For instance, given a "Mayday" call at 0200, does the TCOW fill out the entire Initial SAR Check Sheet before waking up the Duty Officer, or does that happen at the first instance of the distress so that the "SAR alarm" can be activated to move resources? How about boat and air crews? How long does it take them to get underway or airborne once they're notified of a distress incident? The only way to know the answer to these questions is to check – at each step in the SAR system — then to fine-tune your internal processes in providing a coordinated, seamless and timely response.

We have a 30-minute standard to move a SRU – but is that good enough? If your house is on fire and you call 911, would you consider it a satisfactory response for the fire truck to pull out of the firehouse 30 minutes later? Of course you wouldn't. When a potential victim makes that "Mayday" call at 0200, they don't know that the TCOW has to wake the duty officer, who has to remotely wake the coxswain, who wakes the rest of the boat crew, who has to put on protective gear, check out weapons and light off the 47' MLB. That's why we must be miserly with the passage of time…when it's gone, we can't get it back – nor can those in distress.

Captain Steve Sawyer, USCG
Chief, Office of Search and Rescue

From the Director of Operations Policy

RADM Harvey E. Johnson

Despite the shift in our nation's priorities, our service's commitment to providing world-class search and rescue services remains as strong as ever. The U. S. Coast Guard is known and respected around the world for assisting mariners in distress under the most difficult circumstances, often on the darkest and stormiest of nights. Our boats, cutters and aircraft have become icons of deliverance from the perils of the sea. This is a hard-won reputation, and one of which I, like all the members of the Coast Guard, am very proud.

As we stand on the threshold of a new millennium and a new start for the Coast Guard in the Department of Homeland Security (DHS), it is only appropriate that we take the time to develop and refine our strategies. Among the strategies we'll need is one for how we will save the thousands of people that will unquestionably be in dire need of our services during the coming century. In today's Coast Guard, we are indeed very proud of our record. One of our primary goals today remains the safety of life at sea.

The recent legislation creating the Department of Homeland Security is a significant milestone in the history of the United States Coast Guard. Through it, the Coast Guard will take the lead federal agency role for Maritime Homeland Security (MHLS). The primary objectives the Commandant has set for our transition are to build our MHLS capabilities and sustain our expertise in our non-MHLS missions. By doing these two things effectively and simultaneously we will be the world's best Coast Guard.

Unquestionably the most important "non-MHLS" mission we undertake every day is Search and Rescue. We must continue to hone the edge on our SAR skills. Search and Rescue must remain that shining star that stands beside Homeland Security as we transition to our new home in DHS.

Of course, now and in the future, the human factor is at the heart and soul of Search and Rescue. The best technology in the world can only go so far to save a life. We need today, and always, the right number of SAR professionals, who have the right experience, the right knowledge, the right training, the right mental attitude, and a healthy dose of "true grit." We need the boat crews, air crews, and SAR experts who will go that extra mile, and use all the mental and physical resources at their command to save that other person's life and to be the world's best Coast Guard.

The question is: will we be able to maintain our focus on this critical mission amid the challenges that the departmental transition and the 21st century will bring to Search and Rescue? I believe we will, and our heritage stands testimony to that belief; success is culturally ingrained in our nature. Many of us joined the Coast Guard *to be a "lifesaver,"* and to take part in this noble profession that's right up there with the most honorable and selfless endeavors attainable. It takes more than simple desire, however, to make it happen. We all have to do our part to help plan for the future of Search and Rescue so that now, and in generations to come, we will have the skills, the knowledge, and the tools to meet the demands of the SAR mission.

Semper Paratus.

Rear Admiral Harvery E. Johnson
Director of Operations Policy

Letters to the Editor

To the Editor:

I would like to send my thanks and gratitude to the helo crew of 6558 from Air Station Savannah, Georgia, from the dates on or around Oct-Nov 98 while attached to the *USCGC Vigorous.* Helo 6558 and crew were attached to the *CGC Vigorous* while they were on a JIATF patrol.

The boat and helo were participating in a general quarters exercise, along with our gun crew preparing to do a live gunnery exercise. Helo 6558 had launched and was doing a routine patrol while the gun crew was readying the .50 CAL machine guns, and the 25mm cannon for firing. While I was firing the .50 CAL machine gun, it misfired and fired a shell in the ejection port, consequently spraying shrapnel into my legs and upper thigh. Due to the severity of my injuries, I was to be MEDEVAC'd for removal of all pieces. Helo 6558 along with the ship's corpsman, gunnersmate, and numerous crew members were quick to act, resulting in saving my life. The biggest piece of shrapnel missed my femoral artery by only 1/4". Now Rescue 6558, along with the crew were wonderful in quickly acting and getting me flown to the Grand Cayman Islands for further treatment. While on the flight the crew was very attentive in making sure I did not lose conciousness, and doing everything in their power to make me comfortable on a two hour flight. I would also like to send my gratitude to the HU-25 Falcon crew that escorted Rescue 6558 into the Caymans. I once again would like to send my greatest appreciation to these two crews for their great efforts in saving one of their shipmates. Thank you all.

BM3 Michael Sampere
CG Station Portage, MI

Dear ON SCENE Editor:

Recently a copy of the Summer 1999 issue of ON SCENE came across my desk and I read with great intereste the article "When Distress Becomes an Expensive Game" and the Special Section on *S/V Morning Dew*.

As an agent with the Philadelphia Field Office of the Federal Communications Commission's Enforcement Bureau, a very important part of my work involves providing support to the U.S. Coast Guard Groups Atlantic City and Philadelphia in their SAR mission, particularly with regard to interference resolution and hoax activity occurring on marine VHF channels.

The Philadelphia Office has recently assisted in several hoax cases, all of which have involved minor children in the age groups 10-13 years of age. Typically, the only transmission made is "MAYDAY, Coast Guard come in.", exactly as that logged by Group Charleston at 0217, the 29th of December, 1997 in the *S/V Morning Dew* incident. In each case, the combined efforts of the Coast Guard and the FCC proved successful and the culprits were apprehended.

Publicity regarding the incidents has helped the effort to curb such activity, but it has not eliminated it. The action taken by the State of Alaska in the case of the juveniles invoved in the 121.5 EPIRB incident would appear to have a more dramatic effect in reducing these types of "games" and should be something that the agencies involved should pursue more vigorously, keeping in mind that any sanction imposed by the FCC will be pursued. Furthermore, if the state or local jurisdiction is unwilling to prosecute the juvenile, then a responsible parent or guardian should be held accountable.

Placing a cost of $23,925.00 on the prosecution of the SAR case involving the 121.5 EPIRB in Alaska seems to be an impressive figure for such a rather straightforward response. Think of what that cost could have escalated to had the aircraft and crew been lost as a result of the incident.

Until the punishment for these *very expensive games* begins to reflect more suitably upon the potentially disastrous effects of them, they will continue to provide many more hours of "hide and seek" for the Coast Guard SAR crews and FCC agents.

Trenton D. Williams
Compliance Specialist Agent
Philadelphia Field Office

SAR Leadership: *A Matter of Focus*

By LCDR Jim Olive

I'm sure we all remember a few years back, when then-Commandant Admiral Kramek declared our service the world's "Premier Maritime Service." I think in the big picture that is just as true today as it was then. Unfortunately, however, competing demands have diverted the emphasis of our preeminence away from one of our most important missions: Maritime Search and Rescue. As we scramble to improve our skills in securing our homeland and protecting the 95,000 miles of coastline for which we are responsible our relative position among the great SAR entities of the world is threatened. That need not be the case. Early and decisive action on the part of the leadership of the SAR community (at every level) can reverse this trend. Please read on for a few thoughts and ideas on ways to accomplish this. These thoughts are a compilation of my own and those shared with me by others, most of whom are far greater thinkers than myself.

In January of '99, as part of the final action from the MORNING DEW Case Study, we witnessed the introduction of the Operations Center Standardization Team (Opstan). In it's infancy this valuable assessment tool was intended and directed in a manner to get a snapshot of where our Command Centers stood at each level (Group/Activity, District, and Area) in terms of SAR proficiency. As the team continues to evolve and the quality of their product improves with each visit, it is time for Command Center leadership to fully embrace these visits and strive to incorporate their feedback in the day-to-day operation of their center. While most units do employ recommendations from the team, it is still far too common for the teams to be made to feel as though they are "intruding". For some units it seems as though they cannot wait until the team departs so they can go back to doing things the way they were done before the visit. Most important to the success of this assessment tool is that each level of the chain of SAR leadership holds people accountable for their shortcomings. Obviously that doesn't necessarily mean firing supervisors on the spot, but employing one or more of the myriad leadership tools available to make sure folks know it's taken seriously. And it DOES NEED to be taken seriously. Lives depend on it. Requiring weaker performers to develop and present training to peers is an outstanding option. Seek a tool that will be most effective for the member in question. Accountability is very recipient specific. From my own experience, when I took members to mast, I sought the punishment that not only fit the crime, but would impact the member. For example, taking pay away from a member whose spouse is a successful investment banker probably isn't very effective, but take away her liberty, and therefore her opportunity to spend her money, and you may well get her attention.

A common response to poor Opstan performance is "Well the person would have still been in my search area, I just got gigged because I didn't drift the corner points right". That's simply not the point! What is the point? The point is that Search Planners need to be proficient with the tools they've been given (C2PC). And how do they stay proficient with a tool that they rarely NEED to use? Practice, practice, practice! Planners should use it even when they don't absolutely need to. They should use it to drill and solve practice scenarios. They should use it when the watch is slow and they find themselves watching Jerry Springer reruns at 0230.

Perhaps the greatest challenge of SAR Supervisors, regardless of their rank, involves bringing those old, tired, complacent watchstanders back from the dark side and motivating them to embrace new technology and strive for continuous improvement. We all know them: they've been doing SAR forever, and there are just no new tricks worthy of their time to learn. Each of them needs to be motivated in a manner that works for them, there's no single cure. Some may never be salvaged. When it becomes obvious an individual is beyond saving, take the next step. It's hard, and often comes with repercussions for the other watch standers in the section, but it HAS TO BE DONE. If there's any chance of turning them around and refocusing them, put in the effort and do whatever it takes. Give their supervisors the time in their schedules and make sure their priorities are aligned so that they can demonstrate, through actions, just how important the SAR role is.

Many other communities, both in and out of our service, have made use of a tiered approach (Apprentice/Journeyman/Master) to excellence. Perhaps it's time to incorporate this approach into the way we populate the billets within the SAR community. A career track for SAR planners would not only provide the people we need to fill the front line planner billets, but would give us a pool of "Journeymen" to fill junior policy/oversight billets at districts and headquarters. The "Master" pool of personnel would shore up the resumes of our upper echelon: SAR School instructors, Opstan members, Chiefs of District and Headquarters Offices of Search and Rescue, and the like. Of course, success for this approach would require buy-in from the assignment system.

Some of these suggestions can be actioned immediately at the deckplates level, while others will require long-term planning to incorporate. The bottom line, however, is that we all need to act now to deliver one of Admiral Collin's top priorities: sustaining non-homeland security mission (such as SAR) performance while advancing our capabilities in the MHLS arena. Just one more step toward the goal of being "the world's best Coast Guard… Ready today… Preparing for tomorrow".

LCDR Olive** is Acting Chief of the Policy Division in the Office of Search and Rescue, USCG Headquarters. **o/s

Rescue Coordination Center Benchmarking Study

By CAPT Dee Norton

The Office of Search and Rescue (G-OPR) working with the Office of Training and Performance Consulting (G-WTT) chartered a benchmarking study of foreign Rescue Coordination Centers (RCCs) this past September. The purpose of this study was to compare and assess methods and policies of foreign RCCs to similar methods and policies currently in effect in U.S. RCCs.

Benchmarking is "an ongoing systematic process for measuring and comparing the work processes of one organization to those of another for the purpose of identifying best practices that can lead to improvements in operations and customer service"

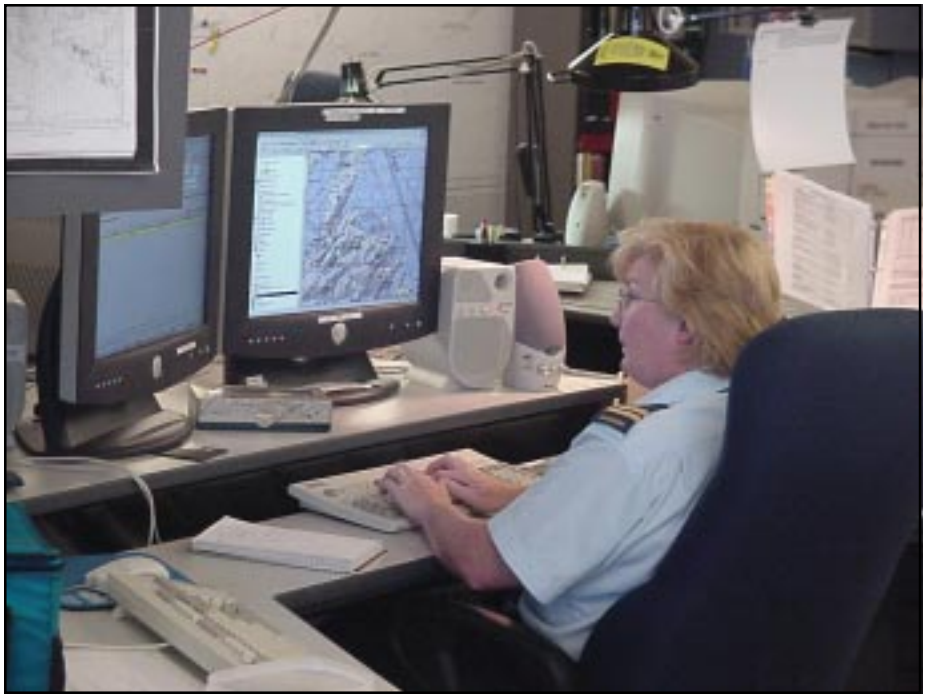
The goal of the study was to improve U.S. SAR controllers' SAR planning, professionalism, and competence. This study aimed to incorporate the best practices abroad into the U.S. SAR systems as much as practicable.

The eight areas of emphasis of this study were:

1. General description of RCC spaces and their suitability
2. Watchstander recruiting, selection, & retention
3. Training programs & training tools used
4. Qualification/re-certification process
5. SAR Planning Competence
6. Plans of Operation for relevant SAR scenarios
7. Assigned tasks & workload expectations
8. Measures of Effectiveness regarding SAR programs

The data was collected in three ways:

1. Pre-visit surveys to each of the four foreign RCCs that would later be visited by the Benchmarking Team.
2. Data-collection protocols, or templates, made by the Benchmarking Team that were filled out with information gathered during the site visits.



Watch Position at JRCC Halifax, Nova Scotia, Canada
Photo by LCDR Kevin Jones, USCG

3. Surveys mailed to additional countries that were not visited. These surveys included the type of information collected in both the pre-visit surveys and the protocols used to assess the visited RCCs.

The study team is now in the process of collating and cataloguing responses under the eight areas of emphasis. Numerical data collected is being analyzed using data analysis software. Best practices will be identified. From there, we'll analyze and rate each best practice based on its practicality within the U.S. RCC structure, and its potential return on investment. The result will be a list of well-defined recommendations that can be incorporated in the U.S. RCCs to improve SAR professionalism and competency.

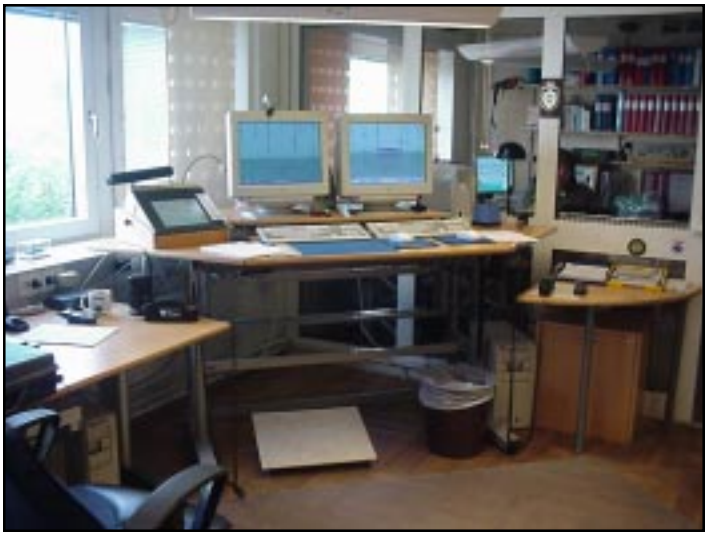
The final phase will include analysis to verify steps taken and information collected. The Study Team will brief appropriate stakeholders and create the final report that provides justification for the recommended solutions.

The participating countries that assisted in the Benchmarking efforts will also receive the data from the study. All expressed interest in the U.S. efforts and are looking forward to sharing of information in order that they can also improve their SAR training and professionalism.

CAPT Norton *is Chief of Enlisted Personnel Management at the USCG Personnel Command. She is the former Chief of the Policy Division,Office of Search and Rescue and Senior Study Team Member.* ***o/s***

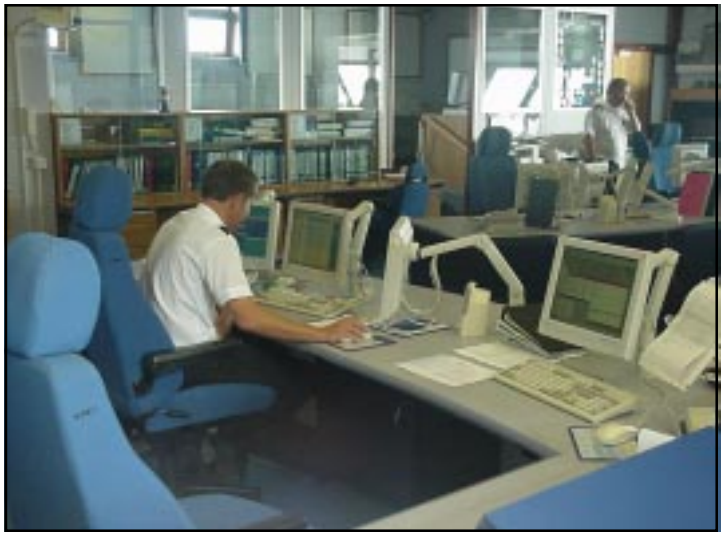
SAR School Classroom at Canada's Coast Guard College

Photo by LCDR Kevin Jones, USCG



Watch Position at RCC Goteborg, Sweden

Photo by LCDR Kevin Jones



Watch Position at RCC Falmouth, England

Photo by LCDR Kevin Jones, USCG

Strong Glue for Water Rescues

The United States Coast Guard and Maritime Search and Rescue

By Richard R. Schaefer

For most people "U. S. Coast Guard" is synonymous with "search and rescue." This recognition often includes a vision of boats and helicopters racing over storm tossed seas to narrowly rescue a hapless mariner facing certain death if not for these brave rescuers. The common belief is if you get in trouble on the water, no matter where, no matter when, the Coast Guard will be there to save you. This popular vision is the result of over 200 years of outstanding service to this nation and mariners worldwide.

It would surprise many SAR professionals and an even greater segment of the general populace that this vision is limited. Although the U.S. Coast Guard does a phenomenal job of providing SAR services, the overall response to SAR incidents in the United States is more complex and resource demanding than what a single agency alone can provide. This is equally true whether you operate within the land, aeronautical or maritime SAR realms. The question is then, what is the U.S. Coast Guard's secret of success in the face of this overwhelming demand?

For the U.S. Coast Guard this success is firmly rooted in two key factors: first, how the Coast Guard's internal organization facilitates SAR response, and second, the Coast Guard's involvement in the SAR system.

Internal Organization

The U.S. Coast Guard is uniquely organized to enable the most rapid response possible to multiple incidents in widely dispersed locations. This is achieved by regionally located rescue coordination centers, one at each of the two area and nine district offices (two district offices are co-located with area offices) and subordinate section, activities and group offices, each with its own SAR planning and coordination center. Operational units, which are dispatched to carry out SAR missions work directly for the area, district or subordinate SAR planning command. SAR planners at Coast Guard rescue coordination centers have the entire array of platforms, cutters, boats, fixed-wing aircraft and helicopters, all directly (or via subordinate commands) under their operational control. At the section, activities and group level the majority of resources needed for SAR responses within their purview are under their direct control. This immediate control enables both the selection of the most suitable resource and a rapid response. The time criticality of distress incidents, lives and property in danger, demands this rapid response. Direct control avoids barriers found in some organizations (and some other nations) created by SAR coordinators being organizationally separate from the commands with operational control of SAR platforms. Getting "permission" to use resources can be time consuming and worse yet, response delaying.

The SAR System

The second key factor, involvement in the SAR system, is equally important in ensuring successful response to SAR incidents. Just what is the SAR system? The SAR system can be thought of in three levels, each level filling a different need within a coordinated SAR response.

First is the international level, which provides a global framework for SAR response. This framework includes a number of treaties, agreements and organizations established to promote safety, and when preventive efforts fail, organized SAR resources to respond. Organizations key to this framework are the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO). As the central international organizations for aeronautical and maritime matters, most importantly safety, they have worked to establish standards for SAR organizations. Their work includes ensuring that all portions of the globe have a nation assigned to provide coordination of SAR and the establishment of a comprehensive international doctrine for SAR. The U.S. Coast Guard has been and continues to be a key representative of the United States in these and other international forums in the promotion of SAR services and standards. For maritime SAR the Coast Guard has long been a leader in providing services on the high seas to aid not only U.S. shipping, but also ships of all nations when in need. The Amver (automated mutual-assistance vessel rescue) system represents the finest of international response. Run by the U.S. Coast Guard, Amver tracks vessel traffic globally and allows SAR officials to find the nearest capable vessel to assist another vessel (or aircraft over the ocean) in need. This voluntary system ensures a SAR response can be mounted far from beyond the normal reach of SAR forces.

Next is the national level of the system. Ensuring coordination across multiple agencies, states and organizations is critical to the success of the system. In the federal government this is primarily a func-

tion of the National Search and Rescue Committee (NSARC), a multi-agency committee charged to coordinate federal civil SAR services to meet domestic needs and international commitments. NSARC's member agencies include the Department of Transportation (DOT), Department of Defense, Department of Commerce (represented by the National Oceanographic and Atmospheric Administration), Federal Communications Commission, National Aeronautics and Space Administration, and Department of Interior. The Coast Guard chairs the committee and represents DOT. NSARC is guided by the National Search and Rescue Plan which lays out the responsibilities of the various agencies; SAR coordinator responsibilities for U.S. land, air and sea search and rescue regions; and a critical ingredient, the integration of resources which can be used for SAR into a cooperative network. Other national forums provide important links in the system through establishing common national practices, standards and training. Probably the largest and most notable organization for this purpose is the National Association of Search and Rescue (NASAR). Many federal government agencies, including the Coast Guard, are members and participate fully within this organization. Two other nationally based organizations that are critical to national (and local) SAR efforts are the Coast Guard Auxiliary and Civil Air Patrol. Both organizations provide nation-wide trained SAR volunteers, boats, aircraft and ground crews. With their ties to the Air Force and Coast Guard, theses two organizations provide a unique response capability filling what would otherwise be large gaps in the SAR system.

Finally, the system functions locally through cooperation among responding agencies. This is where a variety of things occur to ensure a healthy system. The Coast Guard maintains close relationships through local commanders with all SAR providers, establishes regional and local memorandums of understanding and works within regional and local SAR councils (or like organizations). When the system at the local level is fully developed, SAR responders know who will respond when, and whom they can call on immediately to get additional resources if the situation requires. As with the Coast Guard's own resources, it is important to have the necessary agreements in place to provide the seamless response when resources are requested. This is also the level at which proficiency in SAR response is developed. Cooperative exercises and training sessions with partner agencies ensure that when a real response is necessary, the team can operate effectively.

Results

Uniquely organized and firmly engaged in the SAR system, the U.S. Coast Guard continues to be a leader in maritime search and rescue. This leadership often requires calling on partners in SAR to lend a helping hand when our forces alone cannot respond. This occurs daily around our nation as federal, state and local agencies respond along with Coast Guard resources to calls for assistance. Occasionally more difficult incidents arise that call for more extended cooperation.

One such case in April of 1996 occurred in the Pacific Ocean where an American sailor developed a violent infection after being stuck by a fishhook. Located at Fanning Island, more then 1,000 miles from the nearest medical facility, he contacted the Coast Guard for help. With no suitable landing field on Fanning Island for the long range Coast Guard HC-130, the Coast Guard sought help from the Air Force PJ's. Unfortunately, the PJ teams were too far away to provide the rapid response required. The Coast Guard then turned to the Navy SEALs. A team from SEAL Delivery Vehicle Team One in Hawaii boarded the Coast Guard HC-130 and jumped several hours later into the lagoon on Fanning Island. There they boarded the sailing vessel and provided medical care to the ailing sailor as they sailed the boat to Christmas Island, 250 miles to the south. En route, the Coast Guard had to drop additional antibiotics to the team on board the sailboat. After a three-day sail, the boat reached Christmas Island and was met by a Coast Guard HC-130 with an Army medical team on board. The patient was evaluated and transported back to Hawaii for a nearly one-month stay in the hospital. Without this aid, without this cooperative SAR effort, the sailor would have died.

The real measure of a fully developed system is the ability to respond successfully to major SAR disasters. In recent years there have been several incidents that have highlighted this capability within U.S. SAR system. Most notable are the three commercial airline crashes, TWA 800, Egypt Air, and Alaska Air. Each was of such a magnitude to require the coordination of multiple agencies to provide the number and variety of rescue vehicles to adequately respond. Agreements long in existence and a long practice of cooperation allowed resources to immediately respond and work in a coordinated manner to attempt rescues. The unfortunate truth in each of these disasters is that the SAR effort quickly determined the tragic outcome; no survivors were to be rescued. The response however, was rapid, comprehensive and well coordinated. A most fitting tribute to our nation's SAR system.

Conclusion

Organized for efficient and effective SAR response, working within a global SAR framework, coordinating efforts for an strong national SAR system, and cooperating locally to ensure SAR services are provided on a daily basis, the U.S. Coast Guard is truly a leader in search and rescue.

Rich Schaefer *is a program analyst in the Policy Division of the Office of Search and Rescue, USCG Headquarters and Editor of On Scene.* ***o/s***

National SAR School Celebrates 36 Years of Training Excellence!

By BMCS Chris White

By the 1960s, SAR experts in both the Coast Guard and Air Force Aerospace Rescue and Recovery Service were aware of an ever-increasing need for the establishment of a school devoted to teaching Search and Rescue (SAR) techniques. This need became more and more urgent as the complexity of SAR techniques and equipment increased. Past postponements, coordination problems and other frustrations were forgotten in the spring of 1966. Through joint efforts, the National SAR School moved closer to becoming reality. It was to be staffed by the Coast Guard and Air Force and serve the needs of both services.

"In an abandoned barracks located on Governor's Island, New York, a small team of four Coast Guard and two Air Force personnel joined forces equipped only with a set of Search and Rescue publications and a small budget. Due to such a small budget, all renovations were completed by the staff. These renovations included turning what was once the sleeping quarters for U.S. Army troops, into an open classroom. Major support beams needed to be put into place in order to remove columns and posts which would obstruct the students view of the instructors. Once the classroom and office were set, the staff's first task was the establishment of the school's "mission". . . "To present all aspects of the broad spectrum of the Search and Rescue field to all students of diversified backgrounds and experience levels - and thereby provide uniform training in the operating procedures, techniques and equipment employed in the saving of life and property." (Excerpt from an article printed in a 1969 issue of the *"National Maritime SAR Review"*)

36 years later, this "mission statement" is alive and well and can be viewed on the wall of the National SAR School's classroom.

Since 24 October, 1966, the National Search and Rescue School has been providing quality training in the field of locating distressed military and civilians both on land and at sea. Over the past 36 years, the SAR "tools of the trade" and training aids have advanced light years in technology. Tools then included the "Manual Solution Method" (worksheets which required manually calculating Datum, the Search Area and Effort Allocation). This calculation often took the experienced SAR Coordinator as much as 3 hours to compute for "Datum" (the most probable location of a search object, corrected for movement over time) and an attainable Search Area. Other tools included Maneuvering boards, Dividers and "Triangles". Also available to the SAR school staff of the 1960's was a library of 800 slides and 130 16mm training films gathered from various Air Force, Navy, Coast Guard and civilian sources... all of which were considered state of the art for their time.

In the summer of 89', the National SAR School packed up its bags and moved down to Coast Guard Training Center Yorktown, Va. where it has continued to offer high quality training to newly assigned SAR Coordinators as well as International Students from over 150 nations.

Today's SAR "tools of the trade" and training aids have advanced dramatically. As technology continues to move forward, the National SAR School, with the help of C2CEN and the Research & Development Center, has been very active in keeping up with this technology. Some of those advancements include the following:

The **Command & Control Personal Computer (C2PC)** program (first developed by the U.S. Marines) allowing the SAR Coordinator to plot and display their calculations on a computerized BSB chart.

Integrated within C2PC, lies the **"SAR Tools"** program developed by C2CEN. This program provided the Coordinator a myriad of time saving applications such as computerized Search Patterns and the Flare plotter. Also found within this program, is the **"Automated Manual Solution" (AMS)**. AMS is a computerized version of the manual method worksheets. No longer did it take 2-3 hours to calculate your solution. Depending on the SAR Coordinator's proficiency, calculations were decreased to as little as 20 minutes!

Other computer programs available within the C2PC program include…

...the **"Mariano Sea Currents"** program which replaced the "NOOSP 1400-NA4" surface current books. The Computerized **"Leeway Taxonomy"** which allows the SAR Coordinator to pinpoint the drift characteristics of their search object thus greatly reducing the search object's drift error, and the **"Reversing Tidal Currents"** program which is capable of producing tidal current calculations for any given time and location throughout the U.S. seaboard.

The SAR School is tasked with teaching new SAR Coordinator how to operate the C2PC/SAR Tools program, understand the theory behind the factors making up total drift, and experience realistic scenarios SAR Coordinators will encounter in the field through roll playing exercises. To accomplish this, the SAR School staff utilizes various training aids such as video, power point presentations, Desktop and Laptop computers, closed circuit monitors

& audio system as well as live offshore flare demonstrations.

The SAR School also has a newly updated computer Lab where students are placed into "mock" Groups or Districts (depending on their assigned unit). Here they are placed in various simulated SAR cases ranging from flare sightings and boat fires, to man overboards and SARSAT hits.

The **"Computer Aided Search Planning (CASP)"** program is also integrated into the C2PC program. This tool enables the SAR Coordinator to plot more than one drift object's oceanic drift at the same time with a high degree of accuracy. Soon the field will be introduced to a new SAR program called **"JAWS" (Joint Automated WorkSheets)**. This program was developed to mirror the more accurate calculations recently adopted through the International Aeronautical and Maritime Search And Rescue (IAMSAR) Manual. With the age of computer advancements, "JAWS" makes it possible to better optimize our search efforts.

Each student is also given the opportunity to evaluate an actual SAR Case study. This allows the student to examine the process of a SAR case that did not go as planned in hopes that they will be more aware of the possibility of themselves falling victim to an otherwise successful case due to a series of unforeseen errors.

The SAR School has recently revamped its curriculum to conform with the new IAMSAR manuals, National SAR Supplement, and new CG Addendum to the National SAR Supplement.

Since 1966, the SAR School has expanded its classes offered to include a 3 week resident "Maritime Search Planning" (MSP) course, 1 week SAR Supervisors (SARSUP) course, 1 week traveling Search Coordination & Execution (SC&E) course, and the Inland Search & Rescue course.

Our current Staff includes:
LCDR Darcy Guyant (SAR School Chief),
Ltcol. Fowler (Inland SAR School Chief),
LT Kevin Jones (Asst. School Chief),
Instructors
LT Steven Stewart,
LT Brian Hollis,
BMCS Chris White,
QMCS "Frenchie" Lacomte,
BMC Wayne Matthews,
QMC Randy Reid,
AMT1 Ron Granstra,
Ssgt. Dan Conley (Inland Search & Rescue), and
YN2 Tamica Gatling (School Yeoman).

Over the past 2 years, the **Operations Center Standardization Team (OPSTAN)** has been developed and is based here at the National Search & Rescue School. This team consists of:
LCDR Erin Macdonald (STAN Team Chief)
LTjg Kevin Morgan,
QMC "Mac" Shelton,
QMC Rex Wyers,
QMC Brian Wilson
BM1 Phil Myers
TC1 Bart Bennick, and
TC1 John Yoblondki.

The SAR School staff is expected to increase by 6 additional members by the end of FY 04.

Since the school began, approximately 250 students have been trained annually through the 3 week resident MSP course. To date, over 15,000 Coast Guard SAR Controllers have graduated SAR School, as well as international students from over 150 countries.

Yes, 36 years and better than ever! The staff looks forward to seeing what new developments the next decade will bring. Remember, The National SAR School is your school… and as such, we welcome your suggestions!

From our staff to you… ***"Hit it Hard… Hit it Fast!" and "Always think out of the box!"***

BMCS White *is an instructor at the National Search and Rescue School, located at Coast Guard Training Center Yorktown, Virginia.* ***o/s***

OPSTAN and the Communications Center

By TC1 Bart Bennick

Communications personnel play a pivotal role within the SAR organization and their efforts often go unnoticed outside of the communications community. The fact that Communications Watch-standers are, more often than not, the first point of contact when it comes to SAR, the next logical step for the OPSTAN team is the addition of communications personnel. With this in mind, OPSTAN Communications Personnel are focused on evaluating a Communications Center's current personnel and material readiness by providing a "snapshot" of a Communications Center's functions over a three to four day visit. This "snapshot" gives a Unit the opportunity to view it's SAR operations from an outside perspective by identifying both best and worst practices. Moreover, we also serve as advocates by providing a conduit to facilitate the timely flow of information between the program manager (OPR), National SAR School, cognizant command centers and units in the field. We are dedicated to ensure that "the first point of contact", the Communications Watch-standers, have the tools, training and expertise to provide an effective and timely SAR response.

During the FY 2003 OPSTAN travel season, OPSTAN Comms is focusing on tools, policy, training and the Commcen/Opcen relationship. In addition to addressing the previously mentioned topics, each Communications Watch-stander is evaluated on his or her ability to operate the Digital Voice Logger (DVL), manipulate audio files using Goldwave audio manipulation software and demonstrate their knowledge level of SAR policy and procedures via a written examination. The OPSTAN check-list can be viewed in it's entirety on the National SAR School/OPSTAN web page: www.uscg.mil/tcyorktown/ops/sar/OPSTAN/index.htm

TC1 Bennick *is a member of theOperations Center Standardization Team, National Search & Rescue School,Coast Guard Training Center Yorktown, Virginia.* ***o/s***

PREPARATION EQUALS PERFORMANCE

By LTJG Kevin Morgan

After nearly two years of inspections by the Operations Center Stan dardization (OPSTAN) Team, the Coast Guard average on the written examination for SAR Controllers is 86% and the average for Supervisors is 89%. A typical OPSTAN visit consists of the written examination, a drift vector quiz and contrived scenarios within the tested unit's AOR, which require the use of C2PC/SAR Tools. Additionally, Communications Center watchstanders are given a written test and evaluated on the use of the Digital Voice Logger and the Goldwave Audio Manipulation system. While these tests are being administered, other OPSTAN members complete an extensive review of the unit's training program, SOP/Standing orders, PQS and Case Documentation within the Operations Center and Communications Center.

The OPSTAN Team recently wrapped up an assessment of Activities New York's Operations Center. The unit performed rather well during the inspection as they achieved above average test scores and demonstrated sound judgment and proficiency with C2PC and SAR Tools. The OPSTAN Team could clearly see that Activities New York put a great deal of effort into preparation for the visit.

A new Coast Guard Addendum to the National SAR Supplement to the IAMSAR Manual was promulgated on 26 July 2002. The new Addendum contains an entire section (1.3), which outlines the professional requirements that are crucial to proper SAR response. This section is the OPSTAN's primary reference when reviewing a unit's training program. Activities New York had an outstanding training program as evidenced by their performance during the visit. They base their program on the professional requirements outlined in Section 1.3 of the Addendum and "check-off" each task as it is completed. Additionally, theTraining Petty Officer documents the topics covered during every training session in each member's training record.

The Addendum now requires each unit to develop a "Currency Training Program," commonly referred to as a re-certification program. Activities New York has developed such a program which encompasses the requirements outlined in the Addendum. Deserving of equal credit, Group Southwest Harbor provided their existing re-certification program to New York as a guide to develop their own plan.

The OPSTAN's checklist was revised in September 2002 and is currently posted on the National SAR School website at www.uscg.mil/tcyorktown/Ops/SAR/index.htm. Units are strongly encouraged to utilize the checklist in preparation for a visit. Those units who are not yet scheduled for a visit are also encouraged to access the checklist to ensure compliance with current policy. Additionally, the website contains sample C2PC/AMS practice problems to assist Controllers in maintaining proficiency with the system and units are encouraged to incorporate these or similar problems into their training programs.

Remember: Preparation equals performance!!! Don't wait until your unit is scheduled to be inspected by the OPSTAN Team to begin preparation…start now!!! Questions regarding the checklist can be directed to the Operations Center Standardization Team's Assistant Supervisor at kmorgan@tcyorktown.uscg.mil or 757-856-2296.

LTJG Kevin Morgan *is the Assistant Supervisor of the Operations Center Standardization Team, National Search and Rescue School, Coast Guard Training Center Yorktown, Viriginia.* ***o/s***

RESCUE 21

Improving Communications to Save Lives in the 21st Century

By Kathryn Ebner

Imagine being lost at sea in a boat, stuck in a fog bank at night, and lacking any sense of the way home. This was the predicament of a 22-year old California woman as she floated on her 24-foot boat, Papa's Toy, in August 2000. Fearful and disoriented, she did what so many mariners do when they find themselves in trouble – she called the U.S. Coast Guard, then sat back and waited. And waited.

Always quick to respond to an emergency, Coast Guard Activities San Diego dispatched a 41-foot rescue boat and proceeded to a position provided by another government agency's radio direction-finding system, but Papa's Toy was not there. A Coast Guard helicopter was launched to join in the search. The fact that the woman did not know where she was and existing Coast Guard equipment could not reliably get a fix on her position hindered the rescue effort.

Four hours had passed when help came from an unexpected source. One of the petty officers on watch had recently operated prototype radio direction-finding equipment that was developed for a technology demonstration for the Coast Guard's National Distress and Response System Modernization Project (NDRSMP). After bringing the system on line and doing in-depth reprogramming to the software, originally developed to demonstrate scenarios only, the technicians were able to direct the helicopter to within ten nautical miles of the Papa's Toy. The hypothermic woman was located and returned to San Diego for medical treatment.

We May Be Able to Hear You … and Maybe Not

Americans expect the Coast Guard to respond to their calls for help at sea, like calling 911. Unlike 911, the Coast Guard cannot determine the position of a radio transmission. The lack of radio direction finding hampers the successful prosecution of SAR cases in which the distressed caller either does not know where they are or does not have the chance to report the position. The Coast Guard is utilizing antiquated communications equipment that was installed in the early 1970's and depends on persons in distress to, calmly and clearly, state their identity, location and nature of distress. That is difficult at best in many distress situations.

Little to no direction finding capability is just one of the many deficiencies of the current National Distress & Response System (NDRS). Other shortcomings include interoperability, DSC, single channel operation, VHF-FM communication gaps and failing equipment are to name a few. The Coast Guard has numerous coastal zone communication gaps or dead spots in today's system, areas in which the clear reception of transmissions is severely impaired or totally precluded due to terrain. Furthermore, if a transmission is received and recorded, the analog subsystems have limited audio storage and no ability to enhance the sound quality of the recorded signals. This deficiency continues to be highlighted by SAR cases during which the Coast Guard is able to play back the garbled distress call from the boat, but still cannot understand what the caller is saying.

The lack of communications interoperability with the Coast Guard's various partners and customer's is another problem. In most cases, only one transmission frequency can be active at a time, and communications centers are frequently limited to single channel operations making it difficult to simultaneously communicate with the distressed mariners and coordinate SAR efforts with the Coast Guard, federal, state and local agencies.

Finally, the present distress communication system's 30+ year-old technology works against economy and efficiency. It relies on dedicated data circuits between the communication centers and the radio high-level sites, which in turn require dedicated landlines. This is an expensive arrangement and limits access only to those Coast Guard units that are connected to that high-level site. Recorded or relayed messages must be repeated by voice or transcribed, which is a time consuming pro-


U.S. Coast Guard Rescue 21 System
Saving Lives in the 21st Century
Other Agency Dispatcher
Other Agency System (YELLOW)
NDRSMP Network (BLACK)
Telephone Connection (GREEN)
CG OPCEN
Protected Voice & Data (RED)
Marine Band Voice & DSC (BLUE)

cess that is susceptible to errors. The system also lacks a common equipment standard that impedes the introduction of new or improved subsystems. It is not that the current short-range VHF-FM communications system doesn't work; it does. However, it is comprised of obsolete, aging and non-standard equipment, and it is deteriorating quickly.

The modernization of America's existing distress communication system has been in the works since the early 1990's. The Coast Guard is aggressively pursuing modernizing the National Distress and Response System into a fully capable, integrated distress response communications system. The new system, Rescue 21, will feature enhanced VHF-FM coverage, position localization on a VHF-FM transmission beyond just simple direction finding, increased number of voice and data channels allowing watchstanders to conduct multiple operations, protected communications, asset tracking and digital voice recording with immediate enhanced playback capability. In addition, it will have interoperability with various local, state and federal agencies and customers facilitating enhanced coordination of operations. With Rescue 21, the Coast Guard has the opportunity to bring a critical part of the U.S. maritime communications system into the 21st century.

In short, the current system is in dire need of modernization. As Coast Guard Commandant Admiral James Loy noted in a 1999 speech, "…there is a vast disparity between the communications capability that the public thinks we have and the communications system that we do have." The Coast Guard is relying upon Rescue 21 to close this gap between perception and reality.

A World of Improved Capabilities

When Rescue 21 is in place, mariners can expect a more effective response to emergencies at sea. The new system will allow Coast Guard operators to continuously monitor the distress and hailing frequencies, Channel-16 and the new Digital Selective Calling (DSC) distress frequency, Channel-70. NDRSMP will have a dedicated "guard" capability for these frequencies, even when other "working" channels are in use

To further define DSC, at the push of a button DSC automatically sends out a digital distress signal over channel 70 which can be automatically relayed through nearby vessels to shore side rescue authorities. If properly registered and interfaced with GPS the signal transmits the vessel's position, Mobile Maritime Service Identity (MMSI) number and nature of distress (if entered). The receiver enters the MMSI number into the database to reveal vital information such as the name, size, type and owner of the vessel. Presently, DSC is required equipment on only large commercial vessels and is optional for all others[1].

With Rescue 21, even normal voice distress calls over Channel 16 will not require the Coast Guard to launch SAR efforts based on a "best estimate" of where the distress is occurring. The system will automatically provide a Group Command Center (GCC) with a geographic display and a time-stamped line of bearing (LOB) on each Channel 16 transmission from each high-level site. Using two or more correlated LOBs, a position can by localized to an area less than 25 square nautical miles.

Digital voice recording with immediate enhanced playback capability will allow SAR controllers to replay and 'clean up' recorded VHF-FM distress calls to improve audio quality immediately. Transmissions received in the last five minutes will be instantly available, transmissions up to 24 hours old will be retrievable within one minute, and older signals will be retrievable in 10 to 30 minutes.

Asset tracking automatically reports a Coast Guard vessel's position and status, which aides GCC SAR Controllers in determining how to best utilize each asset and maintains situational awareness of Coast Guard mobile assets as they proceed on rescues or other missions under dangerous weather, surf, or operational conditions, thus, increasing the safety of their crews.

RESCUE 21 Improvements Over the Current System

- Enhanced VHF-FM communications coverage
- Increased number of voice/data channels, mulitple channel operation
- Digital Selective Calling
- Position Localization beyond simple direction-finding
- Digital voice recording with immediate enhanced playback capability
- Coast Guard asset tracking
- Interoperability with federal, state, and local agencies
- Secure communications capability

Rescue 21 will provide interoperability between GCC's, Coast Guard assets, various federal, state and local government agencies and the recreational boater. In addition to the distress channels, Rescue 21 will feature six data or voice channels operating in analog voice, digital voice, or digital data and users will have access to the VHF-FM, VHF-AM, and UHF bands. These features give the Coast Guard much more surge capacity for response to major incidents such as airliner accidents in the maritime environment.

Rescue 21 radios also have built-in secure communication capability, a critical requirement for Coast Guard units cooperating with other federal and state agencies during counter-drug, illegal migrant interdiction, or Homeland Security missions.

Combined, these improvements spell vastly improved Coast Guard communications, response, and operational effectiveness. That, in turn, has profound implica-

U.S. COAST GUARD RESCUE 21 SAVING LIVES IN THE 21st CENTURY

U.S. Coast Guard Rescue 21 System

Saving Lives in the 21st Century

tions for those who find themselves in distress at sea or in U.S. inland waters and turn to the Coast Guard for help.

Rescue 21 – Improving Communications to Save Lives in the 21st Century.

The project is divided into two phases: the Design Demonstration and Validation Phase and the Full-Scale Development Phase. NDRSMP is presently in the Full-Scale Development Phase. During Phase I, the Coast Guard competitively selected three systems integration contractors (SICs) – Lockheed-Martin, General Dynamics Decision Systems (GDDS-formerly Motorola Systems Solutions Group), and SAIC – each developed a design of the system and demonstrated critical functions for the NDRSMP. The Full-Scale Development Phase began in October 2002 when the contract was awarded to GDDS to produce and deploy Rescue 21.

The Initial Operational Capability (IOC) installation and testing of Rescue 21 commenced at two adjacent Groups, Atlantic City and Eastern Shore, in October 2002 and is scheduled for completion in September 2003. Follow-on installations at other Coast Guard Groups needed to achieve Full Operational Capability (FOC) will begin once the system is tested and verified. Rescue 21 deployment is scheduled for completion in 2006.

Until Rescue 21 is fully operational, interim direction finding and Digital Voice Loggers (DVL) for recording, playback and archiving capabilities were installed at selected stations around the country. But these capabilities are limited in scope and are essentially a stopgap/Band-Aid for the current system until Rescue 21 comes online.

The complete installation of the Rescue 21 communications system is scheduled for 2006 with follow-on maintenance and support for 15 years, at a total cost of $611 million. From a national standpoint, this will be money well spent. When the modernized National Distress and Response System is finally operational, the United States will have a maritime distress and communication system comparable to the land-based systems that many local and state emergency services already have. As more and more Americans take to the water for reasons of recreation, commerce, and tourism, it is essential that America's lifesavers in the Coast Guard have the same capability.

[1] The 1988 Global Maritime Distress and Safety System Amemdment to the International Safety Of Life At Sea Convention laid down an international requirement for Digital Selective Calling in Sea Area A-1 - essentially the area along a nation's coast that is serviced by a VHF radio station. The introduction of RESCUE 21 will fullfill U.S. commitments to the convention in this area.

Kathryn Ebner** is a program analyst in the Policy Branch, Office of Search in Rescue, USCG Headquarters and SAR Program project specialist for RESCUE 21. **o/s

Non-Traditional SAR Notification

By LCDR Jim Olive

Recent trends in the OEM (Original Equipment: Manufacturer) outfitting of new boats coming off the lines of several major boat makers suggest a rising public demand for a maritime version of the OnStar system so popular on our highways. Significant progress has been made to date (one company already has their products on the dashboards of boats that have been launched and have transferred calls to the CG), and the technology is not going to wait for the Coast Guard to catch up. The major players in this competitive market have already approached the Office of Search and Rescue to coordinate the emergency response portion of their services. As we work with these companies (and they've been very responsive to our needs thus far), we have tried to educate them on how our SAR system works, and how they will/should fit into it. We have provided appropriate phone numbers to our command centers and the boundary lines associated with each SAR region. As these emergency comms come in over their respective satellite systems, computer servers will sort GPS Lat/Long information and provide commercial call center operators with the phone number for the correct Coast Guard Group/Activity, District/Section, or Area command center. System capabilities vary, so with these calls a command center may expect to be able to establish email comms with a distressed vessel, or may just get a Lat/Long and know the mariner considers their situation worthy of an emergency response. Bottom Line: These methods of distress notification are out there, and need to be responded to in an appropriate manner. Information on specific services will be made available as it becomes known. If you become aware of such systems that you have not previously heard of from the Office of Search and Rescue, please notify us at once so that we can open a dialogue with those entities.

LCDR Olive** is Acting Chief of the Policy Division in the Office of Search and Rescue, USCG Headquarters. **o/s

Can You Hear Me Now?

By LT Arturo Perez

You are on watch at Group East Bay when the phone rings. It's Mr. Sprintmen, calling from his cell phone. "My boat is sinking," he yells frantically. "I'm almost in the water myself. I'm off the coast of Rhode Island somewhere."

Mr. Sprintmen's sailboat had capsized and as a last resort he dialed 911 on his cell phone. Fortunately, the national emergency distress system for wireless communications took Mr. Sprintmen's call and was able to determine his position using his cellular phone signal. They determined he was 5 NM southeast of Newport, RI.

Because Group East Bay had 911-linking capabilities, Mr. Sprintmen's call and position information was automatically forwarded from the Rhode Island 911 emergency response center to Group East Bay. Group East Bay then quickly took over and responded to the case.

Could this tale soon become reality?

Although the preferred means of communications for maritime distress remains VHF-FM in the A1 Zone, the number of 911 distress calls from near-shore boaters has increased. Some members of the boating public continue to use cellular phones as their primary means of communication and to call 911, the emergency response number they are accustomed to while ashore.

Currently, when a 911 call is made from a boater in distress, emergency dispatchers take the call and pass the information and/or the distressed caller to the Coast Guard. Often the call is transferred to the nearest station or group. Some of these calls are transferred to the appropriate Coast Guard entity; however, some calls are lost or misdirected, placing the distressed vessel in jeopardy.

By enhancing the link with 911 marine distress callers, the Coast Guard could have more efficient communication with the distressed vessel and easily determine the caller's position. This improvement could result in using fewer response resources and reduce the time to get on scene.

As previously mentioned, a benefit of linking into the 911 infrastructure would be the ability to determine a caller's position. The Wireless Communications & Public Safety Act of 1999 made 911 the universal emergency phone number in the United States, and Federal Communications Commission regulations are now forcing cellular providers to supply Automatic Number Identification/ Automatic Location Identification (ANI/ ALI) data, including latitude/longitude. Eventually, with ALI, the Coast Guard will have an accurate position to begin their search and rescue mission.

To better understand the impacts of the increased use of cellular phones in maritime distress, the Research and Development Center, with the sponsorship of Commandant (G-SCT-2), established the Global Incident Notification (GIN) project. This project evaluates the benefits and liabilities of using available technology to streamline the communication link between 911 cellular marine distress callers and the Coast Guard.

With new technologies there are many issues that must be addressed to fully understand the system and its impacts on Coast Guard operations. Concerns about workload, legal ramifications, system interface, and implementation must be researched and assessed against potential benefits. The USCG Research and Develop Center will prototype available technology at two Group command centers, one in D-9 and one in D-1. The prototype sites will be used to provide a conceptual demonstration to evaluate the system and personnel impacts at the Group level. Throughout the one-year period, the R&DC will manage this concept demonstration with guidance from program managers and stakeholders at CGHQ and in the field. The outcome of this effort will be an evaluation report on the concept demonstration of using 911 equipment to receive cellular marine distress calls.

A follow-on article will be provided at a later date to detail the outcomes of the project. If you have any questions feel free to contact LT Arturo Perez.

LT Perez *is the GIN Project Manager at the Coast Guard's Research and Development Center in Groton, Connecticut.* ***o/s***

THE NEXT GENERATION OF SATELLITE-BASED EMERGENCY NOTIFICATION:

DISTRESS ALERTING SATELLITE SYSTEM (DASS)

By LCDR Paul Steward

The Distress Alerting Satellite System (DASS) is a satellite-aided distress alerting system based on equipment carried on the next-generation Global Positioning System (GPS) constellation. DASS will focus on satellite distress alerting in support of civil search and rescue. DASS is currently being developed by the United States in a multi-agency effort involving National Aeronautics and Space Administration (NASA), National Oceanic and Atmospheric Administration (NOAA), and the United States Coast Guard (USCG), with assistance from specific entities within the Department of Defense. DASS will address the basic civil SAR requirements of immediate alerting with accurate position. The intent is for DASS to augment the existing Cospas-Sarsat international satellite distress alerting system.

To understand the impact that DASS will have on search and rescue, one must first understand the basic operating principle of the existing Cospas-Sarsat system. Cospas-Sarsat is an international, humanitarian search and rescue system that uses satellites to detect and locate emergency beacons carried by ships, aircraft, or individuals. The system consists of a network of polar-orbiting and geostationary satellites and ground stations. Some of these ground stations are, in turn, directly linked to rescue coordination centers around the globe. Figure (1) is a graphic representation of how the Cospas-Sarsat system operates. When an emergency beacon is activated, the signal is received by a satellite and relayed to the nearest available ground station. The ground station, called a local user terminal, processes the signal and calculates the position from which it originated. This position is transmitted to a mission control center (MCC) where it is joined with identification data and other information on that beacon. The MCC then transmits an alert message to the appropriate rescue coordination center based on the geographic location of the beacon.

For the past 20 years, the Cospas-Sarsat system has provided a tremendous resource for protecting the lives around the world. The Cospas-Sarsat system has directly aided in the rescue of over 15,000 people since its inception in 1982. A major component of this system is the emergency beacon that operates on the internationally allocated 406 MHz distress frequency. These 406 MHz beacons transmit a digitally

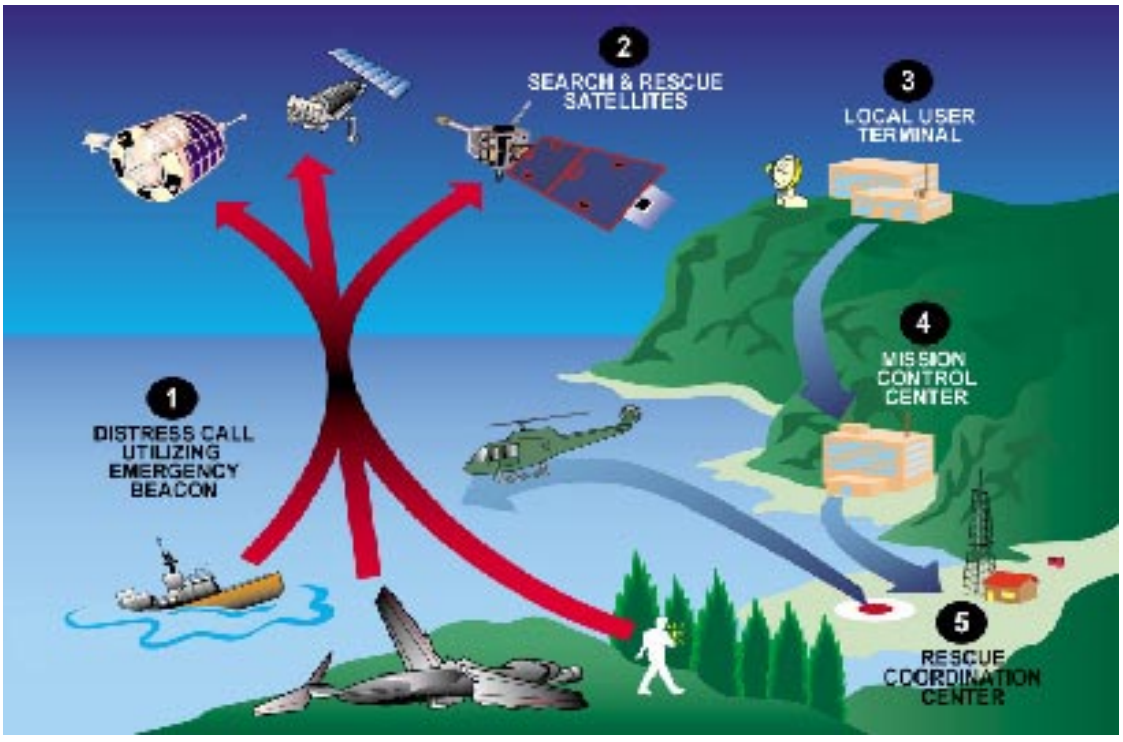


Figure 1: Cospas-Sarsat Satellite Distress Alerting System

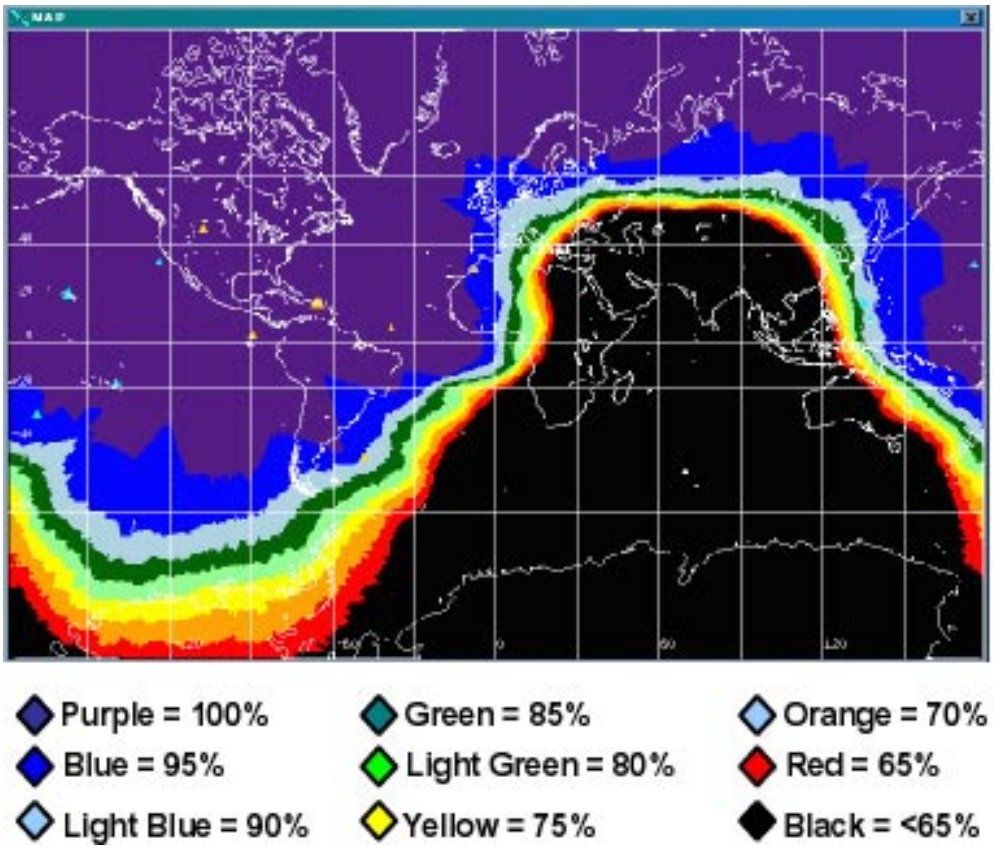


Figure 2: Computer-derived DASS coverage chart with two ground stations located in Hawaii and Puerto Rico

encoded message, which provides such information as the country of beacon registration and the identification of the vessel, aircraft or person in distress. There are currently about 250,000 distress beacons that operate on 406 MHz in use worldwide (over 95,000 of these registered for use in the United States), and the numbers are rapidly growing. With a 406 MHz beacon, a distress message can be sent to the appropriate authorities from anywhere on Earth 24 hours a day, 365 days a year.

DASS is intended to augment the Cospas-Sarsat system, and will do so in an efficient, cost-effective way. It will do this by taking advantage of available reserve power and weight capacity on the next generation GPS constellation of twenty-four satellites and six in-orbit spares. Significant savings will be realized because the satellite integration and launch costs are already supported, with much of the hardware engineering already completed for another project, since discontinued. This existing space-qualified hardware can, and is, being easily modified to meet DASS requirements. Additionally, fewer ground stations will be needed to provide either regional or global coverage. Figure (2) shows a computer-derived regional coverage chart based on only two ground stations. As can be seen in this figure, two ground stations combined with the full GPS satellite complement will provide one hundred percent distress alerting coverage for approximately half the globe. DASS will be able to receive and process distress alerts from existing Cospas-Sarsat 406 MHz emergency beacons, and any future beacons that operate on this frequency. Each GPS satellite will be equipped with a 406 MHz "bent pipe" repeater able to receive and relay these distress alerts to DASS ground stations.

DASS is intended to provide:

- Highly reliable near-real-time alerting with identification and location on 406 MHz

- Global coverage with multiple satellites for redundancy and improved detection

- Up to three means of accurate location determination

DASS represents a dramatic breakthrough in the potential to save lives and property, reduce risks to rescue personnel, and reduce rescue costs. DASS will improve the time it takes to receive a distress alert with a position from the current average of fifty minutes to under ten minutes. It will also greatly improve the accuracy of the derived position of a satellite distress alert from the current average of two miles to under one mile. This position accuracy will improve to under than one hundred yards with additional satellite passes.

As stated earlier in this article, DASS is envisioned as an augmentation to the existing Cospas-Sarsat system, and can be implemented on a regional or global basis. It is anticipated that DASS could reach an initial operating capability as early as 2008, and be in complete operation with a full satellite complement in the 2012-2015 timeframe - dependent on the GPS satellite launch schedule. Given these capabilities, DASS could truly take the "search" out of "search and rescue".

For additional information concerning DASS, please contact Lieutenant Commander Paul Steward at psteward@comdt.uscg.mil and paul.steward@noaa.gov, or via telephone at (301) 457-5678, ext. 142.

LCDR Steward** is the Coast Guard's Cospas-Sarsat Liaison Officer in the Office of Search and Rescue, USCG Headquarters. **o/s

Responding To The Uncorrelated Mayday

Effective Use of Hi-Site Range Patterns

By Norm Heller

"Mayday, mayday, we're sinking" on channel 16 VHF-FM is too often followed by silence, and no response to callouts or the UMIB. Maybe it's a hoax. Maybe not. Let's do something; let's launch, someone may be in trouble. Good idea. Where?

While the VHF-FM radio system is generally thought to be limited to line-of-sight range, every watchstander can cite instances of receiving transmissions from stations hundreds of miles away. Containment of all possible transmission points would require a huge search area and make great demands on SAR resources. Prudent use of hi-site antenna range patterns, as provided in ALDIST 040/99, can focus search resources on the most likely sector. Scarce taxpayer dollars are saved, crews remain ready for other emergencies, and the probability of detecting a distressed mariner remains high.

An uncorrelated distress transmission was monitored by Group Eastern Shore over its Belle Haven Hi-Site, and by Group Hampton Roads over the antenna located at Cobbs Creek. Each of these antennas, considered alone, has a probable reception area of approximately 1600 square miles. Their overlapping area, as shown in the adjacent figure, is only about 21 miles long and 5 miles wide, just over 100 square miles. If the probability of success is maintained while only six percent of the resources are expended, assets are indeed being used wisely.

The use of overlapping antenna range patterns to limit search areas is not new. The C2PC search planning software now being used throughout the Coast Guard includes that capability. The predecessor software, GDOC, also had a form of it. It is

likely that the concept was employed even when search planning was completely manual. The concept is well accepted.

Some controllers may be using the concept incorrectly, without sufficient understanding of the tools at their disposal. This article is intended to improve that understanding. Competent use of the range pattern concept requires help from three distinct professional areas:

Telecommunications: What does the range pattern mean?

Computer science: Is the C2PC display valid?

Search planning: How are the range patterns properly used?

No search planner is likely to have professional mastery of all three of these disciplines. As the end user, however, the search planner needs to know enough to ask the right questions, and to understand the answers.

What does the range pattern mean? An overly simplified answer is that it indicates the limit of reception of the antenna. From a 300-foot antenna, the visible horizon is 18.7 NM away. Is that the limit of reception? Probably not, since VHF radio waves refract differently than visible light waves. The antenna height of the transmitting vessel is an important factor; a ten foot antenna can be 'seen' over 22 miles away! What assumptions about antenna height were made in the determination of the range pattern? Does the antenna have uniform sensitivity, yielding a reliable 'circle', or is the pattern deformed in some way. Was the pattern determined theoretically, or through field tests?

Field tests are far more reliable than theoretical circles. While many hi-site antennas theoretically have omni-directional (circular) sensitivity, some do not. Moreover, local influences such as terrain and structures can deform the pattern significantly. Operations people, not technicians, must determine the vessel antenna height for field tests. Since the range pattern may be used to limit the initial search area for an uncorrelated mayday, the group commander should approve the test parameters.

The types of vessels typically encountered in the AOR may warrant substantially different assumptions about the hailing vessel's antenna height. There may be seasonal variations as well. In

some areas a good summer choice might be the 5-foot antenna associated with a 20-foot runabout. In others, the 30-foot antenna typical of a medium-displacement fishing vessel might be more typical, especially in the winter.

Is the C2PC display valid? Unless it has been modified, the answer is probably 'No'. The hi- site data originally installed in C2PC was the best available to the computer specialists at C2CEN when the program was developed. Some of the antenna positions may be in error, and must be checked. In most cases a circular pattern was assumed, and given a 'standard' diameter of 25 miles, which only rarely will be correct.

After the field test has been conducted, the pattern should be converted into an "Overlay" and installed in C2PC. The existing overlays that shipped with C2PC are not editable by the user.

C2CEN will gladly create the overlays and e-mail the files to the user. E-mail the request to smefdesk@c2cen.uscg.mil describing the exact antenna position and the radius (if the pattern is to be circular). If the pattern is irregular, provide the latitude and longitude of a sufficient number of position points to define the limit of the range pattern. C2CEN will e-mail the user a file of the overlay to be installed following the procedures in Section 3 of the C2PC manual. When the new overlay is installed the local copy of C2PC will have ***two*** range patterns for the particular hi-site. One will be named, for example, "Cape Henry"; the other, "Cape Henry corrected". All local users of C2PC should be instructed to use the "Cape Henry corrected" overlay. However, when C2CEN issues the next update to C2PC, the revisions will be incorporated in the standard "Cape Henry" overlay.

If time does not permit waiting for C2CEN to create the overlays, use the instructions in Section 3 of the C2PC manual to create them. However, be sure to e-mail a copy of the new overlay to C2CEN so it can be included in the next revision.

How are the range patterns properly used? Start with the radio watch. Faced with an uncorrelated mayday, the TCs can do an excellent job of checking all relevant hi-sites, and even those of neighboring groups. The new digital voice recorders installed at most Group Operations Centers are extremely valuable here. Then use C2PC to plot the ***corrected*** range patterns for the hi-sites that monitored the transmission, and focus attention on the area of overlap.

If that area is still large, the planner may be tempted to exclude the segments covered by those hi- sites that failed to monitor the transmission. While permitted by ALDIST 040/99, this practice should be avoided unless available resources are otherwise inadequate to cover the area with a reasonable probability of detection. The failure of a hi-site to monitor a particular transmission can result from many complex factors.

Finally, some search planners may be uncomfortable using a method that is less than exact. After all, the edge of the pattern is not an absolute, impenetrable wall. Sometimes the range will be greater; sometimes, less. It should be recognized, however, that all search planning methods are directed toward the ***probable*** location of the search object. For example, the standard alpha search area associated with a single point datum has a probability of containment of only 65%. The confidence that can be placed in range patterns is consistent with that of the planner's other tools.

Antenna range patterns have an important place in the SAR toolbox. Just like any tool, they need to be adjusted, sharpened, and used by skilled professionals. The National Search and Rescue School says "Hit 'em hard; hit 'em early!" The search planner can also "Hit 'em smart!" with properly calibrated hi-site range patterns.

Norm Heller *is a USCG Auxiliarist and an instructor at the National Search and Rescue School, USCG Training Center, Yorktown, VA. While on active duty, he was an instructor at the USCG Electronics Technician School.* ***o/s***

The Wave Approaches...

Motor Lifeboat ***Victory*** *CG52312 surf training at Station Yaquina Bay, Newport, Oregon in January 2002. Surf drills are conducted as much as possible to keep crews proficient in adverse conditions.*

Photo provided by BM2 Whidden, USCG Station Yaquina Bay

Low-Tech in our High-Tech Age

By CDR John R. Butler, USCG (Ret)

We surely live in the marvelous age of high-tech. Our new 87-foot Coastal Patrol Boats (four pages of coverage in the December, 1998, Coast Guard magazine) exemplify "technologically advanced" design. Yet I remember, as a LT, going aboard a new 82-footer and thinking how sensational they were, how up-to-date compared to the Grumman Albatross I flew.

Our new 47-foot Motor Lifeboat (three pages of coverage in the Fall, 1998, On Scene) is another great high-tech design, highly superior to the 52-foot Triumph that I saw, already under water and slipping away forever, over 37 years ago.

But, (isn't there always a but..?), some of our clients, the public that the Coast Guard strives to serve so well, still get into troubles that just don't respond to high-tech, or are not equipped with high-tech gear to aid with their rescue.

Also from the December, 1988, Coast Guard: "I saw the cutter coming out, and I knew you guys would find me," Schreiner said. "I wish I had something to get your attention, because you guys passed 1000 yards away from me on your way to my boat," he told them.

The November, 1998, Coast Guard reported four men lost at sea, and four surviving, aboard the drifting 16-foot fishing boat Sea Bird for 19 days. The Operations Officer of the CGC Metompkin reported that there was no lifesaving equipment aboard the Sea Bird, and that one survivor reported that a Coast Guard aircraft had flown over them on their 18th day adrift, but had not seen them.

The excellent four-pager "Drowning Prevention: PFD Design and Use" in the Fall, 1998, On Scene, was all about drowning prevention, and didn't attempt to address being rescued after avoiding drowning. Please pardon me of my memories, but I also recall that the Mae West inflatable PFD aviators wore when flying over water carried an abundance of equipment to signal your hoped-for rescuer while floating in the briny.

The new, 62nd edition of the well regarded "Chapman's Piloting, Seamanship & Small Boat Handling" completely omits any reference to "a nearly perfect" signaling device.

CWO Jim Krezenski's fine article "In Distress? Know the right way to signal Coast Guard" in the Spring, 1988, On Scene wasn't an attempt to detail all available signaling methods, but it could have made at least a brief mention of the "nearly perfect" device.

From the September and October, 1991, Commandant's Bulletin: "Possessing no mirrors, flares or sea dye, the men said they resorted to using their credit cards to reflect the sun in the direction of U.S. Coast Guard plane that eventually spotted them." "Baker Spotted a faint glint from a credit card the survivors used to reflect the sun."

And, finally, from the 2/90 On Scene: "By the way your best emergency signaling device is a radio. The signaling mirror is a close second and has been spotted over 100 miles away by rescue aircraft."

Now all of these ducks are lined up in a row, will I pull the trigger? You bet! Because: Our collective eyes, arguably still one of the best search and rescue aids carried on SAR missions, are focused instead on high-tech solutions to problems that are sometimes destined to be resolved with low-tech gear. We are, sometimes, figuratively and literally missing the boat.

Back in 1990, CWO Hyde, (then survival systems manager in the HQ Search and Rescue Division), reminded readers about the Emergency Signaling Mirror in a half-page article introducing the new acrylic plastic model that wouldn't break or sink. But I haven't noted any articles on signal mirrors since then.

Yes, that is what I call "the nearly perfect" signaling device, the lowly, low-tech signal mirror. Yet, signal mirrors are now the Rodney Dangerfields of survival and signaling equipment. That's right: "They get no respect!"

That really is too bad, and it hasn't always been that way, either. Back in World War II they were revered by pilots and seamen. Military pilots and Coast Guard boat crews still carry them.

Why the change? Today, high-tech gear promises (an usually delivers) extraordinary capabilities for saving lives. From the simple little strobe light to super-sophisticated satellite communications, they really are marvelous, aren't they?

And, the almost always guarantee your safe delivery from peril, don't they? But… doesn't that almost bother you just a bit? What if the battery in your strobe or communications gear packs up? What if you use your last flare, or last smoke signal, and no one sees it? What if the waves dissipate your dye marker before that helo crew ever had a chance to see it?

Then is when you should remember that your signal mirror will outlast you, an intentionally disturbing thought, in a survival situation.

And, yes, I am a bit of a nut about them, because I believe in them, carried one on every flight as a Coast Guard pilot, have seen their distinctive flash at 43 nautical miles, and have twice had my personal small boats rescued from moderate peril because I had a signal mirror aboard.

Heliographs, as they were known as late as World War II, were a part of the U.S. Army's Signal Corps' equipment as late as this century, and played a significant part in the surrender of Geronimo and his Apaches in Arizona in 1886. And in 1895 a heliograph was seen over a record distance of 183 miles between Mt. Ellen, Utah, and Mt. Uncompahgre, Colorado.

I doubt the Signal Corps places any credence in the value of signal mirrors today, but our Coast Guard has, regrettably, been too passive (in my not-quite-humble opinion) about recognizing and promoting them. As late as 1995 the list of "Coast

Guard Approved Mirrors, Emergency Signaling" had six models, all metal. Yes, they do work, but some corrode, all will sink, and all require two hands to use. Of the two now on the market, one reflects only 30% as much light as a glass mirror of the same size, the other just 10%!

While signal mirror patents date back to 1946, and many variations have subsequently been patented, it wasn't until a Mr. Malcom G. Murray, Jr., patented his first model in 1967 that signal mirrors found a true champion. Recognizing that the phrase "Coast Guard Approved" carries a lot of weight in advertising and selling, he eventually traversed the paper work and "independent test" jungles to have one of his later mirrors so designated.

Mr. Murray's "Coast Guard Approved" signal mirror is the first plastic model, and the first buoyant model to receive this prestigious endorsement.

With an engineer's mind unsullied by years of "bucking the bureaucracy," Mr. Murray has persisted in developing ever better signal mirrors, and he had his newest model patented in 1998.

Why is Mr. Murray such a zealot about signal mirrors? While working as an Exxon engineer on the Caribbean island of Aruba, he was a privat pilot and frequently flew in searches for overdue fishermen. Noting how difficult it was to spot a small boat in a sea full of whitecaps, he bought many military surplus glass signal mirrors and distributed them to the fishermen.

Then, noting that they broke easily, corroded quickly, and sank if dropped overboard, his engineering mind and fabricating skills combined to develop a buoyant plastic model, sealed against corrosive media.

Now semi-retired, Mr. Murray continues to invent and patent a variety of engineering items, and also manufactures and sells a variety of signal mirrors.[Rescue Reflectors, Inc., 220 East Texas Avenue, Baytown, Texas 77520-5257; 281/427-5923]

There are other signal mirrors available on the market today, and some are quite good mass-production models of metal, glass or plastic. And there are, regrettably, some that are so poor in quality that they should even be banned as the "toy" in a box of Cracker Jacks ®!

So… what should our Coast Guard be doing about signal mirrors? Here are my recommendations:

- We could remind (inform is probably more accurate) the public that signal mirrors have unique qualities not common to medium- or high-tech signaling devices; no batteries to run down, no chemicals to deplete, no dependence upon very, but not completely, reliable electronics.

- We could conduct studies of existing signal mirrors, comparing their many features, and let the public know the various features of each.

(Mr. Murray has already made such a study, detailing 19(!) features of seven different commercially available models. Of course his models tend to rate the best in most if not all categories, but I believe it is not that his test are skewed, but rather that he is an engineer and a die-hard perfectionist. He continually works to produce a more perfect mirror, and if he found a competitor's to be better, he would change his to be even better.)

- We could conduct studies (enterprising Coast Guard Auxiliary Flotillas, as authorized by the National Board, would probably jump at the opportunity) to validate their practicality.

CDR Butler *is a retired Coast Officer.* ***o/s***

...Awash...

Motor Lifeboat ***Victory*** *CG52312 surf training at Station Yaquina Bay, Newport, Oregon in January 2002. Station Yaquina Bay spends the winter assisting the commercial crab fleet while transiting the rough Yaqunina Bay bar entrance.*

Photo by BM2 Whidden, USCG Station Yaquina Bay

Motor Lifeboat VICTORY:

Length: 52 feet	*Draft: 6 feet 1 inch*	*Max winds: 60 kts*
Weight: 60,000 lbs	*Max surf: 25 feet*	*Max towing: 150 ft and 750 gross tons*
Crew Size: 4	*Max seas: 35 feet*	*Engines: 2 Detroit Diesel 671, 180 hp*

A Gesture Returned

By LCDR W.L. Gerard Dutton, OBE., RD., RNR.

In 1873 the Royal National Lifeboat Institution, which celebrated its 175th Anniversary in 1999, arranged to have one of its 30-foot self-righting, self-bailing, pulling and sailing lifeboats shipped to the United States Life Saving Service. I saw this boat, which had been beautifully restored, in the Mariner's Museum at Newport News, VA in the mid sixties. From 1875 until 1956 all United States Coast Guard double-ended wooden lifeboats were direct decendents of this "GESTURE".

On demobilization from the Royal Navy following World War II, I joined the RNLI as an Inspector of Lifeboats retiring as Chief Inspector at the end of 1975. I am full of admiration for the monumental progress that the Institution has made in the operational and technical fields in the last two decades. Thinking back to my own time, three projects come to mind, namely: the introduction of faster lifeboats, the use of rubber inflatables, and the design and development of the "ARUN" class. My subject here is the fast afloat boat (FAB) project.

RNLI Photo

The FAB concept originated at the 9th International Life-Boat Conference held in Edinburgh, Scotland in 1963 at which I was an active participant. At this conference the United States delegation led by the Assistant Commandant of the Coast Guard, Vice Admiral McGregor Morrison, presented a paper on the 44-foot steel lifeboat, which had been introduced into their service the previous year. Captain Robert W. Witter was a member of that delegation as he had been very closely involved in the design and development of this exceptionally successful rescue craft. Bob Witter, who has been a good friend of mine since those days, was the Coast Guard Academy class of '51 and a graduate of the Massachusetts Institute of Technology (MIT).

I was very impressed with all I heard and read regarding this 14-knot, self-righting lifeboat and was anxious to evaluate a boat of this configuration in UK waters. Accordingly I recommended to the Boat and Construction Committee of the RNLI that a delegation be sent to the United States to look further into this possibility, since the Operations Committee had given the "project" its blessing. This was approved and as Chief Inspector, responsible for the operational and technical staff, I accompanied the delegation.

We were very warmly received by the Commandant of the Coast Guard in Washington and after calling on the British Ambassador and laying a wreath at President Kennedy's grave, we proceeded to the Coast Guard Yard at Curtis Bay, MD. Here we were fully briefed on the boats under construction and took part in sea trials, etc. This was a whole new concept of motor lifeboat and differed greatly from the 7-9 knot displacement boats we were then operating. On return to the UK the delegation was able to report to the Committee of Management that the Commandant had agreed to make a fully equipped boat available for evaluation and service in United Kingdom waters under the colours of the RNLI. This, indeed was an extremely generous "GESTURE" on the part of the USCG towards the British Service and the cause of saving lives at sea.

In a very short time I was back at the Yard by courtesy of the Commander, Coast Guard Activities Europe, Captain Chester I. Steele, who arranged for me to fly in a Coast Guard C-130 which was returning to Washington DC via the Azores and Bermuda.

At the Yard I was given every facility and was present at all the trials of the 28th boat off the line, which had been allocated to the RNLI. This boat was known as 44-001 throughout her life but the first British Built vessel was officially named "JOHN F.

KENNEDY".

After successful sea trials I accepted the boat on behalf of the RNLI and shipped her to the UK as deck cargo on a vessel from Baltimore. Immediately the boat arrived in home waters and extensive evaluation commenced, the boat being under the command of Staff Coxswain Sid. HILLS BEM, a naval veteran of WWII. To help with our evaluation, the Commandant kindly detailed Bob Witter, a gesture that I very much appreciated, as he was a "tower of strength" and "a mine of information".

Following appropriate dockyard trials, including a self-righting sequence, the boat circumnavigated the British Isles. During the course of these extended sea trials she was demonstrated at many lifeboat stations and introduced to the worst of our tidal waters and the Atlantic along the west coast of Ireland. This detailed evaluation confirmed the boat's capabilities in all respects.

In the British built boats some changes were made to the basic USCG design, the most significant of which was aimed at giving the boat a stronger righting moment. This was achieved by replacing the steel upper deck with an aluminum deck and raising the deck-head of the after-cabin two inches.

Brooke Marine of Lowestoft built the first boats in the UK at their yard on the River Waveney, hence the class name "WAVENEY". Twenty-one boats to this design were built in various yards.

Between the arrival of 44-001 in May 1964, through the end of 1998, boats of the "Waveney" class saved 2,799 lives round the coasts of the United Kingdom and Republic of Ireland. This indeed is a great tribute both to the Naval Architects of the USCG and the volunteer crews of the RNLI who manned the boats and proceeded on service on 7,008 occasions in the thirty-four and half years.

USCG File Photo

The 18th meeting of the International Lifeboat Federation (ILF) coincided with the celebration of the 175th anniversary of the RNLI in the summer of 1999. The ILF was originally known as the International Lifeboat Conference (ILBC) and this organization meets in different parts of the world every four years. It is through the ILF that the RNLI has developed such a close relationship with the USCG. Now in the United States, there is the Association For Rescue At Sea (AFRAS) which, like the RNLI, is a voluntary set-up dedicated to saving live at sea by providing financial assistance to voluntary air and sea rescue services in many parts of the world. AFRAS is an Associate member of ILF.

Bob Witter** is a member of AFRAS and he, along with their Chairman, **Admiral James S. Gracey**, a former Commandant of the Coast Guard, and **Mr. William D. Wilkinson**, Director Emeritus of the Mariner's Museum in Newport News, VA, represented AFRAS at the 18th meeting of the ILF. During this meeting there was a flotilla of lifeboats underway and the RNLI appointed **Bob Witter** the Honorary Coxswain of 44-001 for that great parade. How better can I close than by quoting the motto of our friends in the USCG – "SEMPER PARATUS". **o/s

Achievements of the USCG designed/UK built 44-foot steel, self-righting lifeboat of the "WAVENEY" class (1964 – 1998)

Operational Number	Boat's Name	Launched	Persons Rescued	Persons Assisted
44-001		301	109	80
44-002	John F. Kennedy	309	171	66
44-003	Khami	475	160	115
44-004	Faithful Forester	374	212	160
44-005	Margaret Graham	361	97	187
44-006	Arthur & Blanche Harris	298	120	27
44-007	Connel Elizabeth Cargill	308	165	71
44-008	Eric Seal (civil service no. 36)	153	45	17
44-009	Helen Turnbull	663	298	199
44-010	Thomas Forehead and Mary Rowse II	354	126	106
44-011	Augustine Courtauld	258	102	64
44-012	The White Rose of Yorkshire	304	61	54
44-013	Thomas James King	339	165	43
44-014	St. Patrick	252	93	109
44-015	Lady of Lancashire	250	99	65
44-016	Ralph and Joy Swann	374	204	74
44-017	Wavy Line	230	74	81
44-018	The Scout	252	10	112
44-019	Louis Marchesi of Round Table	506	264	100
44-020	John Fison	249	99	104
44-021	Barham	249	71	45
44-022	The William & Jane	149	54	22
	TOTALS:	7,008	2,799	1,901

Storm Warriors

By PA1 Amy J. Gaskill

One frigid November morning in 1889 a man on a horse delivered an urgent message to keeper Lawrence O. Lawson at Station Evanston, Ill. of the U.S. Life-Saving Service "There is a large vessel ashore off Fort Sheridan. Come!"

The thermometer read 22 degrees below zero but gale force winds made it seem far colder. The crest of the waves froze in mid air as they rose from the lake.

Keeper Lawson prepared his crew (composed entirely of students from Northwestern University which was co-located with the station) to rescue the men on board the distressed vessel off of Highland Park, Ill. which happened to be more than 10 miles from the station.

After loading their gear on the train, the crew reached the train stop closest to the rescue site, they hitched the horses to the surfboat to get them and their equipment in position to rescue the ships' crew before the steamer broke apart in the surf.

Once on scene, the life saving crew had to reassess because the grounded vessel was located off a steep 75-foot high bluff. Keeper Lawrence ordered a fire built on top of the bluff. The fire served a dual purpose; to keep the life-saving crew warm and to act as a beacon of hope for the 18 men trapped on the *Calumet.*

With the steamer sinking rapidly in the wild surf, Keeper Lawrence knew that the men would not last much longer. He called his student crew into action ordering them to attempt to reach the ship by breeches buoy rather than risk losing any of his men and the lifeboats in the surf that threatened to eat the last small strip of beach at the bottom of the bluff.

The Lyle gun was fired twice from the top of the bluff but because of the distance the projectile fell short both times. The crew knew they had to get the boats underway despite the danger to themselves. They remembered the motto passed down by former crew mates "you have to go out but you don't have to come back." (Today's Coast Guard does not live by the same motto. Safety is extremely important for the crew as well as the victim).

But getting to the bottom of the hill was almost too hard to endure as thick brush needed to be cut to get the boat through. Soldiers from Fort Sheridan and civilians from the nearby town worked side by side with the life-saving crew in the harsh winter storm to get to the bottom.

Once on the narrow stretch of beach, they found they had to drag the 700-pound surfboat, without the use of their horses, to a closer launch site. As they drug it headlong into the wind, the men were waist-deep in the icy waters. The breakers were so high that the boat filled three times. In spite of the fact that they were in constant battle against the waves smashing into the side of the boat, the men kept moving to prevent the boat from being dashed to pieces by these same waves.

The crew was finally in position to launch. According to the 1890 U.S. Lifesaving Service Annual Report; "In crossing the bar the crew met an immense breaker which nearly threw the boat end over end. The shock of its impact was so great it almost threw Keeper Lawson overboard from his post at the steering oar. Before he could recover, a second wave dashed over the boat and filled it to the thwarts. This made the boat almost unmanageable." The men had to row and bail simultaneously.

The Evanston surfmen broke through the heaviest surf line. "Flying spray from every wave crest left a glaze of ice on every object it struck, the men's clothing being covered with ice and even the oars became ice encrusted."

"These brave young college students were not weather-hardened fishermen, but they were not new to the harshness of a Great Lake's winter."

The surfmen finally made it to the *Calumet* where a grateful captain said "I never thought you'd make it." But because the surfboat could only hold six victims at a time, the seemingly tireless young men had to make the trip through the breakers three times.

When it was all over everyone was saved from the angry waters that day and the young surfmen at the Evanston, Ill. Life-Saving Station received the Gold-Lifesaving Medal for their "extraordinary courage and heroism."

Not more than 20 years before this rescue, in 1870-1871 the Great Lakes were hit by severe storms that resulted in 1,167

** Some excerpts taken from "A Legacy: The United States Life-Saving Service" by **Dennis L. Noble** and "The U.S. Life-Saving Service: Heroes, Rescues and Architecture of the Early Coast Guard" by **Ralph Shanks Wick York** and **Lisa Woo Shanks**, editor.*
*** Search and Rescue into the future portions were taken from information on the Coast Guard's Search and Rescue Home Page on the Internet. (Rescue for the next century by the National Search and Rescue Committee's Research and Development Working Group).*

disasters where 214 people lost their lives. This large number of deaths was later directly attributed to the then experimental Life-Saving Service. According to the Annual Report for 1876 "The loss of life was largely due to the lack of proper attention to duty on the part of the employees of the Service and the inefficient conditions of the boats and apparatus."

Driven by the appalling number of deaths and the fact that seasonal surfmen at alternate stations was inadequate, on April 20, 1871 Congress authorized $200,000 for the Secretary of the Treasury to "employ" crews of experienced surfmen. This unofficially marked the birth of the United States Life-Saving Service as an agency of the Revenue-Marine.

The concept of search and rescue was not a new idea when it was adopted in the United States; it's actual heritage is linked to China where the world's first organized maritime life-saving agency began in 1708 called the Chinkiang "Association for the Saving of Life."

England adopted these Chinese methods of saving lives at sea not long after the Chinese people put their rescue teams together. When the founding fathers established the United States of America they saw the need for such a service and the first American life-saving group was established by the Humane Society of the Commonwealth of Massachusetts in Boston in 1786. The purpose was "for the recovery of persons who meet with such accidents as to produce in them the appearance of death and for promoting the cause humanity, by pursuing such means. From time to time, as shall have for their object the preservation of human life and the alleviation of its miseries."

By 1854 life-saving stations sprang up all along the Great Lakes and were made up of small structures operated solely by volunteers. These units were soon vandalized and neglected. To secure the economic development of the region it became obvious that real life-saving stations were necessary. The Life-Saving Service finally recognized the importance of Great Lakes' shipping and completed a chain of fully manned and equipped stations.

Some regions of the Great Lakes were completely isolated. But few stations were as lonely as stations in Michigan's Upper Peninsula along eastern Lake Superior's "Grave-yard coast." At these first organized stations, in the 1870's, you could find Mosquitoes, black flies, extreme isolation, frigid weather, cutting winds and all for the low pay of only $3 a duty day.

Not only was the pay poor but the life-saving equipment required extreme manpower to use it. The boats were either a 700-pound to 1,000-pound surfboat pulled by six surfmen with 12 to 18-foot oars, or a two to four ton self-bailing, self-righting lifeboat. The surfboat could be pulled on a cart by horse or manpower to the beach closest to the wreck then launched into the surf. The lifeboat, patterned after an English design, was used in the heaviest of weather and was looked upon by the crews as having "supernatural" qualities because they would take it out when the tugs and steam-craft refused to go.

Too many times the weather was so rough the keepers knew they would lose their crew if they sent out the surfboats. Grounded vessels during heavy storms were perfect opportunities for the breeches buoy or life car method of life saving. Crews would send a line to the ship using a cannon-like device (Lyle gun). This line was then tied off to the ship and passed through a pulley system. Through this system a life car, resembling a primitive submarine, was sent across in which 11 people would be pulled to safety. The crews on board the ship and on shore had to work fast because once the hatch was closed on the car the people inside only had three minutes of air.

Another ship to shore rescue device was the breeches buoy. Using the same concept as the life car rescue, but instead a life ring with canvas pants sewn to the bottom was attached to the line. Individuals would slip into the pants then were pulled to shore using the pulley system. This was much easier than the bulky life car, but could only be used if there was time to rescue the victims one at a time.

A lot has changed in the 111 years since the Evanston crew pulled those 18 thankful men from their wrecked ship. Because the vessels in distress no longer rely solely on steam or sail for their power, look-outs don't have to walk the beaches with flares attached to their belts to fire when they "see" a vessel crashed on the rocks or beaches.

Rescue crews now rely on boaters to call in a mayday on the radio or they receive a message from a satellite that relayed a water-activated distress signal. Instead of rolling the breeches buoy out of the boathouse and hitching it to the horses, they now race the state-of-the-art 47-foot rescue boat out of the harbor or send up a helicopter that can be on scene in a matter of minutes.

The rescue crew relies on many pieces of information and types of equipment to get them to the people who need assistance. Keeping this equipment accurate and most beneficial, the Research and Development Center, (R&D Center) in Groton, Conn. is always improving upon the devices that are in use today. Target drift (where the distressed boat has moved since the call came in because of wind and current) has always been a problem in search planning. Technological devices such as the Global Positioning System (GPS) and satellite communications (SATCOM) have provided the means by which planners can now study the movement of search objects in detail.

The R&D Center has just finished a prototype of an air deployable Self-Locating Datum Marker Buoy (SLDMB) that makes use of a GPS and SATCOM. One of the concern with this buoy is that it follow the near surface currents instead of the currents that are as deep as a larger distressed boat would encounter. However, the people the Coast Guard encounters most are the small boat and people in the water which do float closer to the surface. This make the buoy very valuable.

With computer technology changing almost daily, keeping it updated is extremely difficult. Not only does the R&D Center have to make sure the individual systems can integrate with current computer systems, they have to ensure the systems will grow with future technology while keeping in mind the importance of responding faster to people in distress on the water.

There are several tools that play a role in the success of the Coast Guard's Search and Rescue plan. The National Distress System (NDS), a network of VHF-FM radio sites, is a standard element of the U.S. SAR system. The goal for this radio system is to have 100 percent continuous coverage to

receive a one-watt signal out to 20 nautical miles around the U.S. Atlantic, Pacific, Gulf of Mexico and Great Lakes coasts.

The VHF-FM radio is the primary distress-reporting piece of equipment for U.S. coastal water. Though the cellular phone is fast becoming a reliable secondary tool, it does not offer the benefits associated with digital selective calling nor are they detectable by radio direction finding (DF) equipment found on every Coast Guard search and rescue platform. DF equipment has been extremely useful in past searches. The boater is often too shaken to know precisely where they are located. If they just activate the microphone this equipment can triangulate through the radio sites that pick up the signal to the person's location.

Another important device is the 406 MHz Emergency Position-Indicating Radio Beacon (EPIRB) that is used mainly in open-water environments (i.e. oceans and larger bodies of water). Although it's carriage is mandatory for certain commercial vessels and recommended for use by all offshore operators, only about 70 percent of U.S. beacons are properly registered. The information provided on the registration form is not only invaluable in helping to respond to actual distress situations, it also helps to mitigate false alarm response costs (saving tax dollars).

Command and control is probably one of the most important factors of a successful search operation. It is important for the human element (the controller) to be able to process and evaluate an initial distress call to the point of appropriate action within five minutes. For the controller to have the necessary qualifications to make the right decisions, it is important to ensure the controller has completed residential search and rescue planner training at the National Search and Rescue School.

To round out the standard support SAR program goals, the Automated Mutual-assistance Vessel Rescue (AMVER) System has been used widely in high-seas incidents. This system acts as an air traffic controller on the ocean. Once a distress signal is received, a picture of the area concerned comes up on a computer screen showing AMVER registered vessels in the area. If one is close to the signal it is asked to investigate, thereby getting assistance to the distressed boater faster and safer than if the Coast Guard were to send one of its search and rescue units. The numbers of these volunteer good-Samaritan ships is about 12,000 and the number of people they have saved has been 200-500 annually.

These are not the only systems in place today which support the Coast Guard's main mission.

To help ensure national SAR standardization a group of six federal agencies form a committee called the National Search and Rescue Committee (NSARC). These agencies are the Department of Defense, Department of Transportation, Department of Commerce, National Aeronautical and Space Administration (NASA) the Federal Communications Commission and the Department of the Interior.

NSARC is a federal interagency commitee chartered to oversee the National Search and Rescue Plan and to coordinate development of interagency policies and positions on SAR matters. This Committee interfaces with other national and international agencies involved with emergency services and provides a forum for the coordinated development of compatible procedures and equipment to increase the effectiveness of of SAR operations.

NSARC sponsors a Research and Development Working Group. Like any other business, SAR needs to capitalize on the evolution of technology. The R&D Working Group works toward maximizing life saving capabilities on a cost- effective basis.

One of the Working Group's tasks has been to project SAR technology 100 years into the future. "This project was meant to exercise the readers imagination, through fact and imagination. It was a powerful tool in stimulating innovative thinking which provides guidance in Research and Development planning," said Dan Lemon, Chief, Coordination Division at Coast Guard Headquarters in Washington, D.C.

This project found that because of the availability of greater global search capabilities in the future, SAR will take on even more of an international flavor. Technology will be so advanced that communications devices, controlled by voice recognition, will be offered to all persons on a voluntary basis, provided at no cost to the individual.

This personal monitoring device will transmit the location and medical conditions of the person wearing it to a centralized database. In a distress situation the person will be able to trigger a distress message with their location (accurate to 30 centimeters) through a constellation of low orbiting satellites. For privacy, the individual can turn off their remote monitor, which will reset after a certain amount of time.

Short-range recovery operations will depend primarily on jet propelled hover aircraft capable of speeds higher than the speed of sound. Long range recovery will utilize rocket-powered aircraft that can reach most domestic scenes in minutes and can brake at the distress scene and hover.

An International Consortium of satellite systems will conduct searches for people in distress. Ground and aircraft will augment only when necessary. False alarms will be mitigated by the design of the communicator and stiff fines will be imposed.

Survivors will be extracted using columns of air to lift them directly into the rescue vehicle. These vehicles will employ momentum wheels and jet forces to travel at high speeds and will be able to hover over the disaster scene.

Where people are trapped inside structures, high powered lasers will aid in cutting through the construction materials, collapsible/expandable structures will be put in place to support the overhead debris and robots will pull the victims to safety.

Future technology is still a big question mark. No one really knows what will be available 100 years from now. The Coast Guard can only hope that with current trends these ideas are not too far off the mark.

How would Keeper Lawrence O. Lawson and his student-crew from Life-Saving Station Evanston, Ill. act if they were to travel to 2096 to rescue the *Calumet* crew using the tools of the future?

PA1 Gaskill *is a Public Affairs Specialist at Group/Marine Safety Office Portlan, Oregon.* ***o/s***

Mass Rescue Operations

By LT Mick Mulligan

Mass Rescue Operation (MRO) is a term receiving a lot of attention lately, though many aren't really sure of the real definition. According to the International Maritime Organization, a Mass Rescue Operation is a SAR service characterized by need for immediate assistance to large numbers of persons in distress, such that the capabilities normally available to SAR authorities are inadequate. An MRO incident can be caused by natural or manmade events. Careful and comprehensive planning, preparation and training are essential to being able to carry out an MRO successfully.

A MRO in port or offshore will overwhelm our resources, and the sheer number of persons in distress may also be subjected to conditions and factors that may make their rescue even more challenging. In recent history there are three notable examples where the Coast Guard's efforts led to a successful MRO. In 1980 we successfully assisted in the rescue of 488 individuals from a fire on the Dutch cruise ship Prinsendam in Alaskan waters; in 1999 Hurricane Floyd taxed local, State, Coast Guard, and other Federal Agencies resources; and, we can all recall the graphic scenes from the World Trade Center tragedy in 2001 and the ensuing evacuation of lower Manhattan. Each of these events shows the need to plan for these low probability high consequence events, especially given our "new normalcy" and having now to imagine the unimaginable.

The Coast Guard has taken MRO seriously and the outcome of this is 22 billets set aside to work this issue Coast Guard-wide. Four billets were allocated to Coast Guard Headquarters (one of those to the Office of Search and Rescue (G-OPR) – a billet filled by the author) and 18 were allocated to the field. With that said, G-OPR feels a sense of urgency to get MRO decision-making tools to the SAR operators at the "tip of the spear" in our District Rescue Coordination Centers and Group/Activity/Section Command Centers.

To address this urgency, G-OPR conducted a development workshop at CG Training Center Yorktown in November, 2002, consisting of planners, SAR controllers, SAR School Instructors, Strike Team members, and CGHQ program specialists, to discuss ideas of how to best develop a MRO checklist and what it should contain. From the ideas developed at that workshop, a "Tiger Team" met at a follow-on meeting in early February 2003 to develop a draft MRO checklist design, which has been sent to District offices CG-wide for review and comment.

Our goal is simple…to create a standard and concise MRO checklist that can be tailored for every port and consequence and offshore area of responsibility. If you get the opportunity, please provide constructive feedback to help us make that happen.

LT Mulligan** is assigned to the Policy Division in the Office of Search and Rescue. **o/s

...punching through!

*Motor Lifeboat **Victory** CG52312 surf training at Station Yaquina Bay, Newport, Oregon in January 2002. Station Yaqunia Bay conducts on average 400-500 cases each year.*

Photo provided by BM2 Whidden, USCG Station Yaquina Bay

SEARCH AND RESCUE AWARDS

*The **Rescue Coordination Center Controller** and **Group SAR Controller of the year awards** are awarded annually to Coast Guard SAR planners that demonstrated the highest caliber of search and rescue expertise in the areas of investigation, search planning and search coordination. Selections are made based on performance during a single case with emphasis on: investigation and planning efforts, resource management, difficulties encountered and surmounted, and results of search planning efforts.*

RCC CONTROLLER OF THE YEAR AWARD

2001

PACIFIC AREA/ELEVENTH DISTRICT COMMAND CENTER

The Pacific Area/Eleventh District Command Center Team (Pcc) are commended for demonstrating exceptional judgment and excellent investigative, search planning and effort allocation skills, while serving as SAR Mission Coordinator (SMC) from March 29 – April 4, 2001, during the search for a 60-foot fishing vessel that had 149 stranded migrants onboard near an isolated Costa Rican island.

The 60- foot fishing vessel FORTUNA had been disabled for 14 days with 149 persons on board by the time the Pcc was notified. Pcc controllers immediately went to work formulating possible scenarios and reasonable search areas. With an unusually large number of people on board a small vessel, the controllers believed that the FORTUNA was likely involved in illegal migrant smuggling, but knew that Costa Rica was an unlikely destination for a migrant offload.

Later that morning, Pcc controllers learned through thorough investigation that the FORTUNA was about 35 miles northeast of Isla del Cocos. Throughout the day on 29 March, Pcc controllers searched for available resources in the eastern Pacific area. The closest Coast Guard air station, Clearwater, was 1,300 miles from the area. Pcc took Tactical Control (TACON) of three U.S. Navy P-3 aircraft, and two T-AGOS class ships, USNS STALWART and USNS INDOMITABLE. The U.S. Navy P-3s conducted two sorties, while the USNS INDOMITABLE arrived in the search area. Command Center watchstanders worked with JIATF East and Atlantic Area to delay USCGC DALLAS's northbound transit through the Panama Canal so that the cutter would be available to provide humanitarian assistance if necessary.

On March 30, a Navy P-3 located the fishing vessel FORTUNA about 12 miles northeast of the remote sparsely inhabited Costa Rican Isla del Coco. USNS INDOMITABLE arrived on scene and discovered 149 people aboard the FORTUNA. The migrants reported that they had departed Ecuador on March 9th and their engine had failed on March 24th. At the time the USNS INDOMITABLE arrived on scene, the passengers had been without food and water for three days. The vessel's crew had departed on another vessel, leaving the 149 migrants stranded.

The USNS INDOMITABLE, and later USS HALYBURTON, provided humanitarian assistance to the rescued migrants. HALYBURTON took the migrants onboard and towed FORTUNA toward Manta, Ecuador. During medical screening of the migrants, HALYBURTON's corpsman discovered one person with third degree burns on his left hand. Concerned about a possible severe infection, Pcc instructed the USS HALYBURTON to cut the tow of FORTUNA and proceeded into Manta as quickly as possible, delivering the burned migrant to medical personnel ashore. All migrants aboard FORTUNA were safely returned to Manta, Ecuador by USS HALYBURTON on April 3rd.

This SAR case required extensive multi-agency and international coordination. The search spanned two days covering 3,600 square nautical miles of open ocean using three Navy P-3 aircraft, two USNS ships, and one frigate. The professionalism, dedication, and aggressive SAR coordination exhibited by the Pacific Area/Eleventh District Command Center personnel are in keeping with the highest traditions of the United States Coast Guard, and directly resulted in the saving of 149 lives.

JAMES C. OLSON
Rear Admiral, U. S. Coast Guard
Director of Operations Policy

GROUP SAR CONTROLLER OF THE YEAR AWARD

2001

QMC HUTCHISON AND BM1 LONG

Chief Quartermaster Richard Hutchinson and Boatswains Mate First Class Eric Long of Coast Guard Group New Orleans are commended for demonstrating exceptional judgment and excellent investigative, search planning and effort allocation skills, while serving as SAR Controllers for a case involving an overdue fisherman. The fisherman was located and safely recovered after being ejected from his vessel and spending 30 hours partially submerged in mud with a broken back.

The fisherman departed for a day fishing trip from Suburban Club Marina in Point A La Hache, Louisiana during the morning of 17 June 2001. At 2100 on June 17th, Station New Orleans received a report of an overdue fisherman who had launched from the Suburban Club Marina. The reporting source was unable to provide a vessel description or departure time, and could not identify the type of fish the owner targeted, his favorite fishing locations or the scheduled time of return. Station New Orleans alerted the Group New Orleans Operations Center.

With this limited information, Group New Orleans immediately assumed SMC, and tasked Station New Orleans with searching the dozens of bayous, canals and cuts in the immediate vicinity of the marina. Throughout the night, all attempts to gather amplifying information were unsuccessful.

At first light, Station New Orleans was tasked with searching all navigable waterways within a six nautical mile radius of the marina. Louisiana Wildlife and Fisheries along with Plaquemines Parish Sheriff's Office marine units were asked to assist, as the search area was too large for Coast Guard surface assets to effectively search alone. Additionally, Air Station New Orleans was tasked to conduct a search based purely on Chief Petty Officer Hutchinson's and Petty Officer Long's local knowledge of popular fishing spots in the area. While conducting its initial sortie, an Air Station New Orleans helicopter located the overdue vessel with no persons aboard. Station New Orleans' rigid-hulled inflatable (RHI) boat was vectored to the boat's location as the helicopter continued its search. After arriving on scene, station personnel aboard the RHI reported that the vessel's ignition switch was on, the throttles were engaged full ahead, the battery and cooler were overturned, and there was a black scuff mark on the starboard bow of the vessel. At this point, the focus of the search effort shifted to looking for a person in the water.

A second Air Station New Orleans helicopter sortie was unsuccessful in locating a person in the water. A third Air Station New Orleans aircraft was tasked with continuing the search, and a helicopter from the Jefferson Parish Sheriff's Office was tasked to fly at a lower altitude in the vicinity where the vessel was initially located. The Sheriff's helicopter located a male on a mud bank fitting the description of the overdue fisherman. The Coast Guard helicopter arrived on scene and lowered the rescue swimmer to assess the condition of the fisherman.

The fisherman, still alive, was found with the lower half of his body buried in the mud and his cap over his face. The rescue swimmer reported that the fisherman was in shock, suffering from hypothermia, and had numbness in his legs, which he was unable to move. Additionally, he was experiencing severe pain throughout his upper body and back. The fisherman was transported to a local medical facility by a Coast Guard helicopter in stable condition.

The professional investigative efforts, use of all available resources, search planning skills, and aggressive SAR coordination by Chief Petty Officer Hutchinson and Petty Officer Long are in keeping with the highest traditions of the United States Coast Guard, and directly resulted in saving this fisherman's life.

JAMES C. OLSON
Rear Admiral, U. S. Coast Guard
Director of Operations Policy

ASSOCIATION FOR RESCUE AT SEA (AFRAS) AWARDS

*The **Gold Medal Award** is give by AFRAS annually to an enlisted member of the U.S. Coast Guard who is involved in a rescue of life at sea, and who demontrates uniquely distinguishable heroic actions. The **Silver Medal Award** is given by AFRAS annually to members of the Coast Guard Auxiliary who meet the same criteria. AFRAS has bestowed the Gold Medal Award for 2001 on BM1 Christopher Damelio of Coast Guard Station Cape Disappointment and AST1 Eric Forslund of Coast Guard Air Station Astoria. The winner of the Silver Medal Award is Auxiliarist Henry Chandler, Vice Flotilla Commander of 4-10 of Baton Rouge, Louisiana. The skills, valor, and judgement of Petty Officer Damelio, Petty Officer Forslund, and Auxiliarist Chandler directly resulted in the saving of five lives. The Gold and Silver Medal Awards were presentd at a ceremony hosted by the Transportation and Infrastructure Committee on Capitol Hill in November 2002.*

AFRAS Gold Medal Award

Petty Officer Christopher Damelio earned the Gold Medal Award for his heroic effors on the afternoon of September 2, 2001 while serving as surfmen aboard Motor Lifeboat (MLB) 47248 dispatched from Station Cape Disappointment. He responded to a distress call from four occupants of a 22-foot pleasure craft that became overwhelmed by the churning surf of the Columbia River.

Arriving on scene, PO Damelio found three of the four perosns clinging to the 22-foot pleasure craft that had been overturned in the 15 to 20-foot breaking surf. The fourth person had been separated from the vessel by the violently raging sea. PO Damelio skillfully maneuvered the motor lifeboat through incredibly rough and breaking surf to reach the overturned vessel. He then directed his crew to retrieve all four persons with the assistance of a Coast Guard rescue swimmer that had been deployed by CG 6008, a Coast Guard HH60J helicopter, that had also responded to assist the distressed vessel.

Although all four persons were recovered alive, one individual later passed away due to sustained injuries.

AFRAS Gold Medal Award

Petty Officer Eric Forslund earned the Gold Medal Award for his heroic ef forts on the afternoon of September 2, 2001 while serving as rescue swimmer aboard CG Helicopter 6008, an HH60 J from Air Station Astoria. CG 6008 responded to a distress call from four occupants of a 22-foot pleasure craft that became overwhelmed by the churning surf of the Columbia River (same case as PO Damelio).

Within seconds of witnessing a devastating wall of water wash one of the four persons clinging to the overturned hull of the 22-foot pleasure craft under water, PO Forslund harnessed and deployed from CG 6008. He swam approximatelly 20 feet through the massive breaking waves, found the person, and then executed a 30-yard cross chest carry to CG 47248.

During the 10 minutes that followed, PO Forslund swam back and forth through the breaking surf, exertign extraordinary physical effort in carrying the remaining three survivors to CG47248.

Although all four persons were recovered alive, one individual later passed away due to sustained injuries.

AFRAS Silver Medal Award FIRST EVER!

Auxiliarist Henry Chandler, earned the first ever AFRAS Silver Medal Award for heroic action in effecting a rescue on July 13, 2000 at the risk to his own life.

While chaperoning a group of children on a boating trip at Lake Tangipahoa, Mississippi, he observed a van slide down an embankment and into the lake. He immediately raced his boat to the location and instructed the other adults onboard about the actions to be taken and to take the helm. Auxiliarist Chandler then dove into the water and observed an elderly couple sitting in the van, frozen in terror. He quickly assisted the driver out of the van. As the driver was pulled out, the van suddenly sank, taking down both Auxiliarist Chandler and the passenger.

Auxiliarist Chandler broke the surface only for a moment to get a breath of air and then quickly dove 20-30 feet to rescue the passenger still trapped inside the van.

Other Nominees:

AST2 Reese Boxwell, Air Station Houston
MK2 Bradley Collins, Station Chetco River
BM2 Mark Dilenge, Station Chetco River
AST2 Eric Biehn, Air Station North Bend
AST2 Jason Bunch, Air Station Kodiak
AST2 Patrick Roach, Air Station Kodiak
AST2 Kristina Dewinter, Air Station Sitka

Don't miss NASAR's 31st annual Conference and Exhibition!

What do **Personal Locator Beacons**, **"Surf Rescue,"** and the **Columbia Space Shuttle Disaster** all have in common? They are all workshop topics at NASAR's annual conference. This year's event is shaping up to be the biggest and best in the organizations history. Featured presenters will include notables such as tracking expert, Ab Taylor, and SAR dog guru, Sandy Bryson.

Events include:
Exhibition ~ Preconference Courses ~ Educational Tracks ~ 2003 Photo Contest

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email: conference@nasar.org

The Hotel:
John Ascuaga's Nugget
1100 Nugget Avenue
Sparks, NV 89432-0797
Phone: 800-648-1177

SAR*SCENE* 2003
Kingston, Ontario, October 15-18, 2003

The National Search and Rescue Secretariat with the help of the Ontario Provincial Police and the Ontario Search and Rescue Volunteer Association will present the 12th Annual Search and Rescue Workshop.

SAR*SCENE* 2003 provides a forum for search and rescue (SAR) personel to share expertise and experiences and to find out about new SAR technologies. Over 600 participants are expected from air, land and marine organizations across Canada (Department of National Defence, Royal Canadian Mounted Police, Environment Canada, Department of Fisheries and Oceans (Canadian Coast Guard), Canadian Heritage (Parks Canada), provincial and municipal governements, and numerous volunteer organizations. SAR organizations from other countries will also attend.

SAR*SCENE* GAMES
October 15, 2003

WORKSHOP
October 16-19, 2003

Presentations
Demonstrations
Training Sessions
&
Trade Show

FOR MORE INFORMATION, PLEASE CONTACT:

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SAR*SCENE* 2003 Registrar
National Search and Rescue Secretariat
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U. S. COAST GUARD SAR PROGRAM INFORMATION

ON THE WEB

The SAR Watch - Office of Search and Rescue Newsletter (monthly)

The SAR Watch is a monthly newsletter designed to provide accurate, up-to-date highlights about important SAR program initiatives, along with other news and announcements of interest to our community of SAR professionals. From time to time, the newsletter will also include practical material for use by field SAR personnel. The SAR Watch compliments On Scene by providing a means to pass time sensivitive information in a less formal format.
The SAR Watch is accessable via the SAR home page via a link on the left side navigation bar.

SAR Publications:

SAR publications currently available via the SAR Program's web site include:

U.S. National SAR Plan (NSP) - The federal plan for coordinating civil search and rescue services to meet domestic needs and international commitments.

U.S. National Search and Rescue Supplement (NSS) to the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual - Provides guidance to federal agencies concerning implementation of the NSP and builds on the baseline established by the IAMSAR Manual. The NSS provides guidance to all federal forces, military and civilian, that support civil search and rescue operations.

U.S. Coast Guard Addendum (CGADD) to the U.S. National SAR Supplement - Establishes policy, guidelines, procedures and general information for Coast Guard use in search and rescue operations. The CGADD both compliments and supplements the NSS and IAMSAR.

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United States Coast Guard Search and Rescue Summary Statistics 1964 thru 2002

Fiscal Year	Cases	Responses	Sorties	Lives Saved	Lives Lost After CG Notification	Lives Lost Before CG Notification	Lives Lost Total	Lives Unaccounted for
1964	-	41,525	-	2,932	-	-	-	-
1965	-	38,586	-	1,984	-	-	-	-
1966	-	43,366	-	2,629	-	-	-	-
1967	-	42,225	-	3,028	-	-	-	-
1968	-	46,922	-	2,434	-	-	-	-
1969	-	48,720	-	2,050	-	-	-	-
1970	44,975	52,183	62,286	4,135	1,783	*	1,783	-
1971	48,894	56,181	68,251	2,423	1,324	*	1,324	-
1972	51,539	60,328	72,306	2,633	1,389	*	1,389	-
1973	55,107	64,182	77,209	2,918	1,474	*	1,474	-
1974	59,335	67,692	79,950	2,751	1,509	*	1,509	-
1975	62,334	70,551	81,561	3,024	1,254	*	1,254	-
1976	67,179	75,069	87,807	2,995	1,112	*	1,112	-
1977	74,637	82,601	96,021	4,121	1,458	*	1,458	-
1978	77,954	86,222	100,262	4,386	1,556	*	1,556	-
1979	72,517	79,858	92,117	5,747	949	672	1,621	-
1980	73,345	81,476	93,726	6,868	1,235	586	1,821	-
1981	71,781	78,951	91,432	6,339	1,080	637	1,717	-
1982	68,552	75,717	87,715	5,675	1,359	446	1,805	-
1983	63,980	72,585	85,796	5,946	1,121	640	1,761	-
1984	57,431	66,073	80,698	5,645	1,148	319	1,467	-
1985	60,775	70,237	88,449	6,497	1,076	259	1,335	-
1986	51,765	68,805	89,318	4,307	475	180	655	-
1987	55,998	66,656	87,211	5,785	1,015	576	1,591	-
1988	54,199	63,446	83,616	4,307	583	449	1,032	-
1989	52,776	64,027	81,862	3,981	461	646	1,107	-
1990	53,097	64,971	84,033	4,407	463	622	1,085	-
1991	52,782	66,409	84,872	5,465	368	748	1,116	-
1992	53,294	69,856	88,388	5,543	399	540	939	-
1993	53,026	69,784	88,147	5,826	415	800	1,215	-
1994	53,899	70,337	108,758	7,889	338	593	931	-
1995	49,704	63,679	110,267	4,453	304	468	772	-
1996	43,553	55,710	98,423	5,047	367	611	978	-
1997	41,096	52,141	91,722	3,897	290	454	744	-
1998	37,218	46,602	83,307	3,194	188	418	606	-
1999	39,844	50,622	89,635	3,743	180	353	533	-
2000	40,214	48,226	57,697	3,400	239	779	1018	304
2001	39,457	49,502	59,015	4,010	297	413	710	515
2002	36,763	46,643	54,609	3,661	236	399	635	339

Notes:
* Lives Lost After/Before CG Notification not separately tracked prior to 1979; all lives lost recorded as a single data point
- Data not available
1978 - San Diego Air Disaster included in Lives Lost
1981 - *Prinsendam* included in Lives Saved (520 lives saved)
1982 - Florida Air Case, Washington DC (LS/LL?)
1982 - World Airways DC10, Boston MA (LS/LL?)
1983 - Korean Airlines 007 included in Lives Lost Before (265 lives lost)
1984 - Detroit Air Crash included in Lives Lost Before (LLB?)
1992 - AMIO: Lives Saved does NOT include approx. 12,000 migrant lives saved
1994 - AMIO: Lives Saved does NOT include 15,322 migrant lives saved
2000 - Egypt Air (217) & Alaska Air (88) crashes included in Lives Lost Before (total 305)
2001 – 173 Lives Unaccounted For from two large AMIO incidents
2002 – 439 lives in 7 large incidents included in Lives Saved; 105 lives in 3 large incidents included in Lives Unaccounted For

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When you have finished reading your copy of On Scene, please take the opportunity to share it with someone interested in Search and Rescue. *o/s*

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B		5	25	1	25	10	10	10	3	2	2	10	5	25	5	5		20	1		5	5		1	5	2
C	5	5			2	1	1	1	5		3	1	1	8	1	3	1			1	1	1	1	1	1	6
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F/V GALAXY FIRE ON THE BERING SEA

Flames shoot from the Galaxy as it burns and drifts off St. Paul Island, Alaska, in the Bering Sea Oct 20.

Fire spreads quickly through the Galaxy.

Fellow fishing vessels from the close-knit Alaskan fisheries community aid in the rescue.

Photos by AST3 Jason Quinn. Airsta Kodiak