United States Coast Guard Auxiliary -- America's Volunteer Lifesavers

Up Top In Operations

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Rescue 21 Update

By: Edwin Kroeker, DVC-OT
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The Coast Guard's area of responsibility includes 95,000 miles of coastline in the continental United States, Alaska, Hawaii, Guam, and Puerto Rico, plus America's navigable rivers and lakes. The Coast Guard's SAR response involves multi-mission stations, cutters (ships), aircraft, and boats linked by communications networks. The Coast Guard is a world-class rescue organization, but its effectiveness is limited by the system it uses to monitor radio distress calls.

Rescue 21 (see www.uscg.mil/rescue21/home) is an advanced search and rescue communications system that helps the Coast Guard more effectively locate and assist boaters in distress. The new system — fully operational by September 2006 — replaces the Coast Guard's current communications system, the National Distress Response System (NDRS), built in the 1970s. . Among other capabilities, Rescue 21 enhances line-of-sight coverage, increases position localization on a VHF-FM transmission, increases the number of voice and data channels available to the Coast Guard from one to six, and improves communications and information sharing between Coast Guard units and their federal, state, and local partners ("interoperability").

General Dynamic Decision Systems (www.gdds.com/rescue21), under a $611 million contract, will act as systems integrator to provide system design, implementation, and maintenance for the modernization project. General Dynamics will deploy the new system to field-test its operational capabilities in the Atlantic City, N.J., area, and the Eastern Shore region of Maryland during 2003. The next deployments will be in St. Petersburg, Fla., Mobile, Ala., and adjacent regions in Seattle and Port Angeles, Wash. By Sept. 30, 2006 the new system will be installed across the U.S.

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SAVING LIVES IN THE 21st CENTURY

Rescue-21 is based on the premise that existing VHF radios will remain the most common distress communication path from recreational boaters. At the same time, the system adds monitoring for the digital selective calling (DSC) distress calls provided by newer radios. DSC radio systems report their position digitally based on a GPS unit providing data to the radio. Traditional VHF radios do not provide position data, so Rescue-21 adds a universally-available direction finding capability.

Part of the massive upgrade is evaluation of where high tower sites are needed, reducing the current 14% coastline coverage gap to fewer than 2%. All remote sites are digitally connected, and include multi-channel frequency-

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New BC-OTT Appointed

By: Edwin Kroeker, DVC-OT-ekroeker2seaqueue.com

The Telecommunications Division staff is now complete. John P. Dowbachuk joins the division as Branch Chief, Technical (BC-OTT).

John has been an Auxiliary member since 1995, and has served his flotilla as VFC and FC as well as in several appointed positions. He is crew qualified, and has completed AUXCOM and AUXPAT. He has served his community as a volunteer firefighter and EMT, and has participated in many aspects of civil emergency management. His professional experience includes eleven years in the wireless telecommunications industry, where his projects have ranged from common carrier to public safety, and have encompassed multiple technical disciplines. His amateur radio callsign is N2XCO, and along with relevant professional FCC licenses, he also holds an FAA private pilot certificate.

The Telecommunications Division has the following staff:

Division Chief
Edwin (Ned) Kroeker,
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Branch Chief, Utilization
Liaison with other organizations, nets, training issues
Joseph Cirone,
jpcirone@warwick.net
Branch Chief, Technical
Frequency assistance, repeaters, non-marine modifications
John Dowbachuk,
dowb1@comcast.net

In addition to professional and amateur radio communications backgrounds, all of the staff are active in operations. Ned is a Qualification Examiner, Joe is finishing his "NE" certification representing a significant Aids to Navigation function, and John is a pilot (albeit inactive). These backgrounds should help in providing communications support for all Auxiliary operations programs.

Using Non-Marine Frequencies

By: John Dowbachuk, BC-OTT
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In these days of federal spectrum re-allocation, we can't take any radio frequency usage for granted.

It is important to summarize the use of non-marine frequencies (most notably, 143.28MHz, but also any district-authorized frequencies for simplex or repeaters). By presenting both how the Auxiliary uses these frequencies to support operations, and how widespread the capability is, we have a lot of "ammunition" in representing the Auxiliary in federal spectrum discussions. We can't open that discussion until we are prepared.

Part of that "ammunition" is the personal investment that all of you have made in purchasing your own radios (versus other government agencies, where the U.S. Government has purchased the radios).

If you have capability or actually operate on 143.28MHz, please let your DSO-CM know through your local chain of staff. Provide the following information:

- what model radio you use for this capability
- If you operate on district or local repeater systems

We have to summarize some technical issues (frequency stability and FM bandwidth to mention two), and knowing the model radio you use lets us do that without you having to know these technical details. This inquiry applies to all types of facilities (radio, surface, aviation). Repeater systems are valuable resources that also need protection by demonstrating usage.

Your DSO-CM will forward this information to The National Telecommunications staff so that we can have an accurate Auxiliary-wide picture to support our efforts on your behalf.

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Rescue 21 Update

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Agile, protocol-agile radios. The APCO-25 radio standard is directly supported providing interoperability with federal, state, and local agencies.

The modernization project recognizes that technology marches on, and provides for on-going rejuvenation. Various segments of the project are expected to be replaced on different schedules and this is reflected in the budgeting and maintenance plan.

Compared to the network used today, Rescue-21 provides a coherent disaster and recovery plan for all sites (including backup power), providing for 24-hour minimum service recovery targets and 7-day re-establishment targets for the maintenance contractor to meet in the event of loss. Today, every site has a different local plan.

The communications network is only one piece of the solution. Operational doctrine, which is where Auxiliary interaction is defined, is being developed now simultaneously with the first Rescue-21 coverage area entering baseline testing.

A key factor in the effectiveness of Rescue-21 is the increasing use of DSC radios. There is a significant education requirement to have boaters properly install current technology DSC radios, particularly in providing GPS position data to the radio and properly registering the radio (which is a free process). Without the GPS connected, a DSC distress radio call can't be located (the digital data burst is too short to do traditional direction finding). In the future, technology may integrate a GPS capability into all the radios.

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Registration will always be an issue, though.

The Rescue-21 project completely replaces VHF communication equipment at stations, groups, districts, on cutters, and on many standard boats. Many smaller station boats (as well as Auxiliary vessels) will continue to use traditional or DSC VHF radios. During transition in each area, the existing systems are to be kept operational until the replacement program is complete.

Existing VHF equipment will be disposed of using a formal plan. Auxiliary units that wish to use any of the replaced equipment can only get to the head of the list by having equipment transferred before disposal (under the asset disposal process, the Auxiliary is far down the priority list). Your Director of Auxiliary can assist Auxiliary leadership in the transfer process, but much of this work must be done long before Rescue-21 implementation starts in your area. Ask your Auxiliary leadership how this process is being handled in your area.

District 7 has taken the lead in developing initial educational materials for both members and the public. District 11SR has been in the forefront of testing and investigating the impact of DSC radios on Auxiliary VHF communications, including doing advance work on how Auxiliary radio facilities "register" their radios.

National Operations Department

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