



45635

POPULAR COMMUNICATIONS

AUGUST 2004

Stealth On The High Seas: Are "Invisible" Ships Prowling The World's Waterways?

It's A Fact: CB Radio Is Alive And Well In The Digital Era!

Artist's rendering of the super-secret Lockheed Martin CHARC stealth attack boat that may soon be prowling the waters off the coast of California.



U.S. \$4.99 / Canada \$6.99



PLUS: Radio's Future Is Here Today—Network Control Of Your Radio; Understanding Wideband Receivers; Reviewed: Tigertronic's SignaLink SL-1+ Sound Card/Radio Interface AND The MixW 2.12 Multimode Program

Stealth On The High Seas

Are "Invisible" Ships Prowling The World's Waterways— And Can You Monitor Them?

By Steve Douglass

From time to time I have written about covert military aircraft projects, such as the *Black Manta* or the *Pulser*. Since then I have received many letters from readers telling me of their own close-encounters with aircraft the government would rather you not know about. Most of these letters also ask for more information on secret stealth aircraft to appear in my "Utility Communications Digest" column. However not all UTE monitors are as enamored with aircraft as I am and have a more nautical bent. They're in love with the ocean, ships, and marine monitoring, and as a rule couldn't care less about what's flying through the midnight skies.

But that doesn't mean there isn't black project intrigue on the high seas. In fact, the sea-borne U.S. military is now embracing stealth technology—and not in the form of carrier-based aircraft. Silent, practically invisible stealth ships are now prowling the world's waterways.

Seafaring Origins

Back in the 1970s when the geniuses at the Lockheed Skunk Works, a "secret" aircraft development group operated by Lockheed, created the formula for building a low-radar-observable aircraft, they realized that the special shaping required could be

applied to anything they didn't want to show up on radar. They began envisioning a whole slew of stealth projects, including everything that flew, rolled, and yes, sailed the seven seas.

Imagine a fleet of Navy ships that could sneak up on a target unnoticed, sitting quietly off an enemy coast ready to launch aircraft, missiles, or UCAVs (see "Glossary") at a moment's notice. Terrorist camps could be taken out without any warning, plus once the word was out that America could strike anywhere at anytime, the decision to direct war against the U.S. would not be something an enemy would take lightly.

Another very attractive mission envisioned for stealth ships would be the ability to insert clandestine operatives into a country via an ocean inlet where they could spy or conduct paramilitary operations. One unexpected stealth byproduct was the special faceting shape that also seriously reduced a submarine's sonar signature, which will make future submarines impossible to track.

The Navy also envisioned building spy ships that could loiter off a coast gathering SIGINT and COMINT without an enemy being any wiser. Possibly, many Navy old-salts couldn't help but wonder if the infamous "Pueblo Incident," where North Korea captured a U.S. eavesdropping ship, could have been avoided if stealth had been invented decades earlier.

With these requirements in mind, Lockheed futurists began exploring the possibilities of building stealthy ships. They began by building models and testing them in a huge man-made lake and radar range in the middle of the California desert, near Death Valley. The Skunk Works miniature ocean came complete with wave-making machines and a movable pylon on which to mount test shapes that could be irradiated with many wavelengths of radar, including those of orbiting Russian ocean surveillance satellite radars.

An unforeseen, and comical, problem occurred when the test ocean attracted vast herds of wild horses. Smelling the fresh water, they came by the hundreds to drink from Lockheed's stealth pond. This problem was solved when salt was added to the water, not only driving away the horses but also closely duplicating the salinity and density factors of the world's oceans.

Out of these tests the first stealth ocean-going navy ship was born. Known as the *Sea Shadow*, this super-secret ship was built and tested in complete secrecy off the coast of Catalina



Lockheed Martin's design for a stealthy attack boat is based on its success with its other stealthy projects, such as the revolutionary F-117 stealth fighter and the *Sea Shadow* stealth ship. (Photo courtesy Lockheed Martin)



The first stealth ship, the Sea Shadow was so cutting edge that at first the U.S. Navy rejected it. Now the Navy is rethinking its ideas on stealth and is applying stealth technologies to designs for future warships and aircraft. (Photo courtesy Lockheed Martin)

Island. Constructed and hidden away inside a floating dry-dock, the *Sea Shadow* only set sail on moonless nights and in carefully guarded sea-lanes where the Navy could run its series of tests, which included over-flying the ship with every type of sea searching radar they could muster.

During one series of tests, the stealth ship was only spotted twice, but that was only when a Navy P-3 Orion came within a couple of miles of the *Sea Shadow*, far inside the anti-aircraft missile range of any defensive system the ship could defend itself with.

As impressive as the *Sea Shadow* was, acceptance within the Navy was not assured. Keep in mind that the U.S. Navy is a branch of the military mired in tradition and bureaucracy, so much so that when one Navy admiral saw the blueprints for the *Sea Shadow* he demanded to know where the paint locker was. Every ship that had ever sailed in the U.S. Navy since John Paul Jones had a paint locker onboard and he'd be damned if the *Sea Shadow* wasn't going to have one also!

So the *Sea Shadow* became just an experiment in high technology that the Navy wasn't interested in at all... until now.

Despite its unsuccessful attempt to bring the Navy into the stealth age, Lockheed persisted and has announced that it hopes to build an even more advanced Navy fast attack boat, called a CHARC for Covert High-Speed Attack & Reconnaissance Craft.

Looking like a cross between a stealth fighter, Comanche helicopter, and a Star Trek spaceship design, the CHARC is designed to protect carrier groups by fighting off attacking suicide boats (like

the type that attacked the *USS Cole*), sink diesel submarines (now being sold to third world countries by North Korea and Russia), and also work as a clandestine spying platform capable of reconnaissance deep within hostile waters. The CHARC could also be used as a minesweeper and an anti-aircraft SAM platform as well.

Designed to be stealthy in all aspects with very low radar, sonar, acoustic, and infrared signatures, the CHARC should be very hard to detect, indeed. It will be fast, too, propelled by two folding engine pylons up to 50 kilotons by two 2,600- to 3,000-hp diesel engines.

In most operating modes the engine pods work submerged, as in the *Sea Shadow*'s SWATH design, but could be pumped with air and swiveled up like wings so that the entire ship can lay flat on the water like a catamaran, enabling it to work in shallow water or to reduce its visible signature greatly. When the engine pods are configured below the craft their buoyancy can be configured so that the entire ship, except for the engine pods, can rise 14 feet above the water for use as a surveillance platform and to



The Sea Shadow inside its secret floating dock where it was built and tested in complete secrecy.

Glossary Of Terms

COMINT: Communications Intelligence

Faceting: Cutting flat planes on a gemstone

P-3 Orion Aircraft: A Navy four-engine turboprop antisubmarine and maritime surveillance aircraft.

SAM: Surface-to-Air Missile

SIGINT: Signal Intelligence And Information

SWATH: Small Waterplane Area Twin Hull design wastes less energy climbing wave peaks and accelerating down troughs.

UCAV: Unmanned Combat Air Vehicle

REACT is growing, and

CALLING YOU!

PRESIDENT BUSH HAS ASKED CITIZENS TO TAKE PART IN VOLUNTEERISM/HOMELAND SECURITY. HERE'S YOUR CHANCE TO DO THAT WHILE ENJOYING YOUR RADIO!



REACTers provide two-way communications for safety and to coordinate local events. As a monitor you will answer calls for assistance and emergencies, the details forwarded to authorities by telephone. We use CB, GMRS, FRS, amateur, business band, and Marine VHF radios. These are also used at events such as races, parades, marathons, etc. Activities are covered by \$1,000,000 liability insurance. Equipment advice, licensing help, training, are supplied - all you need to provide service with your radio!



The **REACT** International mission is to provide public safety communications to individuals, organizations, and agencies to save lives, prevent injuries, and give assistance wherever and whenever needed. We strive to accomplish a monitoring network of trained volunteer citizen communicators using any and all available means to handle the message.

REACT INTERNATIONAL, INC.

Phone: (301) 316-2900

Fax: (301) 316-2903

(866) REACT99 (Membership Inquiry)

Web: www.reactintl.org

5210 Auth Road, Suite 403

Suitland, MD 20746

* PROUD RECIPIENT OF THE PRESIDENT'S VOLUNTEER ACTION AWARD *

RADIO EMERGENCY ASSOCIATED COMMUNICATIONS TEAMS



expose the 20-mm cannon and Hellfire missile pods.

The four-man cockpit design is borrowed from the MH-60R/S STRIKE-HAWK helicopter, with its faceted stealth shape a direct descendant of the F-117 and RAH-66 Comanche scout helicopter designs.

If the CHARC is built, one or more of these unique craft will operate from a much larger craft, such as a carrier or assault ship. Fast, nimble, and stealthy, the CHARC can only add to the lethality and flexibility of any carrier group.

"So how can monitors hope to catch a CHARC on their radios? Try monitoring marine VHF channels near Navy yards on the west coast."

Listening For The CHARC

So how can monitors hope to catch a CHARC on their radios? Try monitoring marine VHF channels near Navy yards on the west coast. I don't think you'll have any chance of monitoring a CHARC on HF, but associated Navy communications might indicate when the CHARC is on sea trials. Good areas to monitor should be the waters around the Channel Islands off of Santa Barbara (where the *Sea Shadow* was tested) as well as off the waters near the Navy's secret test facilities located on San Nicolas Island.

During *Sea Shadow* trials the Coast Guard let it leak that they were escalating stop and search procedures in the test areas, which worked well at keeping pleasure craft far away, so keep an ear to CG channels as well.

Most of the *Sea Shadow* trials took place on moonless nights with the craft tucked away before dawn back in its floating hide-and-shelter on Long Beach. Look for unusual floating barges and enclosures guarded closely by Navy police and Navy support ships.

You might want to monitor Navy UHF aviation band frequencies as well for increased P-3 Orion traffic, because that will undoubtedly be used to see if they can track the CHARC on their radars. Lockheed Martin hopes to field CHARCs by 2008.

As we continue the War on Terrorism into the 21st Century, keep an ear to the airwaves. You never know what you might hear! And of course don't forget to report any unusual communications to me here at *Pop'Comm*.