Hawgfish Scuttlebutt

Razorback Base
United States Submarine Veterans

FEBRUARY, 2021

Royal Navy Submarine Appears In Gibraltar Equipped With Enhanced Wake Detection System

These somewhat exotic non-acoustic sensors that were once mainly found on Soviet submarines would help supplement sonar when searching for other subs.

BY JOSEPH TREVITHICK FEBRUARY 2, 2021

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To perpetuate the memory of our shipmates who gave their lives in the pursuit of their duties while serving their country. That their dedication, deeds, and supreme sacrifice be a constant source of motivation toward greater accomplishments. Pledge loyalty and patriotism to the United States of America and its Constitution.

COMMANDER'S CORNER

I appreciate your confidence in allowing me to serve as Base Commander for a second tour. Together we can hopefully Move forward, increase our presence in the state and community With luck and full recovery from the pandemic, it is my goal to welcome former USS Razorback Base members back into the fold, recruit new members and have some good times along the way. I will be calling on current officers to continue with exception of those who are double and triple stacked . I ask each and every member to give this much thought and volunteer if asked. Our first social activity will be a pack and sack lunch on the third Wednesday of February 2021 in the NLR RV Pavilion (weather permitting). Soft drinks will be provided by the base. Remember we must comply with local rules to wear a mask and social distance. You may contact me with your concerns and questions either by phone, (501) 758-3266 or e-mail, retldousn@earthlink.net.

s,

Billy Holloway
Base Commander

(CONT FROM PG 1)

The U.K. Royal Navy's Trafalgar class attack submarine HMS Talent has arrived in the British territory of Gibraltar sporting curious new sensors on either side of its sail. We can say with near certainty that these are additions to an existing system designed to detect enemy submarines without the use of sonar that first appeared on the boat in 2019.

Photographer David Parody grabbed the pictures of Talent in this new configuration as it sailed into Gibraltar today and was kind enough to share them with The War Zone. In addition to the sensor suite, the submarine also has a pair of 7.62mm FN MAG machine guns, known as L7 General Purpose Machine Guns (GPMG) in British military service, mounted on pintles on top of the sail. The fitting of machine guns in this manner, together with arming individual sailors with small arms and non-lethal weapons, are common force protection measures employed by the crews of Royal Navy submarines, as well as those belonging to other navies, especially when entering or exiting ports.

It's not clear how long Talent has had all three of these sensor arrays installed together. The boat is one of just three remaining Royal Navy Trafalgar class submarines, which have been steadily retired as new Astute class attack submarines have entered service. Talent is scheduled to be decommissioned later this year.

As for what these sensors actually do, they are designed to detect other submarines beneath the waves via the changes in water density that they leave in their wake. These systems have historically been almost exclusively associated with Soviet and now Russian submarines. In that country, they are most commonly referred to collectively as examples of a System Obnarujenia Kilvaternovo Sleda (SOKS), or Wake Object Detection System.

There have also been reports in the past suggesting that certain SOKS variants could be able to detect trace amounts of certain chemicals in a submarine's wake, including from temporary anti-corrosive coatings flaking off or byproducts from oxygen generation systems. Detecting minute increases in radiation levels from the reactors on nuclear-powered boats, such as the Trafalgar class, or elevated water temperatures from a submarine passing by, may also be among their capabilities.

In principle, such a system would be a valuable additional passive sensor for a submarine when hunting for other boats underwater. While modern sonar systems have passive, as well as active functionality, in the former mode, operators have to pick out the sounds of another submarine from a host of background noises, ranging from sea life to the simple movement of the ocean itself. These issues are even more pronounced in shallower littoral areas. You can read more about how all of this works in this previous War Zone story.

At the same time, there have long been debates about just how effective SOKS variants, which appear to have first emerged in the late 1960s, might actually be, with now-declassified U.S. intelligence documents hinting at potential limitations in range and sensitivity. At the same time, the continued Russian use of such systems would indicate that they provide at least some level of additional sensing capability.

Using active sonar "pings" could help them find a target faster, but would also greatly expose the boat sending out those signals. In submarine warfare, staying as quiet as possible is critical to staying alive, as you can read about in greater detail in these past War Zone pieces.

In addition, there continues to be clear interest among other militaries around the world, including elements of the U.S. military, in sonar alternatives. The year before Talent had appeared in Gibraltar with the addition to its bow, another Trafalgar class submarine had arrived there with a similar-looking modification to the front of its sail.

The additional arrays on Talent could enable it to collect more data and do so more rapidly, improving its overall capabilities. Putting the additional sensors on either side of the sail might improve the system's ability to determine the range or depth of the target based on the differences between what each of the three arrays detect, broadly akin to how radiofrequency signals can be triangulated.

General technological advances, including increased computing power and artificial intelligence-driven systems to help process data from the sensors faster and more accurately, over the years may well have helped make the general concept more viable, as well. Those same developments could also enable the fusing of the wake-detecting data together with information from the boat's sonar arrays and any other sensor systems onboard to even more precisely spot, categorize, and track hostile submarines, as well as any other objects of interest underwater.

Using an older boat, such as Talent, to help prove all of this out in an operational environment would make good sense, too. The Mediterranean Sea, where Gibraltar is situated, which is a relatively well-understood body of water where Russian submarines are known to prowl, could be a particularly ideal testing ground.

"We've put this submarine right in this area of the eastern portion of the Mediterranean to counterbalance the Russian buildup in Syria," U.S. Navy Rear Admiral William Houston, then-tripled-hatted as Director of Plans and Operations for U.S. Naval Forces Europe/U.S. Sixth Fleet, the Deputy Commander of Sixth Fleet, and the Commander of Submarine Group Eight, told ABC News' "Nightline" in 2019, referring to the deployment of the Ohio class guided-missile submarine USS Florida to that area. "We're watching them [the Russians] very very closely. There's really not a day where we're not watching them, every single day."

Concerns about increases in Russian submarine activity, especially on both sides of the northern Atlantic, have grown among NATO members, including the United States and the United Kingdom, in recent years. Expanding Chinese underwater capabilities present another growing naval challenge. Both of these countries are also increasingly fielding new nuclear and advanced conventionally-powered submarines with features that make them extremely quiet and difficult to detect. All of this would only underscore a desire for additional ways to detect threats beneath the waves, such as a wake-detecting system.

All told, while Talent may be set to sail into retirement later this year, the equipment fitted to the submarine now may well find its way onto other Royal Navy boats in the future.

The True Story of the Only Underwater Submarine Battle Ever

The Hunt for Red October dramatized for the public one of the tensest forms of warfare imaginable: combat between submarines submerged deep under the ocean's surface, the nerve-wracked crews scouring the fathomless depths for their adversary's acoustic signature using hydrophones.

However, while hunting undersea enemies is one of the primary jobs of modern attack submarines, only one undersea sub engagement has ever taken place, under decidedly unique circumstances.

This is not to say that submarines have not sunk other submarines. Indeed, the first such kill occurred in World War I, when U-27 sank the British E3. Dozens other such engagements occurred in the two world wars. However, in all but one case, the victims were surfaced, not underwater.

This was foremost because the submarines of the era needed to spend most of their time on the surface to run their air-breathing diesel engines; they could only remain underwater for hours at a time with the power they could store on batteries, moving at roughly one-third their surface speed. Therefore, submerged action was reserved for ambushing enemy ships and evading attackers.

There were additional problems intrinsic to having one submarine hunt another underwater in an era that predated advanced sensors and guided torpedoes: how could submerged subs detect each other's position? During World War II, submarines came to make greater use of hydrophones as well as active sonar; however, the latter models could only plot out a submarine's location on a two-dimensional plane, not reveal its depth.
Furthermore, the torpedoes of the time were designed to float up to near the surface of the water to strike the keel of enemy ships. Although the "tin fish" could be reprogrammed to an extent, it was not standard to adjust for depth, and guessing the azimuth of an enemy submarine with the limited targeting information available posed an immense challenge.

On February 5, 1945, the U-Boat U-864 slipped from its quay in Bergen as it departed on a secret mission known portentously as Operation Caesar.

U-864's compartments were filled with key technology and resources that Nazi Germany planned on transferring to Japan. These included schematics and components for Jumo 004 turbojets to aid in the development of a Japanese jet fighter, and even two engineers from the aviation manufacturer Messerschmitt. There were also guidance components for V-2 ballistic missiles and two Japanese technical experts. U-864 also carried more than sixty-seven tons of liquid mercury, carried in 1,857 steel flasks. The mercury had been purchased but not

entirely delivered from Italy in 1942, and was a key material for manufacturing explosive primers.

Capt. Ralf-Reimar Wolfram's mission was to sail the long-range submarine north around Norway, then across the Arctic Circle past Soviet territory to deliver the goods. Germany was only months away from falling, but Berlin hoped that the technology and materials would allow Japan to stay longer in the fight and divert Allied combat power.

U-864 was a Type IXD2 "cruiser submarine," and at 87.5 meters long was larger than the more common Type VII U-Boat. It was designed for long-range transoceanic patrols, and the -D2 model in particular was even bigger to accommodate enlarged cargo compartments. Before departing, U-864 had been modified with a piece of technology then unique to Germany—a snorkeling mast, allowing the submarine to sip air from the surface while shallowly submerged.

Despite this formidable advantage, Wolfram's mission proved ill-omened from the start. U-864 initially set off from Kiel on December 5, 1944, but ran aground while transiting through the Kiel canal. Wolfram decided to have the ship undergo repairs in Bergen, Norway. But in Bergen, its armored pen was hit with twelve-thousand-pound Tall Boy bombs dropped by British Lancaster bombers on January 12, 1945, causing even more damage.

Unfortunately for Wolfram, the United Kingdom had long ago cracked the Enigma code, which German U-Boats used to communicate with the Naval headquarters. By February, the British Navy had decoded messages relating U-864's mission, and decided to set a trap.

HMS Venturer, the first of the new V-class submarines, received orders from the Royal Navy Submarine Command to hunt down and destroy U-864 off the island of Fedje, Norway. The smaller, shorter-range British submarine carried only eight torpedoes to U-864's twenty-two, but it was nearly 50 percent faster underwater, at ten miles per hour.

Venturer arrived at its station on February 6. Its skipper, twenty-five-year-old Lt. James S. Launders, was a decorated submarine commander, who in addition to sinking twelve Axis surface ships, had dispatched the surfaced submarine U-711 in November 1944.

Though he disposed of an ASDIC active-sonar system that offered greater detection range by emitting sound waves into the ocean, which could be tracked when they pinged off submerged ships, Launders elected to rely on shorter-range hydrophones. This was because the ping from ASDIC could be heard by adversaries from even further away.

But Launders didn't realize he was engaged in a hopeless hunt. U-864 had slipped past him.

Many war stories tell of protagonists who avoid horrible fates out of sheer coincidence and dumb luck. More or less the opposite happened to Captain Wolfram.

U-864 was safely out of range of the Venturer when its diesel engine began noisily misfiring, hampering acoustic stealth and threatening to break down entirely. Only a few days out from port, Captain Wolfram decided he should play it safe by returning to Bergen for repair. He could not have known he was leading his submarine straight back into danger.

On February 9, the hydrophone operator on the Venturer overheard a contact that he at first believed was coming from the diesel motor of a fishing boat. Launders moved his submarine closer to the sound pickup, and spotted on the periscope what appeared to be another periscope in the distance. This was actually most likely U-864's snorkel. Running submerged on batteries, Launders slipped the Venturer behind the German submarine and began tailing it.

He was waiting for U-864 to surface before launching his torpedoes, but thanks to its snorkel, U-864 could operate underwater for extended periods of time. The German submarine began zigzagging side to side, likely having detected the British sub.

After three hours of pursuit, the Venturer was running short on battery and would soon have to surface itself. Launders decided he would simply have to attack U-864 while it remained submerged. He calculated a three-dimensional intercept for his torpedoes, estimating his adversary's depth by the height of the snorkel mast protruding above the water. However, he knew the enemy submarine would quickly detect a torpedo launch, and planned his firing solution to account for evasive maneuvers.

At 12:12, Venturer ripple-fired all four of its loaded torpedoes in a spread, with 17.5 seconds between each launch. Then the British submarine dove to avoid counterattack.

The U-Boat immediately crash dove as well, then swerved evasively. After four minutes, it had managed to duck under three of the incoming torpedoes. But Launders had launched the second pair of torpedoes at lower depths. The fourth torpedo struck U-864, breaking it in two; the gruesome sound of popping rivets and cracking metal filled the Venturer's hydrophones. The U-Boat fell 150 meters to the bottom of the ocean, taking with it all seventy-three onboard and sinking Operation Caesar along with it.

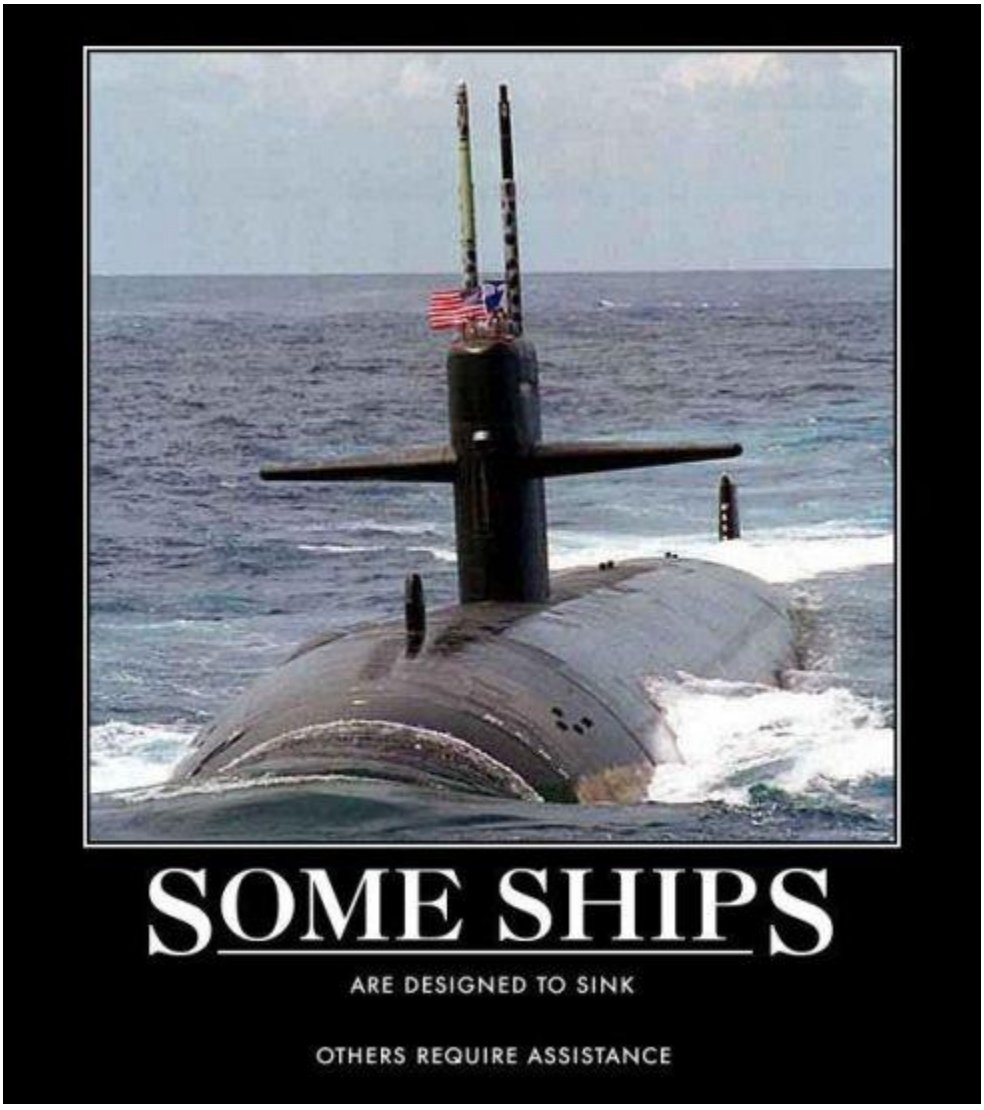
More than a half century later later, the wreck of U-864 was found in 2003 by the Norwegian Navy, two miles off Fedje. It was discovered that the cargo of poisonous liquid mercury had been slowly seeping from the flasks into the surrounding ocean. After spending fifteen years evaluating the risks of raising the wreck and its dangerous, unexploded torpedoes, in February 2017 the Norwegian government finally "entombed" the broken submarine with a half-meter of sand and 160,000 tons of rocks to prevent further contamination, thus forming a cairn for the German submarine that had met its terrible fate under unique circumstances.

I found this and thought is would be a nice story and a change from the normal. Editor

CONGRATULATIONS TO NEW COMMANDER!!!

At the base meeting in January, Billy Holloway was elected as the new base commander. As noted in Commander's Corner, we still need volunteers for various positions. If you would like to volunteer for any position at all, please contact Billy. That includes my position as newsletter editor. Most people in their current position would be willing to allow someone else a chance and some of us have several jobs. Stay safe and stay involved!

Editor



TREASURER'S REPORT				Jan-21
TOTAL BASE FUNDS BEGINNING BALANCE			$	14,387.51
General Fund Beginning Balance			$	4,463.20
National Dues			$	200.00
Dues			$	130.00
Newsletter			$	212.41
General Fund Ending Balance			$	4,180.79
Designated Funds				
Maint. Fund Balance			$	2,652.66
Charity Fund Balance			$	372.00
Snook Memorial Fund Balance			$	1,386.86
Designated Fund Balance			$	4,411.52
Checking Balance (General + Designated Funds)			$	8,592.31
Other Funds				
	CD Beg.Balance		$	5,365.79
	Interest		$	2.11
	CD Ending Balance		$	5,367.80
	Cash on hand		$	147.00
TOTAL BASE FUNDS ENDING BALANCE			$	14,107.21

Booster Club

Pete Jilek (3)
Mark Taylor (6)
George Fore (6)
John Barr (7)
Mem. Of Lee Huss (7)

BIRTHDAYS FOR JANUARY

C. Dean Read, Jr.	7
Maurice Lee Barksdale	7
Bruce M. Lipe	8
Cecil H. Goins	10
Michael D. Moore	10
Sam Cecil	11
Marvin E. Vaughter	18
Ted Yearwood	23
James H. Gates	28

Base Officers

Base Commander **Holland Club & Storekeeper,** **Past Base Commander**	**Billy Hollaway**	**501-758-3266**	**retldousn@earthlink.net**
Base Vice Commander **Mem. and Ceremonies,** **Base Treasurer**	**Mark Taylor**	**501-416-2488**	**empty704@aol.com**
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Base Yeoman	**Myna Miller**	**215-360-5960**	**mynamiller63@hotmail.com**
Base Historian **National Archives Chairman**	**Joe Mathis**	**501-565-6021**	**rmc95ret05@gmail.com**
Membership	**Johnny Baker**	**607-426-6492**	**johnnie@smarthomeintegration.net**
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Past Base Commander	**Paul Honeck**	**501-580-4680**	**pneckerar@gmail.com**
Past Base Commander	**James Barnes**	**501-319-5888**	**jimandsue59@sbcglobal.net**
Past Base Commander	**Carl Schmidt**	**501-778-6583**	**bonnyclyde@classicnet.net**
Past Base Commander	**Ray Wewers**	**501-843-7855**	**raywewers@gmail.com**
Past Base Commander	**Greg Schwerman**	**501-804-0386**	**gschwerman@suddenlink.net**
Past Base Commander	**David Boyer**	**479-227-9633**	**chopper1267@yahoo.com**