

TORPEDO ALLEY



Vol. 8, No. 11

November 2012

United States Submarine Veterans - Charleston Base Newsletter

USSVI Creed

"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"



Base Meeting:

November 8 Social hour 1800 General Meeting 1900

Location:

Fleet Reserve Association Branch 269
Low Country Home
99 Wisteria Rd
Goose Creek, South Carolina Phone 843-569-2962

Base Officers	Click to email	Phone Number
Commander	Carl Chinn	843-875-3098
Vice Commander	Jerry Stout	843-871-9533
Secretary	Vacant	
Treasurer	Terry Trump	843-873-9563

Appointed Officers	Click to email	Phone Number
Chief of the Boat	Rick Sparger	843-553-5594
Public Affairs	Ed Stank	843 863-8474
Veterans Affairs	Jim Morrison	843-832-9716
Chaplain	John Nichols	843-452-3189
Membership	Carl Chinn	843-875-3098
Holland Club	Vacant	
Scholarship	Julian Villegas	843-871-6135
Newsletter	Steve Morawiec	843-410-0131
Storekeeper	Ken Hutchison	843-553-0935
Webmaster	John Nichols	843-452-3189
Historian	George Scharf	843 873-3318

Minutes of the October 2012 meeting

Opening Ceremony: Base Commander Carl Chin called the meeting to order. A quorum was present and the meeting started at 1900. A memorial for Sam Strickland was conducted. Sam's widow, his family members, and subvets Charleston were in attendance. The Base Chaplain, Nick Nichols, presided. Carl Chin, Base Commander presented the certificate of eternal patrol. COB, Richard Sparger presented the perpetual dolphins and outgoing Holland Club Chairman, John Lookabill presented a Holland Club memento to the widow. After the service, our regular meeting was conducted.

Introductions: TMC(SS) Dominic Coriale - qualified on USS Ray SSN 653 in 1972. QMCM(SS) Chris McCool - qualified on USS Ray SSGN in 1972. STSC(SS) Steven Sumner, Ken Hutchison's son in law, qualified on USS Vellejo in 1990. YN1(SS) Bill Smith - qualified on USS Barracuda 332 - forgot when he qualified. MSC(SS) Gerald Starr - qualified on SS Cayman in 1963. MT1(SS) Gus Barton - qualified in 1964 USS Grampus.

Secretary: Stand in Secretary (Jerry Stout) asked for a motion to accept the minutes - seconded, no discussion and approved by all members.

Treasurer: Report given - summary available through the executive board.

Vice Commander: No report.

Storekeeper: Calendars now available for \$10.00. Please purchase before they are gone.

Scholarship: No report.

Public Affairs: No report.

Chaplain: October Report

- **James Weir**, Gene's brother, had a heart transplant on Sept. 23rd in PA. He is doing well and is rehab. Gene will travel to be with him when he is needed to help out.
- **Aaron Stansbury**, Steve Everett's son-in-law, was involved in an accident on Sept. 19th. He left the hospital on Sept. 28th. He is healing well.
- **Colleen Collins**, Rick's wife, had hand surgery on Sept. 18th. After the pins are removed from her thumb and she has therapy she is expected to be able to grasp and hold things in her hand.
- **Jenny Morawiec**, Steve's sister-in-law, has been ill and is now recovering. They live in GA.
- **Bill Hall** had hip surgery Sept. 28th. He's now in Health South 205B and is doing well.
- **Ben McDonald** had 3x bypass on Oct. 4th. He is now home and doing well.
- **Tom Yingling's** mother went into the hospital in PA yesterday and was to have a couple of stints put in today. She's 90 years old. Tom is in PA with mom.
- **Clyde Peters** is still in Mt. Pleasant Manor Nursing Home, 921 Bowman Rd, Rm 323. Ken Hutchison has been to see him and take him out to lunch. We expect him to be at the pig roast.
- **Lee Allison status???**

The following shipmates departed on Eternal Patrol this past month. None were members of Charleston Base. Online memorial entries were made.

- **RMC(SS) Michael James Campbell, Sr.**, departed on Eternal Patrol on September 15, 2012 at Sebastian River Medical Center, Sebastian, FL. He was a Submariner for 22 1/2 years serving on the USS Nathan Hale, USS Benjamin Franklin, USS New York City and the USS Olympia before going to work at the Newport News Shipyard. Mike was a member of Snug Harbor Base.

WWII Submarine Qualified Shipmate Howard Garrett Lipscomb, departed on Eternal Patrol on October 8th, 2012 in Prosperity SC. He served in submarines during WWII. As best as I can determine, he was not a member of WWII SUBVETS or of USSVI.

Webmaster: Our website: <http://www.ussvicb.org/> Updated members on new additions to the pages. If any member would like to post data, please send to Web Master.

Veteran's Affairs: No report.

Little David: No report

SUBVETS WWII: Next luncheon is scheduled for 18 October 2012 at 1130. Be there early. 5 WWII members in attendance, along with all associate members.

Kaps For Kids: Mike Knaub introduced himself and thanked membership for their donations of crayons and coloring books.

Historian: No report

Nuclear Historian: Several jokes and stories, no anecdotes, some response from members.

Membership: As of October 1, 2012, 75 members still have not paid. Please pay soon. Clyde Peters's dues will be paid by The After Battery.

Fleet Reserve: Halloween Costume Party is scheduled. See website for information. Veterans Day Memorial is 11November with an indoor picnic.

Newsletter: No report.

District Commander: Reminder that the Navy Birthday is the same date as Hog Roast, 237 years. King's Bay TVQ is now accepting reservations for upcoming memorial service. Memorial at Kings Bay is 31 October to 3 November.

Public Events: A successful pull of the float was reported at Bonneau Peanut Festival for the first time. Ten members attended. The cover manufacturing is in progress. The cover looks good and will fit like a glove and will be completed next week. Homecoming for Summerville is October 17 at 1800. Members need to be there at 1700 in order to ride on the float. ROTC Cadets may ride. Ridgeville, SC Christmas parade is scheduled for December 8th, 2012 at 1200 pm with lineup at 1100. Veterans Day Parade in Andrews, SC is a go. Date is 10 November and the time will be

announced later. We are waiting for other parade announcements. Veterans Ceremony will be at Dorchester County Building in Summerville SC at 11/11/12.

- 1 December Christmas Parade in Goose Creek
- 8 December Ridgeway Parade, 1100/1200. Allowed to throw candy
- 9 December Summerville parade 1300/1400, no candy to be thrown
- TBD Harleysville parade is TBD

Chief of the Boat: Hog (Butt) roast is 13 October 2012 at 1100 - chow at 1300. The location is Cooper River Partners Recreation Center, near Bushy Park. Map is provided and signs will be posted. Additional volunteers requested. Also need members that can provide transportation for older members to vote on November 6th. Homeless Veterans Annual Stand down is 18/19 October. Make donations to the Armory near Montague Avenue. Crayons are also requested for Caps for Kids. Torpedeomen are exempt from this request as they need crayons to write with. A visit to MUSC is scheduled for early November. Mike Knaub has volunteered for Chairman. Fred Woodley stated that MUSC saved his grandson's life and is very grateful.

Base Commander: Christmas Party is 1 December 2012. Cost is \$15.00 each for you and spouse or significant other. Additional guests are \$20.00 each. Volunteers are needed for set up and break down. Please email or text Steve Morawiec to volunteer. You may buy your tickets by mail from Steve Morawiec (look up his address on the USSVICB website).

Old Business: Marvin Miller is very happy to have his son back from Afghanistan.

New Business: None

Good Of The Order: Cold War certificate applications are available for members that have served during the cold war (1945 - 1986). See Gary Williams (GW) for details.

Depth Charge: \$333.00 to winner. Michael Emerson was the winner and he donated 100.00 to the building fund.

Meeting Adjourned: The Base Commander adjourned the meeting at 1955.

Every election is determined by the people who show up. Larry J. Sabato

November Submarines Lost

USS Corvina	SS 226	November 16, 1943
USS Sculpin	SS 191	November 19, 1943
USS Capelin	SS 289	November 23, 1943
USS Albacore	SS 218	November 7, 1944
USS Growler	SS 215	November 8, 1944
USS Scamp	SS 277	November 9, 1944

November Birthdays

Andrews	Barnette	Bergamo	Betz
Buxton	Gallagher	Gomez	Hubert
Kerstetter	LaForce	Langley	Lawson
Lehmann	Leonhardt	Litzenberger	McKanna
McLochlin	Miller	Morrison	Mueller
Munoz	Narowski	O'Brien	Pease
Power	Rader	Seal	Skinner
Starland	Toelle	Viering	Wilson
Wolfe	Wood	Wright	

DON'T FORGET TO VOTE ON NOVEMBER 6TH!!!

Submarine News

Fewer Submarines To Call Groton Home

Groton - The Navy plans to keep fewer submarines in Groton as the military shifts its focus toward Asia and sends its newest, most capable ships and aircraft to the western Pacific, the Navy's top admiral said Tuesday. By 2020, the Naval Submarine Base is expected to have two squadrons with six attack submarines per squadron, instead of the 16 submarines it has today.

The naval station in Norfolk, Va., will have fewer submarines in the future, too, while the base in Kings Bay, Ga., will not be affected by the rebalancing since ballistic-missile submarines need to remain there as a strategic deterrent, Adm. Jonathan W. Greenert said.

Greenert was in town for a classified conference on undersea warfare technology. "We're pretty well set up to execute this strategy, and now we have to evolve and make that rebalance that is called for," Greenert, the chief of naval operations, said in an interview at the base. There will not be any great departure of submarines and crews. Rather, submarines that retire in the East will not always be replaced with new boats, while submarines in the West will be, Greenert said. The number of submarines in the fleet will decline overall as the aging Los Angeles-class attack subs retire more quickly than the Virginia-class submarines are built.

Even with the changes, Greenert said, the Navy needs three submarine bases along the East Coast. The Norfolk naval station does not have the capacity to support the submarines from Groton, and it would be too expensive to relocate the submarine school from the base, he added. The three locations are "a good balance," Greenert said, and he does not intend to "move submarines en masse" out of the Groton area.

The strategic documents clearly state the Navy has to dominate the undersea domain, to "own it," Greenert said. "To do that, the centerpiece of it is the submarine, make no mistake," he said, adding that various other platforms and payloads will also play important roles as parts of the network. The Navy's forces overall are evenly distributed between the Atlantic and the Pacific, while the distribution of submarines is already closer to 60 percent in the Pacific.

In the future, 60 percent of the forces, including aircraft carriers, cruisers, destroyers, littoral combat ships and submarines, will be based on the West Coast and in the Pacific. That equates to 10 more ships operating in the western Pacific in 2020, with more ships based in Japan and Guam instead of rotating between the region and the United States.

The Navy wants to establish or re-establish relationships with numerous allies throughout Asia, Greenert said. While some have said the strategy, announced in January, is a way to contain China's growing military power, Greenert dismissed that idea as an oversimplification. China, the major player in the region, put its first aircraft carrier into service on Tuesday.

"There are many things that could tend to be an outcome. You could say, 'Well, you did all this, this came out of that,' and that would be a conclusion someone draws," he said, adding later, "That's not the intent directly. It is, like I said, to establish those relationships and re-nurture them."

Greenert said the strategy is not just about having the right number of ships in the region. It is also about having the right mix of capabilities, both in vessels and aircraft, as well as having the proper training for those who will deploy there and more complex exercises to engage allies. Officials in Singapore recently agreed to host up to four of the Navy's littoral combat ships. The Navy plans to send the new P-8A Poseidon aircraft to Okinawa and unmanned aircraft to Guam when they come online, as well as send new Virginia-class submarines and destroyers to the region. The Navy's presence in the Caribbean, Central and South America and Africa will slightly shrink. But the Navy could use other capabilities in some areas, including unmanned systems, and work with allies who have professional, capable submarine forces, Greenert said.

The plans for rebalancing are feasible unless sequestration occurs, he added. The \$1.2 trillion in automatic spending cuts known as sequestration will take effect Jan. 1 if Congress does not act to prevent it. The Navy's shipbuilding and conversion funding would be cut by \$2.14 billion in 2013 under sequestration, according to the Office of Management and Budget. That would render the strategy "un-executable," Greenert said.

U.S. Navy Defends Boomer Submarine Replacement Plans

A top U.S. Navy official is defending the service's plans to replace its Ohio-class ballistic missile submarine fleet, saying the Navy has the right design and boat numbers to execute the mission for decades to come.

"We conducted a detailed analysis of many force structure options," says Rear Adm. Barry Bruner, Navy undersea warfare director, in a recent blog. "A force of 12 Ohio Replacement nuclear-powered ballistic missile submarines (SSBN) with 16 missile tubes satisfies national strategic deterrent requirements at the most affordable cost. Twelve Ohio Replacement SSBNs meet at-sea strategic patrol requirements and sustain this requirement while some of the SSBNs are unavailable due to planned maintenance."

Bruner says, "Reduced-force options [that] we considered failed to meet the current at-sea and nuclear employment requirements, increased risk for force survivability, and limited the flexibility in response to an uncertain strategic future. A 12-ship, 16-missile-tube SSBN force has sufficient, not excessive, flexibility and capacity." He acknowledges that because ship construction of the Ohio Replacement shifted to 2021 from 2019, there will be fewer than 12 SSBNs from 2029 to 2042 as the Ohio-class retires and Ohio replacement ships join the fleet. Addressing recent critics of the shortfalls, he says, "During this time frame no major SSBN overhauls are planned, and a force of 10 SSBNs will support current atsea presence requirements."

However, he says, "This provides a low margin to compensate for unforeseen issues that may result in reduced SSBN availability. The reduced SSBN availability during this time frame reinforces the importance of remaining on schedule with the Ohio Replacement program to meet future strategic commitments. As the Ohio Replacement ships begin their mid-life overhauls in 2049, 12 SSBNs will be required to offset ships conducting planned maintenance." He also says the Navy and Pentagon are keeping a lid on proposed costs. "The Department of Defense set an aggressive cost goal of \$4.9 billion per hull (calendar year 2010) as an average cost for hulls 2-12. To date, the Navy

has reduced costs by reducing specifications to the minimum necessary to meet national strategic deterrent requirements, implementing modular construction design, reusing the Trident II D5 Strategic Weapons System, and reusing Virginia- and Ohio-class components where feasible. The Virginia-class construction program, through aggressive management and collaboration between government and industry, has developed into a model ship building program, continually coming in under budget and ahead of schedule. Ohio Replacement design and construction will build on this success."

West's Last HOOYAH, Stevens Takes Helm

WASHINGTON (NNS) -- Master Chief Petty Officer of the Navy (MCPON) (SS/SW) Rick D. West gave his last 'HOOYAH' during the change-of-office ceremony at the Washington Navy Yard, Sept. 28. Chief of Naval Operations Adm. Jonathan Greenert was the guest speaker for the ceremony and highlighted MCPON West's accomplishments during his naval career while thanking him for his leadership. "MCPON West, you made the Navy better through your willingness to listen and learn," said Greenert. "I watched you firsthand in the Pacific Fleet, at U.S. Fleet Forces, as VCNO, and I had the honor to serve with you for one year as CNO. MCPON West had the heartbeat of the Navy. Sailors communicated with him. He challenged Sailors and they loved it."

The ceremony marked the end of a nearly 32-year career for West, who had served as the 12th MCPON since Dec. 12, 2008. During his time as MCPON, West instituted the Senior Enlisted Continuation Board, introduced CPO 365, and implemented the mandatory enlisted warfare designation. "MCPON West made a difference and led by example. He made a tangible improvement in our Navy," said Greenert. "I say to you and Bobbi (wife), thank you very much and our nation and our Navy thanks you." West did not discuss personal accomplishments during his retirement remarks, instead focusing on thanking family, friends, shipmates and mentors who helped shape him into a leader and the memories he'll take with him of his years of service.

"There is simply no way I can mention you all. Just know that if you are here today, you played some part in the success that I have enjoyed," said West. "It has been an honor and privilege to serve our great Navy for nearly 32 years and especially to serve as MCPON for the last four. Thirty-two years is a long time, but when you are talking about the end of a fantastic journey, it was just a "flash of time." I've never had a "bad command" because I feel commands are what you make of them and how you choose to seize the opportunities."

"The thing I'm going to miss the most is, by far, the people and the energy and innovation of our Sailors and families. The 'engine' that truly drives our Navy is our people. Our Sailors are what makes our Navy the best that's ever sailed the world's oceans," said West.

MCPON (AW/NAC) Mike D. Stevens took the helm of the enlisted force as the Navy's 13th MCPON after receiving the ceremonial cutlass from MCPON West. "I was honored to pick MCPON 13," said Greenert. "It was not an easy task. MCPON Stevens is a proven and effective leader. This is a guy ready to lead our Navy and I look forward to your insight and perspective."

Stevens, a native of Montana, joined the Navy in 1983 and most recently served as Fleet Master Chief for U.S. Fleet Forces Fleet Master Chief in Norfolk. His previous Command Master Chief tours included U.S. 2nd Fleet, Helicopter Sea Combat Wing Atlantic, Helicopter Mine Countermeasures Squadron 14, and Naval Air Station Pensacola. MCPON Stevens thanked Admiral Greenert for his trust and faith in his selection as MCPON.

"I am both humbled and honored to have been provided this magnificent opportunity to lead and serve our Sailors, their families and our government civilians as the 13th Master Chief Petty Officer of the Navy," said Stevens. Stevens thanked West for his service, leadership and friendship and spoke to the Navy, saying he is excited about the future and looking forward to serving the Navy as MCPON by working together to carry out the Navy's mission.

The MCPON serves as an advisor to the CNO and to the Chief of Naval Personnel in matters dealing with enlisted personnel and their families. The MCPON is also an advisor to boards dealing with enlisted personnel issues; is the enlisted representative of the Department of the Navy at special events; may be called upon to testify on enlisted personnel issues before Congress; and maintains a liaison with enlisted spouse organizations.

Chairman Of Joint Chiefs Speaks At Bangor

BANGOR — Transitions are coming to the armed forces, but if service members stick together, everything will be fine, President Barack Obama's top military adviser said during a town hall meeting Wednesday at Naval Base Kitsap-Bangor. Army Gen. Martin Dempsey, chairman of the Joint Chiefs of Staff, told about 300 Sailors and Marines at Bangor Plaza when he was a young soldier he believed leaders knew everything.

"They really don't know," he said. "The one thing I can tell you is we're going to be OK because of you. As long as we continue to keep the trust, we'll be able to handle whatever the world can throw at us."

Dempsey visited the Northwest this week, meeting business leaders Monday in Seattle, touring Bangor on Tuesday and Joint Base Lewis-McChord on Thursday.

The military is shifting away from deploying to the Middle East for combat to performing missions besides counterinsurgency, he said. Twelve years and two days ago, the USS Independence was sent to the Persian Gulf after Iraq invaded Kuwait, the first time an American aircraft carrier had been there since 1974. We've never left. "We've been focusing like a laser beam on Afghanistan and Iraq, one deployment after another," said the four-star general. "What are we going to do with more time?"

The transition hasn't affected the Navy yet. In fact, deployments have speeded up, and Dempsey acknowledged Bremerton-based carrier USS John C. Stennis returning to the Middle East early.

"Because of potential tensions in the Gulf, we've floated about as much of the force as we can," he said.

One submariner brought up manning concerns, saying there aren't enough trained Sailors, retention is poor and his sub had to borrow people from its other crew to go to sea.

"I'll carry it back (to the chief of naval operations)," Dempsey said. "We've been asking so much of all the services. We're more forward-deployed than we've been in a long time." Another submariner posed the same question to Dempsey, "What are we going to do with all the time (after deployments slow down)?" "Here's my promise, you're not going to be bored," said Dempsey, who has been chairman a year. "We'll find you something to do. We've been pushing pretty hard. We need a better pace over the long haul."

The military will be leaner in coming years. If Congress can't agree on a deficit-reduction plan by Jan. 1, the military will need to cut \$600 billion over 10 years. Even if sequestration is avoided, defense budgets will still be smaller. "We have to find ways to make ourselves more affordable," said Dempsey, who toured the Trident ballistic submarine USS Maine before the meeting.

One way to become more affordable is to cut personnel. The Navy and Air Force have been "resizing" for 10 years. They won't lose many more members, Dempsey said, but 100,000 soldiers and Marines could go. Dempsey said he came Tuesday to thank the soldiers and Marines for their service and tell them to keep the faith. "Do you want to serve your country when it's on autopilot or when it really matters?" he asked. "If (the latter) is the case, you've arrived."

Sea Power For Robots

More and more torpedo-shaped-robots are plying the oceans to sniff out mines, gather environmental data, and scan the ocean floor for famous wrecks. But these underwater vehicles struggle with the same problem that heavy smartphone users have: short battery life.

With a typical run time of about 24 hours, autonomous underwater vehicles, or AUVs as they are known, have so far been limited in use. If the industry can come up with a way to repower them at sea, these underwater robots could give the military powerful new tools and take on a broader range of commercial and scientific jobs.

Bluefin Robotics's solution is much like what the auto industry is developing for electric cars: charging stations. Instead of being yanked out of the water for recharging, the robot would pull up to a refueling station on the ocean bottom. Bluefin, on the Fore River in Quincy, has built a docking station that communicates directly with underwater vehicles, guiding them to where they can recharge and transfer data.

The refueling station resembles a cage roughly 5 by 15 feet with a cone-shaped entrance. Once it's inside, the robot is recharged wirelessly through inductive coils -- the same technology used for charging electric toothbrushes. The refueling itself could rely on a bank of larger batteries if it's a remote location, or a power cable from an external source, either on land or a surface buoy.

Any data the robot has gathered, such as images of the sea bed or boat traffic, could be uploaded to the docking station and transmitted to home base, which could wire new instructions to the robot.

"Launch and recovery from a boat is a very difficult process. This way you have a garage," said Robert Geoghegan, department manager for ocean engineering for Battelle Memorial Institute, a - research organization that owns Bluefin Robotics. "So instead of doing launch and recovery every day, you can do it once a week or longer."

With a continuous supply of electricity, an AUV could work for months at a time, recharging daily, Bluefin executives said.

The Navy already has hundreds in service, usually for -security- oriented missions, but has a multiyear master plan to expand the fleet. It envisions networks of AUVs gathering military intelligence, such as about enemy submarine movements, or neutralizing or arming mines. These vehicles could also be launched from submarines and pilot themselves while carrying weapons.

But the Navy wants 60-day missions, rather than the day-long trips underwater robots take now. Navy officials were in Quincy last month, scoping out the new docking station. Oil and gas companies, which have been using remote-

controlled underwater vehicles for years, are looking at autonomous robots to reduce costs and danger to people from inspecting pipelines after hurricanes. A single rechargeable AUV could test the structural integrity of equipment over a vast area and report back to a drilling platform.

And for scientists, a longer-running AUV would be able to collect more data, such as from tracking pollutants over several weeks, and give researchers flexibility to change missions without the expense of a recovery boat. An AUV could also be positioned at a remote docking station and be activated on demand -- for example, when underwater volcanic activity near Hawaii increases, said Alan Beam of the Lee, N.H.-based Autonomous Underwater Vehicle Application Center and a former program manager for UAVs at the Navy. "People have been working on the pieces to this for a long time. The key trick is to integrate it all to make it work," Beam said.

Woods Hole Oceanographic Institution in Falmouth has been researching underwater docking stations for more than a decade and has two projects underway. The Naval Postgraduate School will install a docking station made by Woods Hole in the coming months in the waters off Monterey, Calif. Like Bluefin Robotics' machine, the Woods Hole device has a funnel-shaped "entrance nozzle" to guide entering vehicles. The metal frame that holds AUVs in place is mounted on sleds anchored by lead weights. The station will use an undersea cable for power and transferring data, allowing Naval researchers to keep the vehicles in the water for long stretches.

"When you attach a subsea cable and run power through it, it means you can power and point the vehicle [out] for multiple missions. You have it recharge without bringing it back in, so you greatly minimize the expenses for ship operations," said Ben Allen, a senior engineer at Woods Hole Oceanographic Institution. "Within the research community, there's a lot of interest."

Woods Hole is also involved in a major scientific expedition, the National Science Foundation's Ocean Observatories Initiative, that will deploy docking stations at sea. The Pioneer Array on the edge of the Continental Shelf south of Martha's Vineyard will use a combination of surface moorings and unmanned vehicles to collect environmental data and high-resolution images.

Three AUVs, supplied by Hydroid LLC in Pocasset, will take measurements in concert with six self-propelled underwater gliders in 500 feet of water over 2,500 square miles. Having the docking stations will allow researchers to collect data over long periods of time and, using a two-way satellite link, send instructions to the AUVs to modify their sampling plans.

The surface moorings will also provide energy to the docking stations using a combination of solar panels, wind turbines, and fuel cells. In some applications, refueling stations can help keep up with the considerable power demands for transmitting data. The underwater engineering company Phoenix International used a Bluefin Robotics vehicle in the search this year for the downed plane of missing aviatrix Amelia Earhart in the South Pacific. A 20-hour mission can generate a terabyte of data of high-resolution images, sonar, and video, said Christopher Moore, AUV manager at Largo, Md.-based Phoenix International, creating bottlenecks in transmission and a drain on power.

"The limitations of these machines is power," he said. "You need power to move a lot of data in an efficient amount of time, recharge the batteries, and accept a new mission." For its docking station, Bluefin Robotics last fall ran an eight-hour demonstration in which an AUV was launched outside of Boston Harbor, rose to the surface to get its position using GPS, and then docked at the refueling station, which was erected on a scaffold about three meters off the bottom. One challenge was getting the AUV to enter the snug interior of the docking station on its own. To make the demonstration work, engineers needed to fine-tune the homing capabilities to ensure the robot approached the intake cone at the right angle and made a reliable connection inside, said Steve Somlyody, a senior systems engineer at Bluefin.

The system communicates via acoustic waves, which can be easily disrupted by other objects in the water, he said. Bluefin Robotics and Battelle said they will target the refueling station at applications that demand longer missions, such as where a network of AUVs monitor one area continuously.

The docking stations are coming along at an opportune moment for the young industry.

Many operators had kept their robots on a tight leash, out of fear of losing one, said Duane Fotheringham, vice president of operations at Hydroid.

"The interest in docking stations is to move the autonomy one step further and remove the men from the loop and take advantage of the robotics as much as possible," Fotheringham said.

"It's an evolution of the technology as people become more and more comfortable with underwater robotics."

Mitt Romney's Big Plans For USN - Adviser Lehman Says Goal Is 350-Ship Fleet

Republican Mitt Romney's campaign has steered clear of providing too many specifics when it comes to how he would govern as president. Defense has been no exception. While Romney and other campaign officials have pledged to raise the number of ships built per year from nine to "approximately 15," aimed at a fleet of about 350 ships, specifics

on how they would add more than 60 ships, and what types, have been vague. But in an exclusive interview, a top Romney defense adviser provided some details on the ambitious plans for the Navy.

John Lehman, President Ronald Reagan's 600-ship-era Navy secretary and one of the architects of Romney's plans for the military, sat down with Defense News on Oct. 4. Among the new details he revealed: Plans to create an 11th carrier air wing, one for each aircraft carrier. F/A-18 Super Hornet strike fighter production would continue beyond 2014. The amphibious fleet would be built up to the Marine Corps' requirement of 39 ships. An entirely new, battle-group-deployable frigate would be procured, along with a ballistic missile defense ship. The campaign has pledged to build more submarines and destroyers, and production of the littoral combat ship (LCS) would continue. Exact numbers of ships and aircraft continue to be reviewed, and Lehman made it clear the program continues to be evaluated and fleshed out.

Excerpts from the interview, edited for space and clarity

Q. What is your projected fleet size?

A. 350 is the plan of record. This is what the governor is currently campaigning on — 15 ships per year, 350 ships in 10 years.

Q. What would you be adding?

A. First, we'd continue the littoral combat ship, and we'd begin a battle group-deployable frigate program that would replace the FFG 7s [frigates]. And we would increase the numbers per year of the destroyers, and we would go for a missile defense ship that is optimized using an existing hull form, for the new Air Missile Defense Radar (AMDR), which really won't fit in the existing Arleigh Burke class.

We would also include getting up to the accepted requirement for Marine amphibious lift, so there'd be an increase in amphibious ships. The exact mix as between the different types, whether we go all for the LSD [landing ship dock replacement] versus the LHA+ [new assault ship] or some other mix, that hasn't been fully fleshed out yet. But there will be an increase in amphibs.

Q. Would your missile defense ship be based on the DDG 1000 design?

A. There's also the LPD 17 hull design [used on San Antonio-class amphibious ships]. I didn't say missile defense destroyer, I said missile defense ship, because to have the kind of power aperture needed for the new radar, there is always a conflict between a deployable battle group ship and a missile defense ship. The latter is in elevated [readiness condition], tied to a specific area. It can't deploy with the battle group.

To make it affordable, you have to have a hull that's not a brand-new ship, so it really comes down to between a DDG 1000 and an LPD 17. Both hulls and power capability are quite suitable for the missile defense ship. The basic hull and volume in the LPD 17 can take both the larger missiles and the radar, so the optimal power plant is not the one that's in it. It would probably be a diesel-based, maybe [combined diesel and gas turbine], or something like that. But that hasn't been detailed.

Q. There's no current Navy requirement for a fleet frigate.

A. The LCS has many useful roles, but one of them is not deploying with the battle groups. It doesn't have the range. What is needed is a replacement for the FFG 7. There's a clear need because the LCS is not able to fill the roles originally envisioned for it. It has some real uses, but one of them is not as a fleet deployer, not as a battle group deployer.

Q. This would be a new design, or an adoption of an existing design?

A. I think there will be examination of both existing hull forms and design aspects, to try and find the best in class in each of the elements — propulsion, hull and engineering, the weapons systems. Whether that ends up being a new design or an adaptation of another frigate, we're not that far along. It won't be a regional air defense [ship]. It will have self-defense capability and network ability to be part of the networked environment of the battle group. It won't necessarily be a full Aegis system.

But it has to be affordable. All of them have to be able to be competed. That's going back to the Reagan approach of having at least two sources for everything. It would be able to be competed yearly, as we did in the Reagan years, with the submarines, frigates, destroyers and cruisers. They were all annual competitions. It's what brought the cost down.

Q. Newport News and Electric Boat share equally in building the Virginia-class submarines. Would that continue, or would they compete to build the new SSBN(X) Ohio replacement?

A. That would be the intention, to enable both yards to build a full-up submarine and compete for them every year. And have sufficient submarines in the total program to enable them to do that.

Q. What would the new frigate cost?

A. I wouldn't put a number on it, but if you took the FFG 7 and made that in constant dollars today, that's a good target.

Q. So, between \$600 million and \$700 million. Can we say that?

A. Yeah.

Q. Would you review the LCS program?

A. I'll always be reviewing it, but there's no intention to cancel it. We're very much in favor of a high-low mix and having deployable ships. There are still a lot of questions with the weapon systems and the modular approach — whether that's the right long-term approach to arming the LCS is an open question. We have not done a lot of analysis on that yet.

Q. Are you committed to retaining 11 aircraft carriers?

A. Right now, 11 carriers is part of the plan, but also with 11 air wings. We'd have an air wing for every carrier. And we would almost immediately reverse the Obama decision to stop production of the F/A-18 Super Hornet in 2014. We think it's essential to keep the F-18s in production, as well as the F-35.

The actual mix of F-35s and F-18s on the air wings is something that will be looked at carefully.

Q. One carrier is always in a long-term refueling overhaul. What would you do with that extra wing?

A. We would go back to keeping a reserve wing fully modernized with the same equipment as an active air wing. And the ability to surge and get whatever carrier that's in overhaul out quickly — and there's nothing written in stone that a refueling overhaul has to take four years. They didn't used to take that long. If there's an emergency, remember what was done in World War II, how fast the carriers in dry dock were brought out and repaired. You can't just throw together an air wing like that. The principle is we would have an air wing for every deck.

Q. Would you bring forward the fighter replacement programmed now in the late 2020s?

A. One of the top priorities of the Romney program is to fundamentally change and fix the procurement mess. We used to be able to bring complex systems from initiation to deployment in seven years. Essentially, the F-16 only took about seven years. Polaris and Minuteman only took four years. And in those days, with comparatively primitive technology, there were far more complex challenges to integrate systems than even the F-22 today. F-22 took 22 years. In fact, according to the Defense Business Board, the average for the Department of Defense is 22 years. Well that's crazy.

Part of it is the lack of discipline in requirements; requirements are being added all the time.

After the first ship [of the DDG 51 Arleigh Burke class] we froze the design, and there were no more change orders unless it was life-threatening. There were constant attempts by DoD and parts of the Navy to add new bells and whistles and capabilities, more new systems. Part of the Navy really wanted hangars on them, and we said no, we're not going to do any changes.

At that time, every F-14 in the fleet was different. Change orders flowed in to the production without discipline. Every single F-14 had to have its own full record of its systems. No two were alike. That's the extreme of the indiscipline if you don't have a real firm grip on basic changes. And all that has been lost in the last 20 years or so. So that can bring the prices way down.

It's the same on airplanes. The number of changes on the F-35 design is beyond belief. There are so many entities in the joint requirements committees, in the defense establishment. They're all empowered to write requirement changes, that it's impossible to do a program at any affordable rate the way the system operates now.

Q. Would you make any changes in the procurement of the F-35 Joint Strike Fighter?

A. At this point, it's not possible to say. A lot is going to depend on whether they get the costs under control, particularly the flyaway costs. Until you know how much it's going to cost, you don't know how many you're going to fit into the program. That's why it's so essential to keep the Super Hornets in production so the mix can be flexed depending on how the F-35 actually pans out.

Q. The Navy has reduced its active-duty personnel force to about 321,000. Would you reverse the decline? If so, how high would you go to man those 350 ships?

A. The Navy and the Air Force have taken far deeper cuts than I think is prudent in the number of operational people. I think they're undermanning the ships. With the battle groups deploying for nine months now, almost back-to-back deployments, they're short now and they're going to get shorter when we see attrition.

All of the services have had a gross distortion put in, because they have to man their share of so many of these new, [joint task forces] that have been created, more for bureaucratic reasons. There are now 250 joint task forces, and they all require uniformed manning from all the services. Most of that is driven by Goldwater-Nichols, because you had to create joint billets so that every officer could get their four years on a joint staff.

And the Joint Staff itself in the Pentagon is, according to the Defense Business Board, almost three times the size of what it was during the Reagan administration, with half the size of the force.

So there's been this bureaucratic bloat, not driven by intention, but by the fact that all these new offices are created in [the Pentagon] and in the combatant commands and the functional commands, that you have to provide people for them. There's just not a requirement for that. So that needs to really have a real serious scrub, and those billets freed up for our operational Sailors.

Q. So first, you'd be looking at reallocating existing personnel?

A. Absolutely. How much of that can provide additional manning? We'll see. But the ships have to be manned to their effective readiness level. Not necessarily at a wartime level but to a deployable level, so that you're not letting the ships deteriorate and not making life so unpleasant for the Sailors at sea because they have to do two people's work at sea. So what that means in end strength for the Air Force and the Navy is a little hard to say at this point.

Q. Would you be cutting flag and general officers?

A. Part of the reason for the number of flag officers is the artificial creation of all these joint task forces and requirements offices. All the new bureaucracy that's been created over the years that is pure overhead. You've got to eliminate that before you size the number of flags you have. There will be no hesitation to cut flags if that is what is needed. And my guess is it probably will be needed in all the services.

Q. You'll need a bigger budget to pay for all these ships and people. How much bigger?

A. I wouldn't put a number on it until we see what kind of — we're not talking about we're going to run faster, jump higher, be more efficient. We're talking about fundamentally changing the method of doing business. This is something the governor, as a businessman, feels very strongly about, and I do, too. In fact, everybody on our defense advisory group feels the same, that there's just a huge amount of bloat that has developed over the years.

The bureaucracy itself has almost doubled what it was during the Reagan administration. The Navy is half the size it was, the Air Force is half the size, the Army is half the size.

Q. Is there any program right now that you would cut?

A. I wouldn't single out any program at this time. I think there'll be a hard look at all the programs. But that's not something the campaign is undertaking at this point, and won't until after the election.

Canada, U.S. eye mini-submarines - Special forces see stealthy ships as 'ideal fit'

OTTAWA — Special forces in both Canada and the United States are taking a close look at Canadian-made mini-submarines for the murky world of covert operations. The cutting-edge subs, some of which are built in Canada, are seen by some in the U.S. Special Forces community as essential for specialized top-secret operations against threats such as al-Qaida in coastal countries. One defence source in Washington, who spoke on background, said the U.S. navy has been impressed with the submarine rescue system it purchased a few years ago from B.C.-based International Submarine Engineering, which also sells 7.6 metre submersibles capable of carrying a handful of soldiers.

The elite, secretive U.S. Special Forces is interested and also believes the subs would "be an ideal fit" for their Canadian counterparts, said the source, who was not authorized to speak publicly. No program has been requested or planned, however, said Brig.-Gen. Denis Thompson, the commander of Canada's special forces. "It is an area of interest," Thompson said in an interview with The Canadian Press. "It is potentially another tool for the toolbox."

Domestic concerns and the safety of the highly trained soldiers were some of the reasons Thompson asked staff to examine the boats in the spring of last year. Rather than operating in waters far from home, the military is concerned about missions in the three cold oceans that border Canada. "Given the condition of the sea water that surrounds Canada, once you put a diver in the water, he really can, depending on the temperature of the water, only be effective for so long," said Thompson. "It's all about stealth and extending the time you can leave a guy submerged — and by submerged, I mean hidden, depending on what the mission set is."

In Canada, the ultra-secret special-forces commandos known as Joint Task Force 2 have been paying particular attention to the country's coastlines. Last year, it was revealed JTF-2 had turned to the private sector for help in early warning of possible terror threats coming from the sea. The organization tapped into an existing fisheries surveillance contract with Provincial Airlines Ltd., a subsidiary of Provincial Aerospace Ltd. of St. John's, N.L., to monitor the movements of vessels of interest off the country's coastline. At a rare public appearance last summer during the military's annual northern exercise, JTF-2 commandos stormed a mock "vessel of interest" at sea while the prime minister, the defence minister and the media looked on. The subs aren't cheap: Each one — some of them currently operate as underwater tour boats with up to 20 available seats — carries a price tag of \$5 million.

Sea Urchin Submersibles and Nuytco Research Ltd., a subsidiary of Can-Dive Construction Ltd., are the two other Vancouver companies with underwater technology that has caught the attention of the special forces community. Nuytco offers one-man and two-man deep sea diving suits. Can-Dive markets small diesel-electric submarines, but does not build them. Over the last 40 years, Vancouver has become a centre of excellence in deep-diving research and technology, said a May 4, 2011 briefing note prepared for Thompson.

Old Boats Never Die, They Get Recycled

October 12, 2012: While the U.S. Navy is willing to spend over half a billion dollars to repair fire damage inside the USS Miami (a Los Angeles class SSN or nuclear attack submarine), it is seeking ways to keep those costs down. One good idea is to salvage components from the recently (last year) decommissioned USS Memphis. This boat entered service in 1977, 13 years before the Miami. While the Memphis was one of the "original" 31 Los Angeles boats, and the Miami is one of the third generation (Improved Los Angeles) designs, both share many common components, especially in the forward part of the boat where Miami suffered most of its damage.

The Miami blaze occurred while the sub was in the Portsmouth (Maine) Naval Yard for maintenance and upgrades. Initially the navy estimated that the sub suffered \$400 million in damage. But a more detailed examination of the revealed that it would cost at least \$450 million and probably north of half a billion.

The fire (set by a deranged shipyard worker) took place last May 23rd and there were fears that the 22 year old Miami might be scrapped. It's not just fires that these old Los Angeles class boats have to worry about. Three years ago a 25mm (one inch) hairline crack was found on the pressure hull of the (then) 14 year old USS Toledo. The crack was in the metal plate, not a weld, which was replaced. Above the crack there was a 53 cm (21 inch) hairline crack in the outer (non-pressurized) hull, which was under the sail. The USS Toledo had just undergone a three year refit, costing \$179 million when these cracks were discovered. The sub was sent to a nearby (to New London, Connecticut)

shipyard for repairs. At first it was thought some of these cracks were related to a recent scandal where shipyard workers failed to check for substandard welds but that was not the case with the Toledo.

Such a crack in the pressure hull is a serious problem because it makes it more likely that the pressure hull would fail and flood the boat, at less than the "test depth" (about two thirds the "design depth," which is the maximum depth the sub can operate at). Going a little deeper gets you to the collapse (or "crush") depth, at which the pressure hull is crushed and implodes. The deepest diving U.S. subs, the Seawolf class, are believed to have a test depth of 490 meters (1,600 feet) and a collapse depth of 730 meters (2,400 feet). During World War II collapse depths were never more than 320 meters (a thousand feet). Since then, larger boats, built of stronger metals, have greatly increased the depth subs can operate at. But that only works if the crew knows the limits of their boats, and cracks in the pressure hull reduce those limits. Using Memphis components for the Miami repairs will enable close inspection of those items, to see if there was any more unexpected deterioration. The Miami hull has already been checked for any damage from the fire and none was found.

Both the Miami and the Toledo were among the latest "improved Los Angeles" boats. If the Miami were retired, a much older (in terms of technology) boat would have to delay retirement and fill in. Upgrading one of these older boats would also be expensive. If the repairs for the Miami do indeed cost less than half a billion, then it's worth keeping the Miami in service.

The navy is putting most of its cash into building new Virginia class boats to replace the 42 (of 62) remaining Los Angeles subs. The most recent of Los Angeles boats entered service in 1996, and will be gone by the end of the next decade. Nine Virginias are in service and another 21 are planned. If the navy can scrounge up enough cash it can build two a year they can have all the Virginias in service before the Los Angeles class is gone. Otherwise, the SSN fleet will shrink because additional old Los Angeles subs will be retiring compared to new Virginia's entering service.

Navy nuclear submarine, cruiser collide off East Coast; no injuries reported

A U.S. Navy nuclear submarine and an Aegis cruiser collided during routine training off the U.S. East Coast on Saturday afternoon. No one aboard either the USS Montpelier or the USS San Jacinto was injured, Pentagon officials told NBC News. Both vessels continued to operate under their own power. The Montpelier is a nuclear-powered Los Angeles-class fast attack sub launched in 1991. The San Jacinto is an Aegis-class missile cruiser commissioned in 1988.

"We have had circumstances where Navy vessels have collided at sea in the past, but they're fairly rare as to how often they do take place," Lt. Cmdr. Brian Badura of the Fleet Forces Command told The Associated Press.

"If we do have an incident that does take place, there are folks that swing into action ... to help us make a better, more conclusive explanation of exactly what happened," Badura added.

The Navy said in a news release that "overall damage to both ships is being evaluated," and that the sub's propulsion plant was "unaffected by the collision."

The Urgent Fight Against Waterborne IEDs

The Navy has recently begun work on three new contracts to build systems that will counter the threat posed by "water-IEDs" and other underwater perils in a sign that the Pentagon thinks the nature of warfare really is changing from land to water and it's time to shift focus, in an urgent way, to its accompanying threats. "The terrorist use of an IED will be in areas of vulnerability and areas where it has the ability to have access and influence policy," a Navy official told Situation Report. "And that includes the maritime [domain]."

Last year, Deputy Secretary of Defense Ash Carter charged what's known as the Senior Integration Group to come up with ways to counter water-borne explosive devices, maritime suicide missions, and other threats. Now, three contracts have been let in the past month to explore, under an accelerated timetable, what "candidate technologies" could mitigate Navy ships' exposure to such threats.

"Remember the Cole" has become the new refrain. The incident in 2000, 12 years ago Friday, when 17 Sailors were killed aboard the USS Cole in the Yemeni port of Aden, has become a new battle cry for those who see a shift from land-based threats to those in the water. But just like IEDs on land, solutions to the dangers posed in the water offer no easy solutions. "The underwater domain is an extremely challenging technical domain," the Navy official said. The particulars of the technologies funded by the three new contracts are largely classified and get wonky in a hurry. The Mobile Cueing with In-Volume and Bottom Search (MCIBS), the Swimmer Threat Identification System (STID), and the Sensor-Based Stabilized Remotely Operated Vehicle Waterborne-IED Identification and Neutralization (SSR-WIN) systems are all in accelerated development and might see the water within 12 months.

They are funded to the tune of about \$20 million total by the Joint Improvised Explosive Device Defeat Organization, or JIEDDO, which until now has been largely focused on land-based threats posed by IEDs and other devices. The effort is part of a broader one faced by the Navy. Thinking about mine warfare and other asymmetric threats in the water has been re-energized in recent years. And concern is growing about the military and economic vulnerabilities posed by maritime chokepoints such as the Strait of Malacca and the Strait of Hormuz. Use of small crafts, man-piloted IEDs, submersibles, unmanned underwater vehicles that can home in on a tanker or combat vessel all pose threats.

"All of them are possibilities," CSIS's Tony Cordesman told Situation Report. "And all of them are part of the Navy's growing concern." The Navy is particularly focused on the lessons it can draw from such groups as the Tamil Tigers, the Sri Lankan terrorist group whose signature attacks are those found in the water. "We want to be ahead of this problem versus behind this problem," the Navy official said. Asked about its work on water-borne devices, JIEDDO would say only that it is funding the three initiatives but referred any additional questions to the Navy.

"The three initiatives will enhance the ability of our military personnel to detect, assess, and mitigate Waterborne IED threats," said JIEDDO spokesman David Small. JIEDDO, which Congress has given a lot of money to counter the number one threat to American forces on the ground, now faces budget scrutiny as the United States winds down its ground presence abroad. So, as the nation shifts focus to air and naval assets and their vulnerability, JIEDDO is looking for ways to adapt.

"JIEDDO is trying to reinvent itself, of course," Cordesman told Situation Report

Indian, US Navies To Practice Rescue Of Sailors Trapped In Submarines

NEW DELHI: If an Indian submarine gets "disabled" deep underwater, the sailors are sunk since the country has only rudimentary submarine rescue facilities. Now, in a unique and complex endeavour, Indian and US navies are coming together to practice the rescue of "trapped" submariners from deep underwater.

The Indo-American submarine rescue exercise will kick off later this month, with the US Navy slated to fly down a submarine rescue system - a deep-submergence rescue vessel (DSRV) or a submarine rescue chamber (SRC) -- to Mumbai, sources said.

The DSRV or SRC will then be shipped to the exercise area, where it will dive deep underwater to "mate" with the "disabled" submarine to rescue sailors in an intricate manoeuvre rarely practiced by Indian sailors.

A DSRV or "mini submarine", equipped with pressurised chambers, sonars and cameras, can rescue 24 sailors at a time from a depth up to 610 metres after "mating" with a stricken vessel's hatch. At present, Indian sailors bank upon "submarine escape pressurized suits", or the help of diving support ships like INS Nireekshak, but they can be used only for relatively shallow depths.

Navy's endeavour to procure two DSRVs of its own, for about Rs 1,000 crore, has been hanging fire for well over a decade now. As an "interim measure", India had inked a contract with the US Navy in 1997 for its "global submarine rescue fly-away kit" service, paying an initial \$734,443 for it.

But the agreement got derailed due to the sanctions imposed after the Pokhran-II nuclear tests in 1998. It was later revived in 2004 but there was huge delay in setting up the requisite infrastructure needed for submarine rescue operations. It also included the fitting of "Padeyes" - holding devices welded into escape hatches of submarines to secure the DSRV - on Indian submarines. The American DSRV or SRC, as per the agreement, will be transported to India within 72 hours of an emergency. Proper submarine rescue facilities are critical for India since it has an ageing fleet of 14 diesel-electric submarines -- 10 Russian 'Kilo' class and four German HDW ones -- apart from the nuclear-powered INS Chakra leased from Russia earlier this year.

There are also six French Scorpene "killer" submarines, being constructed at Mazagon Docks under the Rs 23,562 crore 'Project-75', slated for delivery in 2015-2020, three years behind schedule. India also hopes to make its own nuclear submarine INS Arihant operational next year, which is to be followed by two additional "follow-on vessels".

Navy Fears Pentagon Neglects New Missile Sub; SSBN(X) Must Survive Almost 80 Years

WASHINGTON: Right now, the Navy is designing the ballistic missile submarine that will provide 70 percent of the nation's nuclear deterrent until 2080. Yet even as the service prepares to award research and development contracts this December, the submarine community is deeply worried that the rest of the military is neglecting the program -- which has already had to make some painful trade-offs on schedule, numbers, and capability. And the service has not even started work on whatever nuclear missile the new sub will end up carrying for the latter half of its life.

The SSBN(X) program to replace the 1980s-vintage Ohio missile subs is a massive effort that few non-submariners talk about. "People are assuming it away," said Rear Adm. Robert Thomas, a submarine officer who is now head of the strategic plans and policy section (J-5) on the Joint Staff.

Even Strategic Command, whose nuclear deterrence role is often overshadowed by its space and cyber missions, isn't focused on the aging missile subs, Thomas told the audience at the Naval Submarine League's annual conference: "I sit in the Tank and I listen to STRATCOM and frankly I don't hear them talking about Ohio replacement. We need to do better missionary work." It's easy to procrastinate because the timelines are so long. The first SSBN(X) will not deploy until 2031 -- which is already two years later than the original plan and starts after four Ohios will have already retired. That means the missile submarine fleet will drop to just 10 subs for over a decade. Even when all the new subs are in service, the fleet will stand at only 12 missile submarines, compared to 14 today.

What's less well known than the total numbers is how the Navy has cut back the new submarine's capabilities, something the top brass were remarkably candid about at the conference, especially for a service known for its persistent silence. "The Ohio replacement is not, is not a multi-mission platform," program manager Capt. William Brougham said at the conference. "My team is designing Ohio replacement with the singular mission of being the nation's [nuclear] strategic deterrent."

The original vision for the SSBN(X) would have cost \$7 billion a sub, a figure the Navy has brought down to \$5.6 billion and hopes to reduce to \$4.9 billion. To cut those costs, the Navy has cut capabilities across the board, but particularly for conventional combat against enemy subs and warships. According to official briefing slides, the revised design will have the "minimum [torpedo] capacity," "minimum acoustic sensors," and "reduced force protection features" in general, suited only for self-defense against enemy hunter-killer subs rather than for taking the offensive. (It will also have fewer and smaller launch tubes for nuclear missiles: 16 87-inch tubes instead of 20 97-inches). Some of the older warriors at the conference were skeptical. So what can SSBN(X) contribute to the fight, one asked, after it launches its ballistic missiles? The official Navy answer: They will remain focused on their strategic deterrent mission, not on conventional naval combat. The unspoken answer, of course, is that if things get bad enough that a sub has fired all its nuclear weapons, there won't be much of a planet left to fight over anyway.

"This is not like an SSN [attack sub]," Rear Adm. Barry Bruner, director of submarine warfare, summed up for reporters at the conference. "It's not a hunter-killer submarine." So the Ohio replacement's job is not to hunt: Its job is the traditional role of a boomer -- to hide and to hope its onboard Armageddon is never unleashed. The question in some quarters is whether it can hide well enough. The threat is not so much from traditional sonar as from "non-acoustic" systems, like magnetic detectors that can find the metal hull or satellites that can peer below the surface of the water. The Navy insists this is one area where they have not cut back, "not in terms of stealthiness and survivability," said Bruner.

The SSBN(X) will be built to evolve with the threats, as past subs have, including the possibility of new sensors and new stealth coatings, added Rear Adm. David Johnson, the program executive officer for all Navy submarines. But "there are some things you have to build in from the start," he said. "We haven't compromised on the stealth." Given the long lifespan of the sub, it's immensely difficult "to envision what the world's going to be like in 2050 or 2060," Bruner admitted. "There are technical breakthroughs all the time, but we've looked at trends in acoustic quieting and trends in non-acoustic performance, [and] we're convinced that the Ohio replacement is the right ship to take us through the rest of this century."

That extraordinary lifespan creates more complications than just forecasting anti-submarine threats. Most critical to the SSBN(X) mission is that the ballistic missile it will carry for the last half of its life hasn't been invented yet. When it enters service circa 2031, the Ohio replacement will carry the same Trident II D5 missile now standard on the Ohios, and as long as the D5s can do the job, said Bruner, "we'll wait as long as we can before we tackle that next big bill."

Major investment in the missile can only be put off so long, added Rear Adm. Terry Benedict, the Navy's director of strategic systems. "We will need to do something with the current D5 design between now and 2080," he said. "The system's not going to last that long." "We're not alone," Benedict added. The Air Force's mainstay Minuteman missile is aging, too, as is both service's inventory of nuclear warheads -- and there's no plan on the books to replace any of them. The minimum would be perpetual upgrades and service-life extensions to keep old missiles in service, as is already being done for the workhorse B-52 bomber. The maximum would be all-new missiles for each service -- or, perhaps, a single common missile for both.

Given budget constraints, "we may be forced to go to a revolutionary position of a joint ballistic missile," Benedict declared. That's a tremendous technical challenge. Submarine-launched missiles have to launch from underwater, something Air Force ICBMs do not. They have to fit not in roomy silos but in narrow tubes -- especially since the Navy shrank the SSBN(X)'s tubes from 97 inch diameter to 84 inches to save costs. A new missile could be, at maximum, no larger than today's D5.

Benedict assured the assembled submariners at the conference that the Navy would not compromise its unique requirements, and a common missile with the Air Force may not be practical. But the two services will definitely collaborate on research, development, and building components that can be used in both their arsenals, like

gyroscopes and constituents for rocket fuel. (The Navy needs a unique fuel mix, but some of the ingredients can be shared with the Air Force and NASA).

Just before the Submarine League conference, Benedict said, he had visited Barksdale Air Force Base to talk missile cooperation with 20 Air Force generals and Senior Executive Service civilians. "The future is going to be much more intertwined between these two services," Benedict said. "Collaboration and commonality is not an option, it is a requirement."

The other crucial partner on ballistic missiles is the United Kingdom, whose only remaining nuclear weapons are on its Vanguard submarines. Ironically, the Navy has a better record of collaboration with the Brits than with America's Air Force. The Royal Navy has relied on U.S.-designed missiles since the Polaris Sales Agreement was signed in 1963. Even after the Americans delayed the SSBN(X) program by two years, they stuck to the original schedule to develop the missile compartment so it would be ready in time for the British could use the design in their own new missile submarine, which must enter service two years before the American sub.

So all together, the new submarine and its missiles are an extremely costly, complex, international effort with long lead times. Chief of Naval Operations Adm. Jonathan Greenert signed off on the requirements for SSBN(X) this August; the Capability Development Document, or CDD, must now pass muster before the all-service Joint Requirements Oversight Council in time for detailed design work to begin in 2017. Even though the first sub will not hit the water until 2028, once those requirements and designs are set, changing them is a recipe for disastrous cost overruns and delays, as the Navy found out with its first two Littoral Combat Ships.

"This ship is going to take us through this century, so not only through my children's lives but through my children's children's lives and maybe even their children," said Bruner, "so we have to make sure we're building the right ship."

Defence urged to lease US subs

AUSTRALIA should lease nuclear submarines from the US instead of building a fleet of new conventional submarines, says a report from a conservative think tank. The Centre for Independent Studies report released today says Virginia-class nuclear attack submarines would be bigger than any conventional submarine Australia could buy or build, so they could carry more weapons and equipment, travel much faster, and cover immense distances without needing to be refuelled. Report author Simon Cowan, a research fellow at the centre, says in the report that the government's promised Future Submarine Project is a risky proposition. "The government is ignoring submarines that offer better value for money," he says.

"Australia needs world-class submarines and the US Virginia-class looks like the best option. "Nuclear-powered submarines are superior in almost every way to diesel-powered submarines -- they can travel further, faster and stay deployed for longer, and they have more powerful weapons, systems and sensors." Mr Cowan notes that the safety record of the US Virginia-class subs is flawless. "These subs don't carry nuclear weapons and never need refuelling and if Australia leases them from the US, the US could dispose of spent nuclear material," he says.

"While establishing an Australian nuclear program would have its challenges, leasing eight Virginia-class submarines is a capable, reliable and safe option for our naval servicemen and women. "Australia could also save more than \$10 billion by leasing eight Virginia-class submarines and up to \$750 million a year on operational and maintenance costs as well." Professor Paul Dibb, a former senior Defence official, is one of many who have warned against Australia buying a nuclear submarine. He said yesterday that Australia's lack of a civil or military nuclear industry would make it completely dependent on a foreign power to maintain a nuclear submarine fleet. He warned that relying on even as close an ally as the US to that extent would remove much of Australia's sovereignty over such a powerful weapon.

SUBVETS NEWS & VIEWS

Planning any Military mail for Christmas?

APO/FPO Holiday Mailing Dates: The Naval Supply Systems Command's (NAVSUP) Postal Policy Division mail-by dates for pre-Dec. 25, delivery of holiday cards, letters, and packages were announced 5 SEP. The dates are as follows:

Shore APO/FPO/DPO AE zips 090-098 (except 093)AA zips 340AP zips 962-966

* Express Mail: Dec. 17

* First-Class Mail (letters/cards and priority mail): Dec. 10

* Parcel Airlift Mail: Dec. 3

* Space Available Mail: Nov 26

* Parcel Post: Nov. 13

Shore APO/FPO/DPO AE ZIP 093

- * Express mail Military Service: N/A
- * First-Class Letters/Cards/Priority Mail: Dec. 3
- * Parcel Airlift Mail: Dec. 1
- * Space Available Mail: Nov. 26
- * Parcel Post: Nov. 13

Customers are cautioned that packages must not be mailed in boxes that have markings related to any type of hazardous material, such as bleach, alcohol, or cleaning fluids. Parcels found by the U.S. Postal Service with such markings or labels on the outside of the box will not be processed.

The last survivor of the sinking of USS Sculpin in WWII has gone on Eternal Patrol

Joseph N. Baker, Jr., a resident of Medfield MS for the past eight years, and formerly of Westwood (for almost fifty years) and of Great Barrington, died Sunday, September 23rd, 2012 at his home in Medfield. He was 87.

Joseph was born November 19, 1924 in New York City, New York, the son of Joseph N. and Mary (Gallagher) Baker. He attended Great Barrington High School until the attack on Pearl Harbor in 1942 when he joined the US Navy.

He was stationed on the USS Sperry, a submarine tender, and on the USS Sculpin, a sargo class submarine that saw action in the South China Sea and the Asiatic Pacific.

On Joseph's 19th birthday the Sculpin came under a withering depth charge attack from the Japanese destroyer Yamagumo which crippled the sub. The Sculpin was abandoned and scuttled and the 41 survivors were picked up by the Yamagumo. After questioning for ten days at the Japanese naval base at Truk Joseph was sent to the Ashio copper mines for the duration of the war until he was liberated from the Japanese prisoner of war camp after VJ Day. He was awarded the Purple Heart.

Joe's record of service is recorded in the Eternal Patrol section of www.ussvi.org

USSVI Memorial Plaque progress at the Navy Memorial in Washington DC

As part of the 50th Anniversary of USSVI initiative, the American Submariners of USSVI will place a Memorial Plaque on the historic Commemorative Plaque Wall at the prestigious U.S. Navy Memorial and Navy Heritage Center on Pennsylvania Ave in Washington, DC.

Known as the Memorial "Quarterdeck of the Navy", to date over 600 ships, squadrons, Navy veterans and Navy family plaques have been installed on the Wall.

The plaque is a 14 inch by 14 inch aluminum plaque with the graphics photo etched on to the plaque so it will last over 200 years.

This project was announced at the 2011 convention and we have gathered in donations approaching \$ 6,000 to date of the \$10,000 needed.

All Submarine Veterans and their supporters are urged to donate to this tax deductible, Navy Memorial Plaque project. This is an outstanding way for us to remember our shipmates and be recognized for serving our great country in the Silent Service. Please respond ASAP using the info below so that we might completely fund this project and hold a memorable Dedication Ceremony on the 50th Anniversary of USSVI at the US Navy Memorial in Washington, DC.

This ceremony will be open to all Submariners and their supporters.

Send your tax deductible contribution made payable to USSVCF and marked for 'Navy Plaque Fund' to

United States Submarine Veterans
PO Box 3870
Silverdale WA 98383

<http://ussvi.wordpress.com/2011/11/22/national-memorial-plaque-in-washington-dc/>

Museum Ships: Fading Away Expensively

There is a growing crisis in dealing with the growing cost of maintaining old warships maintained as museums and tourist attractions. Most of these vessels are in the water and literally rusting away. Many are now in need of major refurbishment, which can cost over \$100 million for a carrier or battleship. Even smaller ships (cruisers, destroyers and submarines) can require over \$20 million to put back into shape to just sit in the water, receive visitors and not sink or fall apart the next time a major storm hits. Most of the largest of these museum ships are American, largely because the U.S. has had the largest fleet in the world for nearly a century.

Go to the link for the story...

<http://www.strategypage.com/htmw/htmorale/articles/20121007.aspx>

50th USS Thresher Memorial Service Invitation to all USSVI Members

On April 6, 2013, United States Submarine Veterans Thresher Base along with the Commander, Portsmouth Naval Shipyard will jointly host the 50th Annual USS Thresher Memorial Service, honoring the memories of the 129 men lost aboard USS Thresher on April 10, 1963.

The service will be held at the Portsmouth Naval Shipyard starting at 1300.

Our invited keynote speaker is the Navy's most senior submariner, Admiral Jonathan W. Greenert, Chief of Naval Operations.

A reception area will be up adjacent to the memorial service area, featuring the USS Thresher family storyboards. The post-service reception is open to all and will include light refreshments.

Join us in celebrating the lives of the men lost by showing your gratitude and support to the family members they left behind simply by showing up in uniform and taking time to meet the family members.

Many of the children of the men lost were too young to remember their fathers, and they have a strong desire to learn and connect with them. If you knew one of the men lost, you have the unique ability to provide them with a direct connection to their fathers, sharing information they will treasure for the rest of their lives and pass on to subsequent generations.

Some of the children will be attending our service for the first time, a number of which have never been aboard a submarine. As a submarine veteran, you can provide the family members with an increased understanding of what their father experienced while serving aboard a submarine.

The event will be open to those who have received and RSVP'd to a formal invitation, and by those who possess a current military ID (active duty and retired). If you do not have a current military ID and would like to be added to the invitation and PNS gate security access list, please email Kevin Galeaz at thresherbase@comcast.net with your address, and with the names and addresses of those that will attend along with you to permit PNS access security vetting. Those without email access can leave me a detailed phone message at 603-232-6201.

If you are unable to be with us in person, please consider contributing to the pre-service slide and video presentation with an email or video message from your Base to the family and former crew members in attendance. The memorial service will be filmed and transmitted via satellite over the internet by the Defense Video & Imagery Distribution System on the website:

<http://www.dvidshub.net/>.

I encourage your Base to consider viewing the event live as a group, joining with us to perpetuate the memories of the men lost aboard USS Thresher (SSN-593) on April 10, 1963.

Fraternally,
Kevin

Kevin Galeaz
USSVI Thresher Base Commander
ThresherBase@comcast.net
<http://www.thresherbase.org/>
603.785.6464

USSVI Scholarship Applications for 2013 year

The USSVI "Sub Vet" Scholarship Board is pleased to announce they are now accepting requests for USSVI Scholarship Applications by three ways:

1. Send an Email or snail mail to the National Scholarship Chairman at Paul Wm. Orstad, 30 Surrey Lane, Norwich, CT 06360-6541. Email is hogan343@aol.com .
2. Call and request one by phone at 1-860-334-6457, or
3. Go to web Page and on left side click on "Charitable Fund" in Blue, Then Click on "Scholarships" on top left side, Then Click on "Application" on top left side. Then Click on the application, cover letter and hint sheets. DON'T Click on Manual as you will be confused. If not sure please call the Scholarship Chair who will gladly help you out to get your application.

Montpelier and Aegis Cruiser

The below link shows video of Montpelier and the Aegis Cruiser coming into port after the collision. Looks to me as if, as it was ascending to periscope depth, the Montpelier saw the Cruiser from its periscope (modern video 360 degrees) and did an "emergency deep", which moved the stern upward as it angled downward, and the rudder got sheared off by the collision with the cruiser. It may still have part of its rudder left (down below)--enough to be able to steer into port.

<http://blogs.defensenews.com/intercepts/2012/10/photos-from-submarine-cruiser-collision-off-florida-coast/>

VADM Connor says: Navy Must Rebuild Torpedo Inventory And Increase Range

The Navy needs to rebuild its torpedo inventory and extend the range of its torpedoes because the service can detect targets at a greater range due to improved technology, according to the submarine forces commander.

Combatant commanders continue to assign more targets to the submarine force due to the fleet's ability to reach them, and technology could further improve a torpedo's range, Vice Adm. Michael Connor said October 17 at the Naval Submarine League's annual symposium in Falls Church, VA.

Connor said existing internal navigation technology can aid the torpedo in reaching long-range targets as long as the service is willing to compromise a little bit of top-end speed.

"First off, we must rebuild that [torpedo] inventory and we also need to extend the range in which we target critical targets and the range of our current torpedoes," he explained.

In the future, the service hopes to design a modular torpedo. However, Rear Adm. Barry Bruner, undersea warfare division director, said during the symposium it is tough to start a new program in the fiscal environment.

A modular torpedo could allow the service to add a larger or smaller engine to allow the torpedo to travel at a faster or slower rate, Bruner said.

Another possibility is in a mode in the torpedo so that it can become a mine, Connor said.

"Our torpedoes need to function more or less in a mine mode," he explained.

"We're doing some work looking at what precise navigation is available."

Another possibility is developing a mine variant that could be implemented on some torpedoes, Rear Adm. Frank Caldwell, Pacific submarine force commander, said during the symposium.

The Navy could modify hardware and software on the service's current torpedoes, but right now that is too expensive, Bruner said.

The Navy has not built a torpedo in 16 years, and the service recently released a request for information to determine what its options are for increasing its Mark 48 torpedo inventory by restarting the program.

"The Mark 48 [all-up-round] torpedo is a high-performance, self-propelled underwater vehicle that contains complex electronic and mechanical subassembly systems for providing propulsion, steering, navigation, and target detection," the Sept. 26 RFI reads. "The system technologies include acoustic sonar, guidance and control electronics, electrical power, hydraulic systems, mechanical pumps and propulsion."

The Mark 48 torpedo is the Navy's primary launched anti-submarine and anti-surface warfare weapon. It is the submarine force's only torpedo and is used aboard all classes of submarines.

"One concept is to have industry provide us individual parts and sections and then have the government put it together and deliver an all-up-round weapon," Rear Adm. David Johnson, program executive officer for submarines, said during the symposium.

Johnson pointed out that the warhead could be replaced with another payload or a propulsion system to give the service a truly modular torpedo.

The Navy expects to award one or more contracts in the second half of fiscal year 2015 to increase its torpedo inventory, the RFI states.

Joe Lieberman to be named 'honorary submariner'

GROTON, Conn. (AP) - U.S. Navy officials are recognizing U.S. Sen. Joe Lieberman's support by naming him an "honorary submariner."

Officers including Rear Adm. Richard Breckenridge, commander of Submarine Group Two, are planning to make the presentation Wednesday in Groton when Lieberman visits the Naval Submarine Base and tours the newest submarine in the fleet, the USS Mississippi.

Officials at the base say they wanted to honor Lieberman's support of the submarine force, sailors and military families in southeastern Connecticut.

Lieberman, an independent, has been a U.S. senator since 1989 and is a member of the Senate Armed Services Committee. He is retiring at the end of this session rather than seeking re-election.

Navy & Veteran News and Other Gouge

Retirees Beware of Auto Sales from the "Exchange"

A military retiree publication is warning retirees of misleading advertisements in Auto Trader magazine and major metropolitan newspapers offering automobile sales through a company calling itself "Exchange Inc." Military exchanges do not have the authority to sell vehicles in the continental United States and these advertisements have left consumers from Texas to Colorado with the impression they are doing business with the Department of Defense's (DoD) Exchanges

Military Exchange facilities are located solely on military installations. While military exchanges have mail order and Internet offerings, they do not advertise in civilian outlets such as metropolitan newspapers or automobile sales magazines. All advertisements for legitimate Exchange offerings are published in outlets whose audiences are mostly comprised of military members.

Concurrent Receipt Update

Congress is scheduled to return the week of November 13, 2012, and will be working on the FY 2013 NDAA. Senate Majority Leader Harry Reid (Nev.) has indicated that he will offer a Senate floor amendment that seeks to authorize comprehensive concurrent receipt of military retired pay and veterans disability compensation for all disabled retirees, including those with less than 20 years of service who have been medically retired (Chapter 61). The amendment is similar to Reid's "The Retired Pay Restoration Act" (S. 344), introduced in February of 2011.

Shipmates are urged to use the Action Center to contact their elected officials on this important Senate amendment at:

<http://www.capwiz.com/fra/issues/alert/?alertid=53115581>

Diet COLA for 2013

The Bureau of Labor Statistics announced this week that the official Cost of Living Adjustment (COLA) increase for 2013 is 1.7 percent. This increase is less than last year's 3.6 percent COLA and will be reflected in military retired pay, VA benefits for disabled veterans, survivor annuities, and Social Security benefits for next year. The increase is effective on December 1, 2012, and will be reflected in December 31, 2012, checks.

The Consumer Price Index (CPI) determines the rate of inflation and is used to calculate the annual COLA. The CPI is based on the cost of a "basket of goods" for the average American during the period from October 1 to September 30 each year.

VA Releases Fact Sheet

The Department of Veterans Affairs (VA) has released a new and updated fact sheet on VA pension programs that includes important information for veterans, survivors and their families. The fact sheet explains who is eligible to receive pension benefits, and who is eligible for "aid and attendance." The document also provides a website list of accredited representatives that are available to assist claimants with preparation, presentation and prosecution of a claim for VA benefits. The information is accessible via the VBA Internet website link at

http://www.vba.va.gov/VBA/docs/PensionProgramInfo_final.pdf

President Signs Military Commercial Drivers License Act

President Obama recently signed FRA-supported legislation into law. "The Military Commercial Drivers License Act" (S. 3624), sponsored by Senator Olympia Snowe (Maine), requires the U.S. Department of Transportation to accelerate licensing procedures to assist veterans acquiring commercial driver's licenses. The bill eliminates a previous restriction that only allowed veterans to obtain a commercial license in their home state of record. Now service personnel can apply their military training and earn a commercial license where they are stationed, which will help them obtain a civilian employment following their service.

Service Members' Growing Student Loan Debt

Secretary of Defense Leon Panetta; Holly Petraeus, assistant director of the Consumer Financial Protection Bureau (CFPB) Office of Service Members Affairs, and Chuck Milan, acting deputy assistant secretary of Defense for Military Community and Family Policy, participated in a press conference last week to discuss the unique obstacles reported by service members seeking to pay off student loan debt. According to a new CFPB report, 41 percent of active duty service members are paying off education-related loans. Panetta stated that financial health of military personnel is important and that financial difficulties are the number one reason service members lose their security clearance.

For more information about how the CFPB can help service members and student borrowers, visit:

<http://www.consumerfinance.gov/servicemembers>

<http://www.consumerfinance.gov/students>

TRICARE Prime Service Areas to be Reduced

According to press reports, the Department of Defense (DoD) is apparently planning to eliminate TRICARE Prime availability in several states and cities in the TRICARE West region, beginning on April 1, 2013. With some exceptions, most Prime beneficiaries in these areas will be moved to TRICARE Standard coverage, a more costly fee-for-service TRICARE option. Affected beneficiaries include retirees, Active Guard and Reserve troops, and family members in Iowa, Minnesota and Oregon, as well as in Reno, Nev., and Springfield, Mo.

DoD is not commenting on the plan, however, under new TRICARE contracts, TRICARE Management Activity (TMA) is only required to provide TRICARE Prime coverage to beneficiaries who live within 40 miles of a Military Treatment Facility (MTF) and in areas affected by the 2005 base realignment and closure (BRAC) process. New contracts awarded in 2010 specified that DoD would only pay for Prime in the vicinity of MTFs and numerous appeals of the contract awards have delayed this action.

Exceptions to the new policy may be authorized for some beneficiaries if there is a network of providers beyond the 40-mile limit and within 100 miles of the beneficiary. FRA is closely monitoring this and will provide additional information as it becomes available.

Electronic TRS and TRR Payments

TRICARE Reserve Select (TRS) and TRICARE Retired Reserve (TRR) beneficiaries who currently pay monthly premiums by check must begin making payments electronically before Jan. 1, 2013. TRICARE Management Activity (TMA) will only accept monthly premium payments by recurring automatic credit or debit card transactions, or by recurring electronic funds transfer (EFT) from a linked bank account.

Current TRR and TRS beneficiaries should have received notice from the Defense Manpower Data Center. Failure to pay premiums electronically by the due date will result in termination of coverage. For more information, visit

<http://www.tricare.mil/mediacenter/news.aspx?fid=751>

On The Web

Some Websites and Blogs of Interest to USSVICB Members

[USSVI Blog](#)

[US Naval Institute](#)

[Naval History And Heritage Command](#)

[Royal Navy Submarines](#)

[Medals Of America](#)

(email your favorite links for publication to [steve](#))

Navy History

HMS Conqueror's biggest secret: a raid on Russia

The submarine that sank the Argentine cruiser General Belgrano during the Falklands war was involved in a much more daring and dangerous Cold War operation only weeks later
By Neil Tweedie

6:10AM BST 12 Oct 2012

It was dark, in the early hours, and the sea was freezing as Her Majesty's Submarine Conqueror came to periscope depth. Her captain, Christopher Wreford-Brown, had been stalking his target methodically, a hunter in pursuit of wary prey. There she was, 1,000 yards ahead, slow-moving, seemingly unaware of the submarine coming up on her tail. Gathered around Commander Wreford-Brown in the darkened operations room, officers and men waited in silence, inner tension masked by outward calm. It was 1982 and this was the real thing.

HMS Conqueror is famous, some would say notorious, for sinking the Argentinian cruiser General Belgrano. The nuclear-powered attack submarine, a type also known menacingly as a hunter-killer, that year became the first of her kind to fire in anger. The Belgrano was sent to bottom in short order, her ancient hull rent by two torpedoes: 323 men, many of them young conscripts, died. The Falklands war began in earnest that day, May 2 1982.

But the ship now in the crosswires was not the Belgrano. This was August, almost two months after the liberation of the Falklands, and on the other side of the world, in the Barents Sea, backyard of the mighty Soviet Northern Fleet. Conqueror was sailing as close to Russian territorial waters as was legally allowed - or maybe closer. Submariners, a tight-knit community, politely disdainful of their surface counterparts, joke that there are two types of naval vessel: submarines and targets. Wreford-Brown's target was a spy trawler - an AGI in Nato parlance, meaning Auxiliary General Intelligence. Crammed with interception and detection equipment, they were a ubiquitous presence during the Cold War, shadowing Nato exercises or loitering off naval bases.

This one was special: Polish-flagged, she was pulling a device long coveted by the British and Americans, a two-mile string of hydrophones known as a towed-array sonar. It was the latest thing in Soviet submarine-detection technology and Conqueror's job was to steal it. To do so, the bow was equipped with electronically controlled pincers, provided by the Americans, to gnaw through the three-inch-thick steel cable connecting it to the trawler. The name of this audacious exercise in piracy? Operation Barmaid.

Thirty years on, and the story of this mission, classified Top Secret to this day, is being told. It may be that the Russian government is learning for the first time the fate of what was one of its most closely guarded devices.

"This was a quite remarkable feat, a daring exploit that carried with it immense risk," says the documentary maker Stuart Prebble, whose new book, *Secrets of the Conqueror*, discloses the existence of Barmaid. "When we think of the Cold War we think of Cuba and Berlin and missiles and tanks, but it was at sea, and under the sea in particular, where the East-West struggle was often at its most dangerous.

"I have known about Barmaid for nearly 30 years and two years ago I approached the Ministry of Defence and asked that its details be released under the 30-year rule. They spent eight months thinking about it and eventually came back and said no. Their final position was that, although they wouldn't help, they wouldn't try to stop me writing about it."

Throughout the 1950s and 1960s the Anglo-Americans rested on their laurels, confident of their superiority in naval technology over the fledgling Soviet fleet. But as the 1970s wore on that confidence was eroded. Soviet submarines were not just becoming quieter and faster, they were able to turn the tables on their supposedly more advanced Western opponents. Submariners call it "bouncing", the practice of creeping up on a hostile submarine before switching on active, wave-emitting sonar. The deafening ping in the earphones of the target crew tells them: "I'm here. If this was a war, you'd be dead."

Towed-array sonar is different. It is passive and does not emit a signal. It floats at a prescribed depth, trailing behind a ship or submarine, simply listening for enemy submarines. Because the hydrophones are spaced out, they can achieve a multi-dimensional fix on a target, and are less vulnerable to noise from the host vessel. The American and British navies imagined themselves to be far ahead in this technology and were disturbed to discover that the Russians were matching them.

Had they caught up through ingenuity, or by spying?

The issue was sensitive for the British, who had been plagued by spy scandals in the post-war period. The "Portland Spy Ring" had betrayed naval secrets, as had the Admiralty clerk John Vassall. The Americans took the lead, conceiving a project to capture a towed array and discover its origins. General Dynamics, supplier of kit to the CIA, built the pincer equipment, which was installed in British submarines. But why not use the bigger US Navy?

"There are two schools of thought about that," says Prebble, a former editor of *World in Action*. "The British believed they were selected because they had more skilled submariners, and exercises do seem to bear this out. British submariners tend not to play by the book to the extent that the Americans do."

"The more cynical view has it that if a British sub was caught the diplomatic fall-out would be less severe than if an American one was involved. No one wanted to provoke a superpower confrontation."

Cutting a towed-array cable and making it look like an accidental loss was no easy task. Before *Conqueror* was fitted with the television-guided pincers, her sister ship *HMS Churchill* had tried to steam through an array to sever it from the towing ship. She was damaged and depth-charged for her pains. *Conqueror* made two attempts to use the pincers, in the Barents Sea and the Mediterranean, before her final attempt in August.

"When crews heard about these pincers, everybody thought it was absolutely crazy," says Prebble. "Their use demanded the most brilliant seamanship, coming up from below into the array's blind spot and edging towards the cutting point only a few yards from the tow ship. The pincers were designed to gnaw rather than slice cleanly to give the impression that the array had snagged on an underwater obstacle and been torn off."

There, then, was Wreford-Brown, staring through his periscope that August night. The TV cameras were useless until a few inches from the target, so black was the Arctic water. Wreford-Brown and his officers had to fall back on mental arithmetic to calculate their distance from the target.

"That was the genius of the exercise," says Prebble. "There is a way of approaching the blind spot that involves going deep and then coming up at an angle, literally below the vessel."

The trawler's propeller was feet away from *Conqueror*'s hull. A momentary miscalculation and a collision was inevitable. But nerves held and a connection was made. The pincer blades gnawed, and in seconds that seemed like hours the array was freed. Clamps held on to the cable as *Conqueror* dropped away to a safe depth, trailing the array by her side.

"Everyone in the control room was tense," says one of those present. "We were expecting at any time that we would be discovered and were ready to run, if necessary."

None of the crewmen who spoke to Prebble was prepared to confirm *Conqueror*'s position but the suspicion is that the operation took place inside Soviet territorial waters, just three miles from the coast. If discovered, the sub would have faced attack from Russian air and naval units. Once *Conqueror* reached a safe distance, divers were sent out to secure the array. The submarine later surfaced so that they could swim out again to haul the device aboard and bundle it in the hull.

Did the crew of the AGI know what had happened? Even if they suspected foul play it would not have been in their interests to admit it to their superiors. A sojourn in the gulag might have followed.

Immediately after Conqueror reached her base on the Clyde, the array was put on to an aircraft and sent for analysis in the United States. It is said that the name Conqueror was whispered with a certain reverence in the Pentagon for some time afterwards.

Following the sinking of the Belgrano, much speculation surrounded the disappearance of the Conqueror's logs. The assumption in some quarters was that they had been destroyed to conceal embarrassing details about the submarine's movements before and after the attack on the cruiser. Prebble thinks otherwise. "I believe the logs were shredded or incinerated to hide the Barents Sea operation," he says. "This was a top-secret mission."

The submarine arm is known as the Silent Service, partly because of its stealthy approach to warfare but also because of the secrecy attending its activities. Rarely does it receive public praise. Now, at least, we know of Operation Barmaid. The Conqueror's crew had to celebrate their triumph in secret. Let's hope they enjoyed a pint or two.

Why the Scorpion (SSN-589) Was Lost on 22 May 1968

When the US nuclear submarine Scorpion was lost in the east central Atlantic on 22 May 1968, the event produced a series of acoustic signals detected by underwater sensors on both sides of the Atlantic.

By comparing the detection times of these signals, the position of the Scorpion was determined. That position provided the basis for the search that identified the Scorpion wreckage.

The first reanalysis of these acoustic signals in 40-years, in combination with conclusions drawn in 1970 by the Scorpion Structural Analysis Group (SAG), has provided the following new information:

- The initiating events that caused the loss of Scorpion were two explosions with an energy yield of not more than 20-lbs of TNT each. These explosions, which occurred one-half second apart at 18:20:44 Greenwich Mean Time (GMT) on the 22 May 1968, were contained within the Scorpion pressure-hull,

- Based on the examination and microscopic, spectrographic and X-ray diffraction analysis of a section of the Scorpion TLX-53-A main storage battery cover recovered by the U.S. submersible, Trieste-II, the SAG determined the battery exploded before flooding of the battery well occurred.

- Collectively, the acoustic data and the physical evidence confirm Scorpion was lost because of two explosions that involved the ignition of hydrogen out gassed by the battery, i.e., these explosions were the initiating events responsible for the loss of Scorpion.

- These explosive events prevented the crew from maintaining depth-control. The Scorpion pressure-hull and all internal compartments collapsed in 0.112-seconds at 18:42:34 GMT on 22 May 1968 at a depth of 1530-feet. The energy yield of that event was equal to the explosion of 13,200 lbs of TNT, the essentially instantaneous conversion of potential energy (680 psi sea pressure) to kinetic energy, the motion of the water-ram which entered the pressure-hull at supersonic velocity.

- The more than 15 acoustic events that occurred during the 199-second period following pressure-hull collapse were produced by the collapse of more pressure-resistant structures, including the six torpedo tubes, within the wreckage.

- Reanalysis of the acoustic data also confirmed:

- (1) Scorpion did not reverse course to deal with a torpedo conjectured to have become active in its launch tube;
- (2), there were no acoustic detections of either a torpedo or any other naval surface ship or submarine when Scorpion was lost,
- (3), there were no explosive events external to the Scorpion pressure-hull.

In summary, Scorpion was lost because two battery-associated explosions created onboard problems the crew could not overcome. There was no Soviet involvement.

This information has been provided to the Chief of Naval Operations, OPNAV N87, the Office of Naval Intelligence (ONI), Commander Submarine Forces, and the Naval History and Heritage Command.

Source: analysis of acoustic data that has been in the public domain for over 40-years.

Analyst: B. Rule, for 42-years, the lead acoustic analyst at ONI, the national laboratory for passive acoustic analysis.

LITTLE KNOWN FACTS ABOUT SUBMARINES

The first Japanese casualty to American arms during WW-II was an aircraft shot down on Dec. 7th, 1941 by the Tautog (SS199)

The first submarine force casualty suffered in WW-II was G. A. Myers, Seaman 2, shot through the right lung when Cachalot (SS170) was strafed during the Pearl Harbor raid.

The first "live" torpedoes to be fired by a Pearl Harbor submarine was fired by the Triton (SS 201)(Lent), 4 stern tubes fired on the night of Dec. 10, 1941.

The first Pearl Harbor boat to be depth charged was the Plunger(SS 179) (White) on Jan. 4, 1942 - 24 charges.

The first "down the throat" shot was fired by Pompano on Jan. 17, 1942.

The first Japanese warship to be sunk was torpedoed by Gudgeon (Grenfell) at 9 AM on Jan. 27, 1942, the IJN I-173 (SS).

The first major Japanese warship lost to submarines during WW-II was the heavy cruiser Kako that fell victim to S-44 (Moore) on Aug. 10, 1942.

The first submarine to fire on a battleship was Flying Fish (Donaho) Sept. 1942, damaging a Kongo class BB.
The first submarine to fire on an aircraft carrier was Trout (Ramage), Damaging Taiyo, August 28, 1942.

The first Japanese ship to be sunk by gunfire was by Triton (Kirkpatrick), near Marcus Island on Feb. 17, 1942. At the time, Kirkpatrick was the youngest skipper to get command at Pearl.

The first man to die in submarine gun action was Michael Harbin, on Silversides, May 1942.

The first rest camp for submarine crews was established at a military encampment at Malang, in the mountains of Java, 89 miles from Soerabaya. Three days were allotted to submarine crews there in January 1942.

The first TDC (Mark 1) was installed in the Cachalot.

The Plunger was the first boat to sustain an "arduous" depth charge attack and survive.

In September 1936, Cdr. C. A. Lockwood Jr., assumed command of SubDiv 13 composed of the new boats Pike, Porpoise, Shark and Tarpon.

On December 31, 1941, Captain Wilkes evacuated Corrigidor on board the Seawolf to establish a new base at Soerabaya, Java. Simultaneously Capt. Fife boarded Swordfish and sailed to Darwin, Australia.

Expressing the view that Japan could not hope to be victorious in a war with the U.S., Admiral Yamamoto was "shanghaied" to the post of Commander of the Combined Fleet (from the Naval Ministry) to thwart a possible assassination at the hands of his many dissenters.

A survivor of the Jap carrier Kaga, at the Battle of Midway, told how some of his shipmates saved themselves by clinging to the air flask of a torpedo fired from Nautilus that hit the carrier and failed to explode, the concussion separating the warhead from the airflask.

LtCdr. Francis White was the only skipper who lost two submarines in combat, the S-39 and the S-44.

The IJN I-176 (Cdr. Kosaburo Yamaguchi) was the only Japanese boat to sink an American submarine (Corvina) during the war.

The last Japanese submarine to be sunk in the Pacific, the I-373, was torpedoed by Spikefish (Monaghan) on the morning of 13 Aug. 1945, in the East China Sea.

As late as July 1945 Japanese guns on the cliffs of Lombok Strait shelled the Loggerhead as she proceeded through the strait on the surface.

In July 1945 Bugara (Schade) operating in the Gulf of Siam, sank 12 junks, 24 schooners, 16 coasters, 3 sea trucks and one naval auxiliary, all by gunfire.

In the early morning hours of June 22, 1945, Barb, (Fluckey) fired a dozen 5-inch rockets into the town of Hokkaido from 5000 yards off shore.

A Japanese prisoner, recovered from a wrecked aircraft by Atule (Mauer) had the following items in his pockets: 7 packs of Jap cigarettes, 1 pack of British cigarettes, calling cards, ration books, club tickets, diary, note book, flight record and two magnetic detector tracers, with notes concerning them, a thick wad of money, a vial of perfume and a number of other personal items.

On the night of 8-9 December 1944, in a coordinated attack with Sea Devil, Redfish heavily damaged the aircraft carrier Hayataka; ten days later she sank the newly built carrier Unryo.

When Robalo was sunk, presumably by a mine, on 26 July 1944, five of her crew swam ashore and were captured by Japanese military police and jailed for guerrilla activity. They were evacuated by a Jap destroyer on 15 August and never heard from again.

On 27 Oct. 1944 Rock fired 9 torpedoes at Darter, stranded on Bombay Shoal.

In Feb. 1943 Tautog (Sieglaff) laid mines off Balikpapan, Borneo. In April 1944, the Jap destroyer Amagiri struck one of these mines and sank. This was the same destroyer that rammed the PT-109, commanded by J.F.Kennedy.

The first boat to be equipped with QLA sonar for locating mines, was Tinosa.

When Admiral Nimitz assumed command of the Pacific Fleet in Jan. 1942, he raised his flag on the submarine Grayling. Relinquishing command nearly four years later, he lowered his flag on the submarine Menhaden.

America's first Japanese POW was sub-Lieut. Sakamaki, captured when his midget submarine, launched from the I-18, struck a reef in Kaneohe Bay and he swam ashore and surrendered.

The second Japanese submarine sunk, a midget caught inside Pearl Harbor and sunk by the seaplane tender Curtiss, was later raised. Too badly damaged for intricate examination, it was used as fill-in material in the construction of a new pier at the submarine base.

During 520 war patrols in 1944, submarines fired 6,092 torpedoes, more than in 1942-43 combined (5,379).

Statistically it took 8 torpedoes to sink a ship in 1942, 11.7 in 1943, 10 in 1944.

During 1944, 117 navy and air force personnel were rescued by U.S. Subs;

The Tang (O'Kane) picked up 22 for the leader in this category.

During 1944 Japan lost 56 submarine, 7 to U.S. Submarines.

On Nov. 21, 1944, Sealion II (Reich) fired a salvo of fish at each of two BB's, the Kongo and Haruna. The Kongo was hit and sunk, but the DD Urakazi intercepted the fish meant for Haruna and was instantly sunk.

Message to all submarines on 13 April 1944: "Until further notice give fleet destroyers priority over maru types as targets for submarine attacks.

During 1944 U. S. submarines sank 1 BB, 7 Cvls, 2 CA's, 7 CL's, 3 DD's and 7 SS's of the Japanese navy.

So numerous were submarine attacks on the Singapore-to-Empire trade routes in 1944 that a common saying in Singapore was that "one could walk from Singapore to Tokyo on American periscopes.

Emperor Hirohito, upon learning of the Bataan death march at the conclusion of the war, stripped General Homma, the responsible commander, of his medals and decorations.

When the loss of Saipan was announced to the Japanese people on July 18, 1944, Prime Minister Tojo and his entire cabinet resigned.

On Feb. 22, 1945 the Flounder fired four fish at a Jap patrol boat. Two of the fish ran in a circle, causing Flounder to maneuver frantically to avoid disaster. On the following day she collided with Hoe.

The Flounder (Stevens) sank the only German U-boat that was credited to U.S. Submarines in the Pacific.

The last of the German commerce raiders, the Michael, was sunk by Tarpon (Wogan) on Oct. 18, 1943 while enroute to a Japanese port.

On December 28th the Dace (Cole) torpedoed the Japanese collier Nozaki, the last ship to be sunk in 1944.

The last large merchantman to be sunk by submarine during WW-II was the Hokozaki Maru, sunk March 19, 1945 by Balao (Worthington).

The last Japanese warship afloat in the South Pacific, the light cruiser Isuzu, was sunk by Charr (Boyle) after she was previously hit and badly damaged by Gabilan (Parham)

The Flasher sank more tankers than any other submarine.

The largest merchant ship sunk by submarines during WWII, the Tonan Maru #2 was sunk by Pintado (Clarey) on 22 August 1944.

Except for those officers who received the Congressional Medal of Honor, Commander Davenport was the most decorated man of the war.

During 1944, 14% of the CO's were relieved for non-productivity, 30% in 1942 and 14% in 1943.

A total of 7 reserve officers achieved command of a fleet submarine in WW-II