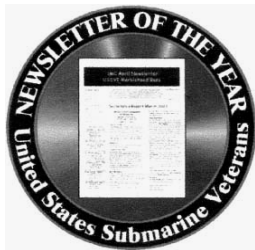


American Submariners Inc.  
4370 Twain Ave.  
San Diego, CA 92120-3404



## *The Silent Sentinel*

APRIL 2015

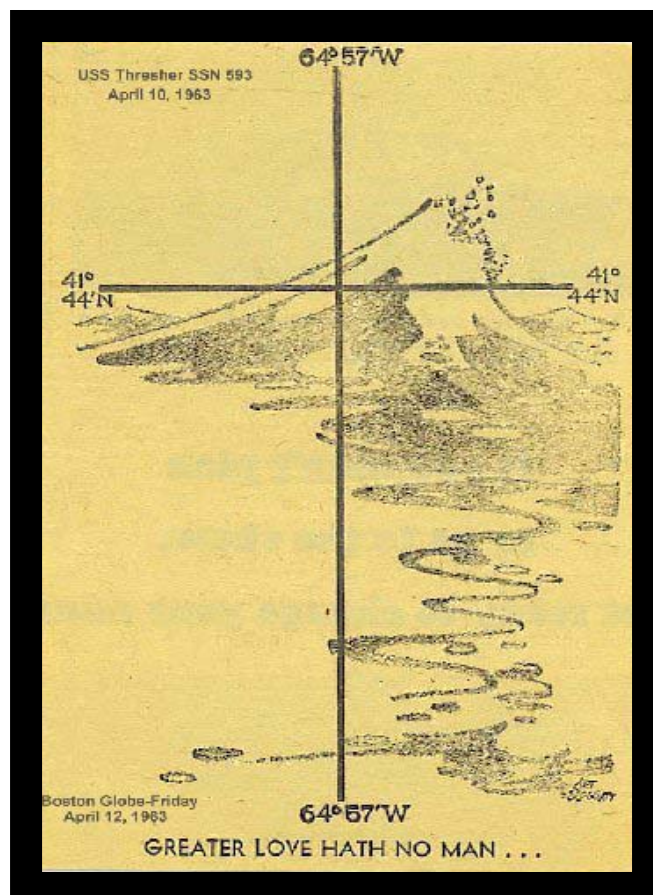


### *Our Creed and Purpose*

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.

In addition to perpetuating the memory of departed shipmates, we shall provide a way for all Submariners to gather for the mutual benefit and enjoyment. Our common heritage as Submariners shall be Strengthened by camaraderie. We support a strong U.S. Submarine Force.

The organization will engage in various projects and deeds that will bring about the perpetual remembrance of those shipmates who have given the supreme sacrifice. The organization will also endeavor to educate all third parties it comes in contact with about the services our submarine brothers performed and how their sacrifices made possible the freedom and lifestyle we enjoy today.



## U.S. Submarine Veterans San Diego Base

**Base Commander**

Bob Bissonnette  
1525 Walbollen Street  
Spring Valley, CA 91977  
(H) 619-644-8993  
(CELL) 619-251-7095  
RBisson250@aol.com

**Membership -- Change of Address**

Ray Ferbrache  
2955 Lloyd St.  
San Diego, CA 92117  
arayz@san.rr.com  
619-972-4474

**Treasurer**

David Ball  
3804 Wildwood Road  
San Diego, CA 92107-3750  
619-225-0304  
davidball@cox.net

**Senior Vice Commander**

Bill Earl  
2251 Vancouver Ave  
San Diego, CA 92104-5350  
619-2804053  
dinkysan@yahoo.com

**Newsletter Editor**

Mike HYMAN  
3639 Midway Drive, B-320  
San Diego, CA 92110-5254  
(619) 223-9344  
stamps@fortunesofwar.com

**Assistant Editor / Photographer**

Jack Kane  
619-602-1801  
jkane32@cox.net

**Junior Vice Commander**

Manny Burciaga  
8406 Alado Place  
El Cajon, CA 92021-2003  
619-921-5877  
mpburcia@co.net

**Base Storekeeper**

Phil Richeson  
Phillip92071@aol.com  
619-922-3230

**Chief of the Boat/Middle East Liason**

Fred Fomby  
858-735-0026

**Secretary**

Jack Ferguson  
jackmeboy@san.rr.com

**Chaplain**

Russ Mohedano  
8709 Dallas St.  
La Mesa, Ca. 91942  
619-697-5029  
moecowboy@cox.net

### The Silent Sentinel via Email

To all of my Shipmates and families who currently receive our Great newsletter via the mail who would like it sent via email or continue to receive it via mail, please fill out the form and mail it to the base or myself. We are trying to cut the cost of the newsletter down from \$3700 to about \$1900 a year. By receiving the Silent Sentinel via email will cut down the printing and mailing cost. The other plus to receiving it via email is you can save it on your computer and not have the paper lying around the house.

*A subscription to the Silent Sentinel newsletter will be available to surviving family members via internet email, at no charge, upon notification of the Membership Chairman. If a printed hard-copy is preferred, via US Post Office delivery, an annual donation of \$5.00 will be requested to cover costs.*

**NAME:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**CITY/STATE/ZIP:** \_\_\_\_\_

**EMAIL:** \_\_\_\_\_

**TELEPHONE:** \_\_\_\_\_

**Would like the SILENT SENTINEL emailed: YES \_\_\_\_\_ NO \_\_\_\_\_**

Robert Bissonnette  
1525 Walbollen St.  
Spring Valley, CA 91977-3748

USSVI Base Commander  
c/o VFW Post 3787  
4370 Twain Ave.  
San Diego, CA 92120-3404

**DUE TO LOGISTICS CONSTRAINTS, ALL INPUTS FOR THE SILENT SENTINEL MUST BE IN MY HAND NO LATER THAN *ONE WEEK* AFTER THE MONTHLY MEETING. IF I DO NOT RECEIVE IT BY THIS TIME, THE ITEM WILL NOT GET IN. NO EXCEPTIONS! MIKE**

## ***APRIL Meeting***

**Our monthly meeting is held on the second Tuesday of the month at VFW Post 3787, 4370 Twain Ave., San Diego. Our next meeting will be on 14 APRIL, 2015. The post is located one-half block West of Mission Gorge Road, just north of I-8. The meeting begins at 7 p.m. The E-Board meets one hour earlier at 6 p.m.**

***Check us out on the World Wide Web  
www.ussvisandiego.org***

## **BINNACLE LIST**

Ron Gorence, Rocky Rockers, George Koury, Frank Walker, R.C. Thompson, John Grienberger, John Lester, Judith Addington, Frank Gomez, and Debbie Justo (Mother of Fred Fomby) on the binnacle list.

## ***Submarine Losses in APRIL***

Originally Compiled by C J Glassford



### **USS Pickerel (SS-177)**

Lost on April 3, 1943 with the loss of 74 officers and men, while on her 7th war patrol. She was lost off Honshu. The exact cause of her loss has never been determined, but her OP area contained numerous minefields.

### **USS Snook (SS-279)**

Lost on April 8, 1945 with the loss of 84 officers and men. Snook ranks 10th in total Japanese tonnage sunk and is tied for 9th in the number of ships sunk. She was lost near Hainan Island, possibly sunk by a Japanese submarine.

### **USS Thresher (SSN-593)**

Lost on April 10, 1963 with the loss of 112 crew members and 17 civilian technicians during deep-diving exercises. 15 minutes after reaching test depth, she communicated with USS Skylark that she was having problems. Skylark heard noises "like air rushing into an air tank" - then, silence. Rescue ship Recovery (ASR-43) subsequently recovered bits of debris, including gloves and bits of internal insulation. Photographs taken by Trieste proved that the submarine had broken up, taking all hands on board to their deaths in 1,400 fathoms of water, some 220 miles east of Boston.

## USS Gudgeon (SS-211)

USS Gudgeon (SS-211) was probably lost on April 18, 1944 with the loss of 79 men SE of Iwo Jima, but may have been sunk on May 12, 1944 in another attack on an unidentified submarine and heard by several other submarines in the area. Winner of 5 Presidential Unit Citations, Gudgeon was on her 12th war patrol and most likely due to a combined air and surface antisubmarine attack. Gudgeon was the first US submarine to go on patrol from Pearl Harbor after the Japanese attack. On her first patrol, she became the first US submarine to sink an enemy warship, picking off the submarine I-173.

## USS Grenadier (SS-210)

Lost on April 22, 1943 near Penang, with no immediate loss of life. She was on her 6th war patrol. While stalking a convoy, she was spotted by a plane and dove. While passing 130 feet, Perch was bombed, causing severe damage. She was lodged on the bottom 270 feet and the crew spent hours fighting fires and flooding. When she surfaced, she had no propulsion and was attacked by another plane. While she shot down the plane. When enemy ships arrived, the CO abandoned ship and scuttled the boat. Of the 76 crew members taken prisoner, 72 survived the war.



## Minutes of Meeting - 10 March 2015

1900 - Base Commander Bob Bissonnette called the meeting to order

Conducted Opening Exercises - Pledge of Allegiance lead by incoming Secretary Jack Kane

Chaplain Russ Mohedano lead prayer and conducted Tolling of the Boats lost in the month of March.

Base Commander recognized Past Commanders and dignitaries, welcomed Guests and new members.

Incoming Secretary Jack Kane announced 34 (32 members and 2 guests) present.

The minutes of the 10 February 2015 meeting were approved as published in the Sentinel.

Base Commander summarized the Treasurer's Report in Treasurer Dave Ball's absence. Checking Balance \$4456.62 with total assets of \$19,699.36 which includes \$2842.00 in the Charlie Marin Scholarship Fund.

Base Commander Called For Committee Reports

Chaplain Russ Mohedano reported the following on the Binnacle List: George Koury, Frank Walker, R.C. Thompson, John Grienberger, Judith Addington, Frank Gomez and Debbie Justo.

Parade Chair Joel Eikam announced the next parade is 25 April at Linda Vista starting at 11:00 am.

Membership Chair Ray Febrache announced 280 members with several new members signing up as he spoke.

Scholarship Chair Paul Hitchcock announced he had one application in hand. The deadline is 15 April for applications. Paul asked for volunteers committee members to help pick the scholarship winners. Those volunteering to see him at the break.

Storekeeper Phil Richeson announced he had some 2015 Calendars left for sale. He also has some submarine books in the lending library.

Breakfast Committee and 52 Boat Memorial Chair Warren Branges reported the next Breakfast would be on 29 March. Helpers were needed and everyone was encouraged to come and eat even if they couldn't work the floor.

Warren reported that Dr. Richard Letterer had raised \$800 for the 52 Boat Memorial and that the Committee recommended inviting Dr. Letterer to the Annual SUBVET Picnic and honoring him for his efforts. Dr. Letterer's \$800 was in addition to a \$1000 donation given by the Navy Submarine League. The new plaques are being installed with a target

date of 25 April 2015 for completion in time for flying of the flags honoring the establishment of the U.S. Submarine Force.

1920 - Base Commander Bob Bissonette swore in the newly elected Base Officers - Senior Vice Commander Warren Branges, Junior Vice Commander Jack Lester and Base Secretary Jack Kane.

1924 - Base Commander called for a break.

1930 - Base Commander called the meeting back to order. 40/30/30 Drawing was held.

1935 - Unfinished Business

Base Commander gave a briefing on the SUBPAC Sailor of the Year Presentations held 27 February 2015 at the Admiral Kidd Center on Naval Base Point Loma (fka ASW Base). Base Commander/Western Region Director Bob Bissonette presented cash awards on behalf of the USSVI and San Diego Base to PO1 Kennedy (Sea Sailor of the Year) and PO1 Dozier (Shore Sailor of the Year). Petty Officers Dozier and Kennedy were selected from 5 Shore and 4 Sea Sailor Nominees from Submarine Pacific Units and Installations. Both will go represent SUBPAC in the upcoming Pacific Fleet and, hopefully Navy Sailor of the Year Competitions. PO1 Kennedy represented USS San Francisco while PO1 Dozier was from a shore unit at Bremerton.

Base Commander gave a briefing on the Western Region Roundup to be held 26 April through 1 May at Aquarius Casino In Laughlin NV. Gene Keller and Bob Bissonette are co-chairing the event. In addition to the agenda announced at last meeting the festivities will include a trip to the Submarine Museum near Laughlin with a luncheon included. Everyone is encouraged to attend - registration is still open - with hotel room at \$30.99 per night this a good deal and a lot of fun.

The Budget vote scheduled for this month is postponed until April meeting to allow for questions and answer session with the Base Treasurer who is currently vacationing in Hawaii.

Senior Vice Commander Warren Branges gave a briefing on an initiative for the San Diego Base to sponsor two WWII Submarine Veterans and their plus ones at the Submarine Ball at the Sheraton Harbor Island on 25 April 2015. A motion was made that the San Diego Base sponsor two Submarine Veterans at the Submarine Ball paying for two tickets for each WWII SUBVET and a hotel room if the recipient desires. Cost at approximately \$600. The motion passed with only one half-hearted, grunted objection. More details will follow at the next meeting.

1945 - New Business

Base Commander/Western Region Director Bob Bissonette briefed the membership on the upcoming National Mid-Term Directors meeting to be held in Pittsburgh. He will bring up the following items if they aren't already on the agenda, National Insurance, USSVI National website shortcomings and voting for District Commanders. Each item was discussed from the floor and suggestions were made as to how he should approach and expound on each subject.

1950 - Good of the Order

Base Commander mentioned the Massing of the Colors at Balboa Park on 21 March at 1100. Flyer on back table.

Base Commander indicated flyers on back table for Western Roundup. He also invited everyone to the SUBRON 11 Warrior Social on 26 March. Come out socialize with active duty counterparts and enjoy Tacos and Cold beverages.

Phil Richardson pointed out the similarities and differences between submariners (we have larger weapons with longer range) and snipers as portrayed in American Sniper.

Several Seattle Seahawk groaners were related members starting with Fred Fomby's "Pete Carrol being hired by the Vatican" diatribe.

1955 - Good of the Order Auction benefitting the USSVI Brotherhood Fund. Andy Steal donated three USS Swordfish Zippo lighters and an ashtray. The auction proceeds were just over \$100.

1959 - Master at Arms Fred Fomby announced that the evenings Hot Dogs receipts was \$62.00.

The meeting adjourned at 2000.

Jack Kane, Secretary  
Sailing List for 10 March 2015

Robert J. Golembieski	Fred Fomby	Jack Lester	Bob Bissonnette
Jack Ferguson	Benny & Juanita Williams	Russ Mohedano	Phillip J. L. Richeson
Phillip L. Richeson	Jim Harek	Joe Pelusa	Jessie Chang Farley
Ed Farley	Michael Hyman	Chris Stafford	Joe Dubois
Ray Febrache	Mac McCormick	Mike Cosgrove	Peter Lary
Russ Filbeck	Jack Kane	Joe Hanisko	Dennis Mortensen
Bill Earl	Warren Branges	Bob Farrell	Ed Welch
Tom Polen	Mert Weltzien	Joel Eikam	Manny Burciaga
Paul Hitchcock	Ron Gorence	Andy Steal	

## Current News

“Plataginet, I will; and like thee, Nero,  
Play on the lute, beholding the towns burn” (*Henry VI*, Shakespeare)

How U.S. Navy Intel Sees China’s Maritime Forces  
Andrew Erickson, War on the Rocks, Apr 10

In its first unclassified report on the subject in six years, the Office of Naval Intelligence depicts a powerful trajectory for China’s maritime forces. Titled “The PLA Navy: New Capabilities and Missions for the 21st Century,” the document and accompanying videos also cover the China Coast Guard – precisely the right approach, since the world’s largest blue water civil maritime fleet serves as “China’s Second Navy” and is on the front lines of island and maritime “rights protection” in the East and South China Seas.

This focus on both the PLA Navy (PLAN) and the China Coast Guard is also especially appropriate given their role as the principal institutions charged with furthering regional sovereignty claims. The PLAN is also responsible for safeguarding Chinese interests much farther afield, and is gradually developing power projection capabilities to do so.

Looking towards 2020, the Office of Naval Intelligence sees China’s maritime forces on a trajectory of major improvement through hardware acquisition and accrual of operational proficiency. Chinese shipbuilding capabilities and resources allow both forces to replace old ships with new, far more capable ones. Last year alone, China’s navy laid, launched, or commissioned more than 60 vessels; the report expects a similar figure for 2015. More naval ships emerged from Chinese shipyards than from those of any other country in 2013 and 2014. The Office of Naval Intelligence expects China to lead in naval ship launching in 2015 and 2016 as well.

Chinese naval development remains more a quality improvement swap than a Soviet-style numerical buildup. PLAN ships include 26 destroyers, 52 frigates, 20 corvettes, 85 missile patrol craft, 56 amphibious vessels, 42 mine warfare ships, more than 50 major auxiliaries, and more

than 400 minor auxiliaries. Beyond the numbers, though, what is most noteworthy is (1) the increasing number of vessels with multi-mission capabilities and their ability to operate both near to and far from China, and (2) growing numbers of specialized ships. Examples of geographic versatility include four-and-counting Yuzhao-class landing platform docks. They can support South China Sea island seizures and potentially even overseas expeditionary warfare.

In other revelations, the Office of Naval Intelligence explains that China can deploy heretofore publicly-unknown remote-controllable Wonang-class inshore minesweepers. China has four Dongdiao-class intelligence collection ships, which support growing surveillance operations in the Western Pacific. Three cutting-edge Dalao-class submarine rescue ships augment Chinese undersea warfare ability, which is relatively strong in the proximate waters that China cares most about. Likewise relevant to the East and South China Seas: twenty Jiangdao-class patrol corvettes in China's fleet, with 10-40 additional hulls anticipated. The PLAN is also introducing UAVs. The Camcopter S-100 UAV has already been deployed, with a variety of indigenous systems likely to follow soon.

In the most groundbreaking single piece of information in the report, a U.S. government source has confirmed for the first time that Chinese ships and submarines have deployed the potent new-generation supersonic YJ-18 anti-ship cruise missile. Previously designated the CH-SS-NX-13 by the Department of Defense, it is apparently a copy of the 3M54E Klub (SS-N-27B export variant), with which Russian Kilo-class 636M subs are equipped. Like the Klub, the sea-skimming YJ-18's high speed and terminal trajectory make it extremely difficult for ships' air defense to thwart.

While most PLAN growth is primarily qualitative, the China Coast Guard is undergoing both a qualitative and a quantitative buildup. Over last decade, it received 100 new large patrol ships, patrol combatants and other craft, and auxiliary ships. Between the beginning of 2012 and the end of 2015, the report projects, the China Coast Guard will have added more than 30 large patrol ships and more than 20 patrol combatants – an overall hull increase of 25%. No other Coast Guard in the world is remotely close to that rate of growth.

And China already boasts the world's largest blue water coast guard fleet. Compared to its maritime neighbors, the numbers are grossly in Beijing's favor. China has more Coast Guard ships than Japan, Vietnam, Indonesia, Malaysia and Philippines combined (China's smaller neighbors are in another civil maritime category entirely: the minor leagues). While the Japan Coast Guard is extremely competent, it is already behind quantitatively and the gap will likely only grow.

To ensure that these hardware advantages can be translated into overall capabilities gains, however, the PLAN must continue to improve its training, coordination, and jointness. To truly master long-range precision strike weapons that it emphasizes in the hopes of deterring – and if necessary defeating – U.S. intervention, China must maintain awareness over a tremendous swath of ocean and airspace. The China Coast Guard faces less lofty operational objectives, but must continue to consolidate and organize itself effectively, no small task given its swelling ranks and the large number of new ships it needs to integrate.

If Beijing can continue on its present maritime trajectory, its neighbors and the United States are in for substantial challenges. Chinese sources frequently invoke “three million square kilome-

ters of blue territory,” which equate to approximately 90% of the major waters within the First Island Chain (Bohai Gulf, Yellow Sea, East China Sea, and South China Sea). Already, China is engaged in massive island construction in the South China Sea, likely to give its maritime forces a better set of outposts from which to uphold and extend its claims there. There are numerous flashpoints in both the East and South China Seas, with frequent and deliberate vessel collisions during the Sino-Vietnamese Haiyang Shiyou 981 standoff in 2014 particularly worrying. The Office of Naval Intelligence judges that the clash “could easily have escalated into a military conflict.”

China is also becoming more active in distant seas. The report concludes that carriers, ballistic missile submarines and possibly large-deck amphibious ships will transform PLAN operations and further increase its international visibility: “in the next decade, China will complete its transition...to a navy capable of multiple missions around the world.” The question is to what extent Beijing will be able to reconcile a posture that pressures its neighbors in waters close to home, while seeking to protect growing interests and be seen as a global leader further afield.

Andrew S. Erickson is an Associate Professor in the Naval War College’s China Maritime Studies Institute and an Associate in Research at Harvard’s Fairbank Center for Chinese Studies.

### Chinese Subs’ Nukes Can Reach US

Joshua Philipp, Epoch Times, Apr 8

The Chinese regime is developing a new capability for submarine-launched ballistic missiles, and a U.S. admiral told reporters that he finds the development concerning.

“Any time a nation has developed nuclear weapons and delivery platforms that can range the homeland, it’s a concern of mine,” said Adm. Bill Gortney, commander of North American Aerospace Defense Command and U.S. Northern Command, during an April 7 Pentagon press briefing.

Gortney said the Chinese regime has already “put to sea their sea-launch ballistic missile submarines,” noting that China may have “three in the water right now.”

The United States is carefully watching the Chinese regime’s submarines and will be deploying a new system to track submarines by fall this year. It will keep tabs on hostile submarines by tailing them with new quiet and robotic Anti-Submarine Warfare Continuous Trail Unmanned Vessels.

Gortney said that even without leaving Chinese waters, the Chinese regime’s ballistic missile subs can already hit U.S. soil. “They can reach Hawaii,” he said, and the “farther east they go, they can reach more and more of our nation.”

He said that while the Pentagon has not yet seen the Chinese regime bring its submarines close enough to strike the West Coast of the United States, “it doesn’t mean that those patrols can’t exist in the future.”

The Chinese regime is believed to have started deploying submarines last year, armed with nuclear missiles “capable of striking Alaska or Hawaii,” according to a Feb. 4, 2014, report from the U.S. Naval Institute, which cited an assessment from the Office of Naval Intelligence.



The report noted that the Chinese regime's People's Liberation Army Navy was set to start patrols with its Jin-class nuclear ballistic missile submarine in 2014. The subs were said to be armed with Ju Lang 2 (JL-2) intercontinental-range submarine-launched ballistic missiles, which fit in the same category discussed during Tuesday's press briefing.

The JL-2 missiles have a range of over 4,000 nautical miles, and would enable the Jin-class submarines to strike Hawaii or Alaska from waters in East Asia, as Gortney warned.

In its current state, the Chinese regime's force of ballistic missile submarines is not capable of having a "constant at-sea presence for extended periods of time," reports the U.S. Naval Institute, quoting Senior Intelligence Officer Jesse Karotkin of the Office of Naval Intelligence.

It adds, however, that if the Chinese regime "builds five units as some sources suggest, a continuous peacetime presence may become a viable option."

The Chinese regime has been expanding its submarine forces. Earlier this week, it announced that Chinese shipbuilders finished three Type-093G nuclear-powered attack submarines, which will be armed with supersonic anti-ship missiles.

The Type-093G is an upgraded model of China's Type-093 attack submarines, which now have vertical missile launch systems, according to the state-run China Daily news outlet. The submarines are Han-class, as opposed to the Jin-class submarines that will allegedly go on patrols with nuclear warheads.

#### Analyst: Navy Needs To Get Real On Fleet Expansion Plans

Sandra I. Erwin, National Defense, Apr 7

It is an annual obligation of the Navy to tell Congress how many ships it will need over the next three decades and how much they will cost.

Each year, the Navy projects the fleet will grow in size as long as it gets the necessary funding. In the latest 30-year shipbuilding plan for fiscal year 2016, the goal is to reach 308 ships between 2022 and 2034, compared to 286 ships today.

The Navy's civilian and military leadership has come under fire on Capitol Hill for failing to contain a gradual shrinkage of the fleet that began decades ago, and have insisted that there will be at least 300 ships by 2020.

But analysts believe that historical budget trends and political realities point to a far smaller Navy, one even smaller than today's.

Between now and 2020, the Navy has an "unexecutable plan," said naval analyst Bryan Clark, of the Center for Strategic and Budgetary Assessments. The Navy on average has spent about \$14 billion a year on new ship construction for the past three decades. To rise above 300 ships, it would need \$2 billion to \$3 billion more per year, and it would require \$20 billion by 2021 to start building an expensive new ballistic missile submarine.

"Where do you get the money?" Clark asked. Congressionally mandated spending caps are in place for the Defense Department through 2021. The Navy, he said, is financially stretched to pay for its current obligations, let alone increase funding for the construction of future ships.

Congress instituted the 30-year shipbuilding plan so it could capture an annual snapshot of

Navy ship requirements. But the document has failed to spark a candid debate about how these requirements will be funded, Clark noted. The number of ships has fluctuated over the years, from 300 to as high as 375 a decade ago, and now back down to 308. Whatever the number, “it will be almost impossible for the Navy to reach it” because it does not have the money and no real prospect of a significant funding boost.

“The shipbuilding plan lays out the requirement and the cost, but no discussion about what’s the alternative if you don’t get that money,” Clark said. “We have to have an adult conversation on the fact that we are not likely to get that money.” The options are to either buy fewer ships or to take money from other pots in the Navy’s budget such as aviation, ship maintenance or training. “That’s where the conversation needs to go,” said Clark.

While working as a special assistant to the chief of naval operations a couple of years ago, Clark helped develop an “alternative shipbuilding plan” that was more in tune with fiscal reality, or a shipbuilding budget of about \$14 billion a year. “You end up with about a 240 to 260 ship Navy,” Clark said. Those estimates are in line with those of the Congressional Budget Office. If historical spending trends hold, the Navy will either shrink or will have to take drastic measures to bump up the shipbuilding account. “People have to decide if they want to take that risk now or later. I would argue that you should take the risk today,” which would mean making painful cuts to other accounts in order to invest in the future. “You don’t know what the world might be like in 2030. It could be more challenging than it is today. Maybe we are better off taking that risk today than taking that risk down the road.”

A fleet of 308 ships, the Navy said, is the required size to meet the demands of regional commanders around the globe. In the new shipbuilding plan, Navy officials point out that the service’s budget took a \$25 billion cut over the last three years. Unless shipbuilding budgets grow as the plan recommends, the Navy will not have enough money to start building a new strategic ballistic-missile nuclear submarine to replace the Ohio class. The first ship would have to be funded in 2021, the second in 2024, followed by one each year between 2026 and 2035.

“If additional funding is not available to support the shipbuilding procurement plan throughout this period, knowing that the Ohio replacement SSBN will be built, the balance of the shipbuilding plan will be significantly impacted,” the Navy’s report said. The submarine would consume about half of the shipbuilding funding available in a given year – and would do so for a period of over a decade. The Navy also is obligated by law to maintain a fleet of 11 aircraft carriers. When factoring the new submarine and carrier requirements, by 2026, the report said, “there would only be about half of the resources normally available to procure the Navy’s remaining capital ships.”

## Nuclear Submarines: America’s New Aircraft Carriers?

Dave Majumdar, *The National Interest*, Apr 7

A new class of nuclear-powered guided missile submarines could be the key to maintaining America’s future naval supremacy as new weapons increasingly challenge the dominance of the U.S. Navy’s aircraft carriers.

In fact, some analysts have suggested that guided missiles submarines should one day replace the aircraft carrier as the centerpiece of the Navy's warfighting capability.

With the proliferation of precision-guided weapons like anti-ship cruise missiles, anti-ship ballistic missiles and advanced air defense systems—particularly by China—the U.S. Navy's carriers and their embarked air wing are increasingly vulnerable to what the Pentagon calls the anti-access/area denial (A2/AD) challenge.

Instead of being able to push in close to shore during the initial stages of a major war, the Navy's multi-billion dollar floating airfields and their escorting warships might be forced to maintain station as far as a thousand nautical miles offshore to remain outside the range of enemy attack. Further compounding the problem is the fact that the current carrier air wing does not have the necessary reach or ability to penetrate into ever more capable enemy air defenses. Even the belated introduction of the Lockheed Martin F-35C Joint Strike Fighter around 2019 will not solve that problem.

While a new long-range stealthy unmanned strike aircraft could eventually give the carrier the long-range reach and hitting power it needs, there are those who argue that submarines are far more effective weapons against such high-end threats. Though potential enemies like China can challenge the United States in the air, sea, surface, on land and in space—American forces dominate the undersea realm with near impunity.

“Our submarine advantage gives us the ability to operate inside the A2/AD envelope,” said former Navy Captain Jerry Hendrix, a naval analyst at the Center for a New American Security. “They're a very potent weapon that can operate with impunity in an A2/AD environment.”

Hendrix argues that the vessels like the first four Ohio-class nuclear-powered submarines that were converted from carrying a payload of 24 Trident II D5 ballistic missiles to a conventional payload of 154 Tomahawk cruise missiles are some of the most potent weapons against an A2/AD threat. “Those submarines have been noticed by nations that would build A2/AD environments,” Hendrix said.

Hendrix makes the case that the vessel's performance during Operation Odyssey Dawn against the regime of now-deposed Libyan strongman Muammar Gaddafi in 2011 is an indication of just how potent such submarines can be. USS Florida (SSGN-728) almost single-handedly eliminated Libya's air defenses with a barrage of some 90 Tomahawk cruise missiles.

These SSGNs are so capable that Hendrix suggests that the Navy cease building the new Ford-class nuclear-powered aircraft carriers after the two vessels currently under construction are completed. The Navy could buy numerous SSGNs for the price of a single new aircraft carrier—a new Ford-class carrier costs roughly nearly \$13 billion without factoring in the price of the air wing.

Unlike a carrier, an SSGN would be able to approach an enemy coast before disgorging its payload of missiles—striking deep inland with weapons that have a range of more than 1,200 nautical miles to hit targets that might include everything from air defenses, to command and control nodes, to enemy infrastructure. “The point there is that three SSGNs gives you a potential striking power of 462 Tomahawk missiles or Tomahawk follow-ons that would be even more advanced,” Hendrix said.

Hendrix said that there is an immediate opportunity to expand the SSGN fleet by converting

the last two Ohio-class ballistic missile submarines into cruise missile carriers. Those two vessels are coming up on their mid-life refuelling and overhauls, which gives the Navy the perfect opportunity to convert those submarines to a conventional strike role.

## The Navy Is Designing A Drone That Flies And Swims

Carl Engelking, Discover, Apr 2

The United States Navy is incredibly interested in developing undersea robots and flying robots. So why not find a drone that can do both?

That's exactly what the Naval Research Laboratory's Flimmer Program aims to do. Early prototypes of the Flimmer — a portmanteau of "flying swimmer" — have successfully been launched from a plane at 1,000 feet, splashed down on the water's surface, then dove underwater reaching speeds of 11 miles per hour. Though the drone's design still needs a lot of tweaking, it could someday be used to hunt enemy submarines from the air and sea.

The biggest hurdle for Flimmer's designers is that water is roughly 1,000 times denser than air. Weight is the enemy of a flying drone, as heavier aircraft require more lift to stay airborne. Underwater craft, on the other hand, are built to be thick and heavy to protect electrical components from crushing under pressure. The Flimmer needs to be light enough to fly, yet strong enough to handle the impact of a splashdown and water pressure.

The latest version of the Flimmer is called the Flying WANDA, for "Wrasse-inspired Agile Near-shore Deformable-fin Automaton." It has fins tucked away at the end of its wings that fold upward to stabilize the craft in the air, while a rear propeller provides the thrust. In the water, the rear fins, and a pair of fins near the front of the body, are used to steer.

In the air, WANDA can reach speeds up to 57 miles per hour, and clock 11 miles per hour underwater.

The Navy envisions using their duck-like drone to provide quick reconnaissance by flying to a location, landing in the water and following an enemy submarine. Engineers will continue to alter the Flimmer's design to improve its air-to-sea abilities. However, there's no timeline for when the Flimmer will be deployed in enemy waters.

