



Vol. 14 No. 7

July 2018

Newsletter of Charleston Base, United States Submarine Veterans, Inc.

Base Meeting:

BOD: July 5 1800
 Membership: July 12. 1900

Location:

FRA Branch 269
 Low Country Home
 99 Wisteria Rd.
 Goose Creek, SC



Base Commander	Ralph Rohrssen	843.670.2135	Chief of the Boat	Joe Lunn	843.747.5368
Base Vice Commander	Mike Ciesielko	843.324.0011	Veterans Affairs	Ken Curtis	843.797.1268
Secretary	Gordon Long	843.214.2353	Membership	Larry Knutson	843.860.1155
Treasurer	Gordon Williams	843.553.3015	Scholarship	Carl Chinn	843.437.5515
			Storekeeper	Ken Hutchison	843.553.0935
			Historian	George Scharf	843.873.3318
			Public Affairs	Rick Wise	843.875.5559 (H) 843.276.0899 (C)
			Chaplain	Nick Nichols	843.452.3189
			Events Coordinator	Rick Sparger	843.553.5594
			Holland Club	Bill Freligh	843.553.1115
			Newsletter	Rick Wise	843.875.5559 (H) 843.276.0899 (C)
			Webmaster	Nick Nichols	843.452.3189
			Kaps for Kids	Bill Kennedy	843.875.3109



Submarines Lose During the Month of July

USS S-28 (SS 133)	July 4, 1944 – Training Exercise	LOST WITH ALL HANDS 49 SOULS
USS ROBALO (SS 273)	July 26, 1944 – 3rd War patrol	LOST WITH 77 MEN; 4 DIED AS POW'S; 81 SOULS
USS GRUNION (SS 216)	July 30, 1942 – 1ST War patrol	LOST WITH ALL HANDS 70 SOULS

THREE Boats and 200 Men Lost

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Upcoming Charleston Base Events

Board of Directors Meeting	Thursday, Aug 2	1800	FRA Branch 268, Goose Creek
Kaps4Kids Presentation	Saturday, Aug 4	1000	McCloud Children's Hospital Florence, SC
Base Meeting	Thursday, Aug 9	1800	FRA Branch 269, Goose Creek
Victory House Visit	Tuesday, Aug 14	1000	Carpool from VFW Bellwright Rd.
NPS Class 1803 Graduation	Friday, Aug 24	0800	NEX parking lot muster to carpool

Information on all these events are on the base website www.ussvicb.org/events/index.html

FROM THE BASE COMMANDER

Nothing this month.

From the Editor

You have probably noticed that the newsletter is getting out later in the month. Whenever we get a new Base Secretary it takes him some time to produce the minutes from the Base meetings. Having had the job I can tell you that its not easy to listen to the recording of the minutes and produce a record that reflects what actually happened at a meeting. Often, when you read the minutes you've initially generated, you find that that doesn't match what you remember of the meeting and you have to go back and correct the minutes. As time goes by Gordon Long will be able to produce the minutes in a shorter time.

I am planning to have some major surgery the beginning of next year. I would like to have a volunteer to show how to produce the newsletter if I am unable to continue as editor. If you are interested please let me know.

From USSVI National

Normal message traffic from USSVI will be published each month in the newsletter. If the message is of immediate interest to the membership it will be sent out by the Base Secretary. Messages are arranged in the order received

SubVet News #2018-050: 2018 Convention Cruise Information Submitted by: Wayne Standerfer on 7/18/2018

Shipmates,

There seems to be a misconception going around that the cruise has been cut off and is no longer available to book.

There is no cutoff date for joining the cruise!

The cruise is open to book until staterooms sell out.

Pricing and convention amenities (shipboard credit, drink cards, dinners) are guaranteed until August 6.

After that you can still book staterooms on a space available basis at the current Holland America price and amenities package. This can be done until sailing date based on availability.

If at some point prior to departure the cruise actually completely sells out and closes, AAA will advise us, but until then please continue to register.

Regards,
Wayne Standerfer
NSVC

SubVet News #2018-051: ARIZONA SILENT SERVICE MEMORIAL PROJECT Info Submitted by: William C. Andrea on 7/28/2018

ARIZONA SILENT SERVICE MEMORIAL PROJECT

July 25, 2018

Greetings Shipmates,

On June 15th I sent out a plea to all the Regional Directors for Support for Lost Boat Sponsorships for the Arizona Silent Service Memorial (ASSM) project. I received one response and that was from the Southeast Region. Steve Bell immediately contacted me and said he would reach out to the Southeast Region District Commander asking for support from their respective bases. The response from our Southeast Region shipmates has been absolutely awesome!

To date, we have received donations from individuals, bases, and districts for over \$1500 which includes three (3) Lost Boat Sponsorships. I have been informed that additional donations are on the way. A big Bravo Zulu to all of our shipmates in the Southeast region. Because of their support for

project, we only have three (3) Lost Boats remaining that need sponsors and one of the 3, has a potential sponsor pending.

I am deeply gratified by the support we have received from the Southeast Region for the ASSM project and hope that our shipmates from that part of the country will be able to attend the dedication ceremony when that event is announced.

To learn more about this project, please visit our website at www.arizonasilentservicememorial.org. Thank you.

Tim Moore
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www.arizonasilentservicememorial.org

Subject: National Election

Shipmates:

Our National Election will commence on 1 August and will run until mid-October (I have seen two different dates so just vote before October and it won't matter). I am asking each one of you to vote during this election. It will be held on the current website as the new one will not be ready by 1 August (I know, but it is just not ready. At least this will give the designer more time to fix the issues. Better to have it right). I also know that all the positions are uncontested. However, please show your support for those that are running for office. You may only vote for the Southeast Regional Director (the other RDs are elected by their region) and Ken Nichols (current District 4 Commander) is running for that office. I am sure most of you know that I am running for National Junior Vice Commander. Both of us would like to have your support.

But more importantly on the ballot is our revised C&B (I think that is the proper title) for your approval/disapproval. You can view that document on our website (under documents, then organization, it is listed as the "20118 Revised Constitution and By-Laws", typo makes it easier to find). Just as a reminder, there are no real changes to it. It is combing the current Constitution and current By-Laws. It has eliminated most, if not all, redundancy the current two documents have. The only "real" change to the document(s) is the portion regarding the ladies section (former Subvettes) which impacts very few people. Please look it over and vote as you see it.

I would like to thank each of you for participating in the election. As noted in a recent USSVI POC, the Southeast Region stands up well when asked to do so. I am sure you will make me proud again but having a high percentage of participation in the election.

Thank you very much and hope to see many of you at the National Convention and/or the WWII Kings Bay Memorial event.

Steve Bell, SERD

Subject: 2018 Scholarship Awards

Shipmates:

The 2018 USSVI Scholarship Award winners has been posted on the USSVI Website. Go to Charitable Fund, then to Scholarships, then to Winners, and then to 2018 Scholarship winners.

If my count is correct, there are 7 winners from the Southeast Region. My congratulations to each of those selected.

Steve Bell, SERD

**United States Submarine Veterans, Inc., Charleston Base
Minutes of Business Meeting
12 July 2018**

Opening Ceremonies:

The July 2018 Base Meeting was called to order by Base Commander Ralph Rhorssen with a quorum of officers and a total of 69 members present. The meeting started at 1900 with the sound of the diving alarm.

The Pledge of Allegiance was led by Vice Commander Mike Ciesielko and recited by members in attendance.

The Invocation and the Tolling of the Boats lost during the month of July was given by Base Chaplain Nick Nichols. Submarines Lost during the month of June:

USS S-28 (SS 133) – July 4, 1944 – Training Exercise – LOST WITH ALL HANDS – 49 SOULS

USS ROBALO (SS 273) – July 26, 1944 – 3rd War patrol – LOST WITH 77 MEN – 4 DIED AS POW'S – 81 SOULS

USS GRUNION (SS 216) – July 30, 1942 – 1ST War patrol – LOST WITH ALL HANDS – 70 SOULS

THREE Boats and 200 Men Lost

The USSVI Creed was read by Base Vice Commander Mike Ciesielko.

Base Commander Ralph Rhorssen welcomed the members and guests to the meeting and then introduced Frank Johnson from the CSS Hunley.

Special Guest Speaker – Frank Johnson:

Mr. Frank Johnson from the CSS Hunley spoke for a few minutes about how he came to work at the exhibit and some lesser known details about the Hunley using a slide presentation. The exhibit is open to the public on weekends and open to organized groups Monday thru Friday.

He addressed the need for tour guides; noting that while they have training for the volunteers, the guides are free to develop their own dialog as long as it is factual. For those who cannot climb stairs, there are plenty of opportunities to assist in other areas of the facility. He remained after the meeting to answer questions.

Introductions of New Attendees:

Three men were present in the meeting for the first time

William 'Bill' Yeager – Join U.S. Navy in 1952 – Bootcamp at Bainbridge – Assault Boat Coxswain in Korea – Vietnam in '54 to remove the French – Sonar Tech School at Key West – On destroyers, oceanographic ships and submarines – Plankowner on USS Ethan Allen (SSBN-608B) – qualified on USS Bluegill (SSK-242) in 1959 – Made STCM(SS) in 1966 – LDO at ComSubLant Staff – Served on four ASRs: Chanticlear, Penguin, Skylark and Petrel – Diver 1954-1975 – Retired as LT in July 1975 from ComSubRon Four Staff

Joe Kosater – ETC(SS) – Qualified in 1975 aboard USS Haddock – Served on USS Pollack – Made ETC while aboard USS Narwhal – then served on USS Guitarro – Was instructor for MK2 SINS at Groton - QA at NSSF – Retired in 1993

Xavier McCorkle – (future sailor) – sworn in to the Navy as of June 2018 and volunteered for submarines. Will be attending Nuclear Power School after Basic Training – "It has been a pleasure come visit and hear stories from the Subvets. I would love to revisit in the future."

In addition to these men, Carl Chinn had a returning guest in attendance: his oldest son who graduated from the Citadel and is now a captain in the Navy serving at Fort Meade.

Old Business:

No old business.

New Business:

No new business.

The meeting was interrupted due to a medical emergency with one of our members. 911 was called and EMS quickly responded while a severe thunderstorm was in progress. Marvin Miller was able to stand with some assistance and was taken by ambulance to a local hospital.

Secretary – Gordon Long:

The Minutes from the USSVI Charleston Base June Business Meeting has been published and promulgated. There were no additions or deletions. The minutes were approved.

Treasurer – Gordon Williams:

The Treasurer's Report has been published and promulgated. There were no additions or deletions. The report was approved.

Chaplain – Nick Nichols:

Highlighted boat of the month:

USS Robalo (SS-273) Lost on July 26, 1944 with the loss of 81 crew members while on her 3rd war patrol. She struck a mine about 2 miles off the coast of Palawan. Four men survived and swam ashore, then were imprisoned by the Japanese. Unfortunately, they were put on a Japanese destroyer and lost when that destroyer was sunk.

- **Ken Curtis** has been in the VA hospital with trouble breathing. While there, it was found that his blood count had gone down again. He has been told to limit his activities to those that are absolutely necessary. He will start a series of iron infusions in the very near future which will reduce his activity level. The first series is a week, every day. Since he has to reduce his activities he has resigned as the VA Representative and Tom Lawson has agreed to take that position.
- **JJ Fortier** is having severe back issues and also bad neuropathy. He had been scheduled to have lower lumbar surgery at Trident this morning. Due to a mix-up with the doctor, the surgery has been postponed until July 24th. Recovery time should be between 3 - 6 months. Following recovery he plans to begin attending meetings and functions again.
- **Roger Gibson** was in Summerville Med for several days. He had a reaction to some of the antibiotics he is taking.
- **Tom Lawson** was diagnosed with a mass in his upper left lung back in May. Turned out it was not a mass but inflammation from pneumonia. He had a PET scan last week which was normal.
- **Ed Simokat** is doing well but very ready for the halo to come off. He wants to let everyone know what a huge help Joe Hayes has been during this time. Joe is there to help him get to all of his doctor's appointments and help any way that is needed.
- **Luke Murphy** is at home and Judy reports he is improving a little each day but continues to have a lot of doctor appointments. He would appreciate visits from anyone who can come by. Before visiting please call Judy's cell (843.560.0431) to make sure they are home and not at the doctor's office.
- **Ed Stank** went to the Mayo clinic the end of June for more tests on his back. After an MRI and being told he will need significant back surgery he has opted not to have that done.
- **Rick Sparger** had to leave during the meeting. The storm caused a lightning strike near his home. He said he has a fried circuit board in his AC and also it knocked out his cable modem.
- **Marvin Miller** passed out during the meeting. Reason unknown. EMS came to take him to the hospital. He appeared to be alert when they took him to the ambulance.
- **Mickey Reaves** – 84 years of age. He was the Head Funeral Director at Stuhr's after being in the Coast Guard. Hospice has been called. Please go visit him at Roper – Room 516 (downtown).
Hampton Roads Base has started a new program where members check on other members who have not been at the meeting or are having health issues and can't get out. I will be formalizing a program like this before the next meeting. Look for emails asking you to commit to help with the program.

WEBMASTER – Nick Nichols:

- The website officer's page has been updated with all of our current base officers and board members.
- Website is constantly updated.
- Make use of the EVENTS page on the Charleston Base website. All events that are put out to the membership via email will be listed and updated on the events page.

Victory House – Ed Stank

Those going to the Victory House need to be at the VFW Post 3433 on Bellwright Road by 10am.

Recreation Committee – Ed Stank

Access to the storage facility is still an issue.

There are plans in the works to assemble a Charleston Base SubVets Cookbook. If you have recipes that you want to

like to contribute for publication, the proceeds will be donated to the scholarship fund. Tickets for the Charleston Base Christmas Party are now on sale - \$15 each. The event will be held at the Air Force Base.

He has passed out a survey to the members asking what kind of activities that we are interested in having. Please get that back to him soon. He will also take input for this via email.

Membership – Larry Knutson

Nothing to report.

Kaps for Kids – Bill Kennedy

Visited 57 children and their parents so far this year.

The next visit will be on Saturday, August 4 at the McLeod Hospital in Florence. Be there at 10am.

He has new “do-rags” and hats for the kids. He also has “Kaps for Kids” patches “Happiness is seeing a child smile”; these will be provided to the men who visit the children at the hospital with him.

Veterans Affairs/DAV – Tom Lawson

Nothing to report.

Fleet Reserve Association – Larry Cox

Having the SubVet meetings at this location is a good relationship – We (SubVets) have a place to meet with no charge and the FRA makes a bunch of money because – as a whole – the group drinks a lot of beer.

That being said, Larry encouraged all to join the Fleet Reserve Association with a 1 year, 2 year or life membership.

“Quarter Aucky” Auction to be held on July 14 – bid in quarter increments – lots of fun.

Thursday, July 19 – FRA Branch Meeting. Come back and see what the meeting is all about.

Submarine Veterans of WWII – Mike Emerson

There will be a WWII Associates Lunch at the FRA, 1130, Thursday, July 19.

Scholarship – Carl Chinn

Raffle tickets are on sale for a fantastic “Dolphin” print which is made using 131 different submarine related rating badges and other items. The drawing will be held at the end of the August Base Meeting. The money from this drawing goes to the Scholarship Fund. See Carl after the meeting to purchase tickets.

Marty Sessler has Charleston Base Challenge Coins and Bolo Ties with the coins in them for sale to support the Scholarship fund.

Nuclear Power School Awards – Ray Sparks

The next NPS graduation is in August after the Base meeting.

CRAMA – Butch Bryar

Nothing to report

Public Affairs/Newsletter – Rick Wise

Nothing to report

Storekeeper – Ken Hutchison

Has some old patches; free for those who want them. Nothing else to report

Special Events – Rick Sparger

Had to leave – no report

COB – Joe Lunn

Look up “Carpool Karaoke” with Paul McCartney on YouTube.

Base Commander – Ralph Rohrsen

Had COB send out email regarding CNO’s approval of “pony tails”. Asked Butch to stand so that we may see what the Navy may look like one day since most in the room can’t grow hair.

Good of the Order

After Battery – Ray Sparks

The After Battery is open every Wednesday. They have a Master Chef to cook meals each week.

Nuclear Historian – Rick Carlson

A Few More "Simple Truths"

Many people are alive only because it's illegal to kill them.

Alcohol does not solve any problems, but then neither does milk.

A Chief can become an officer, but an officer can never become a chief. Chiefs have their standards.

Women are taking over the world! Years ago they were the gender minority now they are the majority. In the Bible, they were submissive to their husbands. Now a lot of them are the husbands. Before they used to stay at home with the kids. Now they have become world leaders, CEOs and submarine officers.

Isn't it weird that in America... our flag and our culture offend so many people... but our money does not?

A short, modified review – heavy on the word “modified” – of the accident of Rodney McKanna. Not many people know the whole story!

While riding my Harley, I swerved to avoid hitting a sheriff's car which was in my lane passing cars while coming over the double yellow line. After he hit me head on, I lost control and landed in a ditch, severely banging my head, leaving me dazed and confused.

I crawled out of the ditch to the edge of the road when a shiny new convertible pulled up with a very beautiful woman who asked, "Are you okay?"

As I looked up, I noticed she was wearing a low-cut blouse with cleavage to die for...

"I'm okay, I think," I replied as I pulled myself up the side to the car to get a closer look.

She said, "Get in and I'll take you home so I can clean and bandage that nasty scrape on your head."

"That's nice of you," I answered, "but I don't think my wife will like me doing that!"

"Oh, come now, I'm a nurse" she insisted, "I need to see if you have any more scrapes and then treat them properly."

Well... she was really pretty and very persuasive. Being sort of shaken and weak, I agreed, but repeated, "I'm sure my wife won't like this."

We arrived at her place which was just a few miles away and after a couple of cold beers and the bandaging, I thanked her and said, "I feel a lot better, but I know my wife is going to be really upset, so I'd better go now."

"Don't be silly!" she said with a smile, while unbuttoning her blouse exposing the most beautiful set of breasts I had ever seen. "Stay a while. She won't know anything. By the way, where is she?"

"Still in the ditch with my Harley, I guess."

Drawings

FRA – Darryl Allen

Depth Charge – Rick Sparger (not present – house got hit by lightning – left his tickets with Marty Sessler)

Closing Ceremony

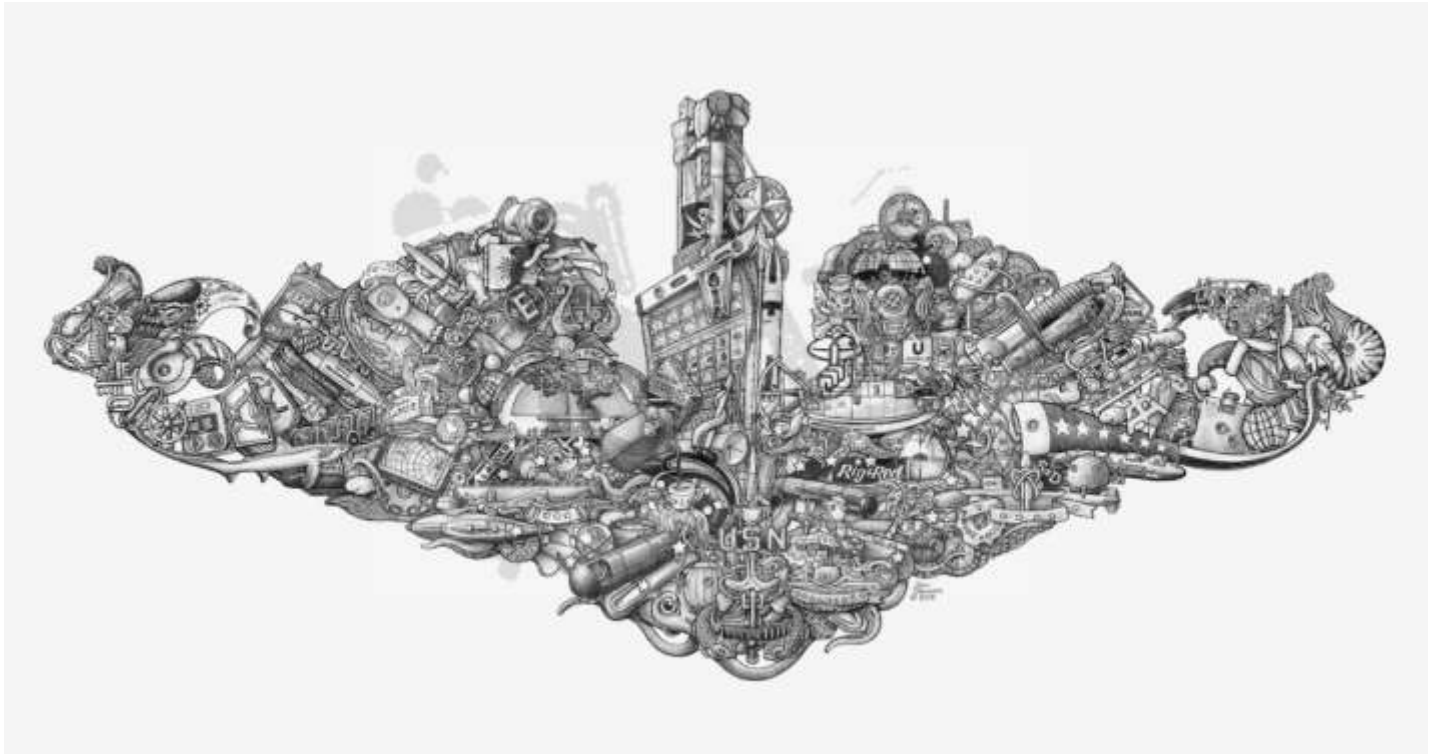
Chaplain Nick Nichols led the group in a prayer of Benediction, Base Commander Ralph Rohrssen announced adjournment of the meeting followed by three blasts on the diving alarm. The meeting was closed at 2013.

Scholarship Committee Raffles Off Dolphin Picture

The Scholarship Committee is raffling a submarine dolphin print. This print was done by Don Stewart. Don uses a common ballpoint pen to render highly detailed images, which he uses as building blocks to create larger, incredibly complex drawings. The objects he incorporated into this composite picture all relate to submarines. There are 131 different items in the drawing that make up the dolphins insignia; from submarines, rating badges, submarine life and various submarine items. There is an element of humor, and a healthy dose of pun-ish-ment added that we are all familiar with.

This print is 16” by 20” and professionally framed. It is an artist proof, signed by the artist. If you are not familiar, an artist proof is a limited number of the early prints from a production run. In the case of this dolphin print, it was hand cut from the full sheet on the printing press. There are only about one dozen of these artist's proofs.

This is not a picture of the print, but is representative.



Tickets are \$1 each or 6 for \$5 and will be on sale before and after each meeting in July and August. You can also contact Richard Sparger, Marty Sessler or Carl Chinn. Drawing for the print will be held at the end of the regular meeting August 9th. If you will not or may not be at the August meeting make sure you write your name and/or phone number on the back of the ticket **before** it gets deposited in the bucket. For non-SubVet members buying tickets: **ensure** you write your phone number on the back of your tickets; name optional.

From the Scholarship Committee

“If you have an idea for a way to raise money for the Charleston Base Admiral James B. Osborn Scholarship, please give those ideas to a member of the Scholarship Committee; Carl Chinn, Marty Sessler, Rick Sparger.

All ideas will be considered and reviewed by the committee. The Committee will decide if and when projects will be pursued and they will move forward on them at the appropriate time.”

11 Keyboard Shortcuts That Make Web Browsing 10 Times Easier

You know how to cut and paste—but can you revive a closed tab, instantly add “.com” to your text, or scroll Facebook mouse-free? You’re about to earn a lot of free time back. Note: If you are a Mac user, substitute the Command key for the Control key in the tricks listed below.

CTRL + SHIFT + T : Open the most recently closed tab

CTRL + shift + t instantly reopens the last tab you closed (the more you press it, the older the tabs you’ll dredge up). If you usually have more than one tab open while you browse, this trick can be a life-saver. Try it now, and never forget it. If you want to open a new tab altogether, just hit CTRL + t.

CTRL + back arrow: Go back one page in your browsing history

CTRL + back arrow is your effortless, mouse-free way of going back one page in your browsing history. Didn't mean to do that? Hit CTRL + forward arrow to move forward one page. Now the Internet is like on big eBook to flip through at your leisure!

In Facebook: J and K for effortless scrolling

Want a more satisfying Facebook experience? On your newsfeed, hit the J key to instantly highlight the next article down in your feed; hit the K key to move up one article. Once you have an article selected, hit the L key to like it, sans clicking.

Space bar: Automatically scroll down a page while browsing

Don't be a slave to the scroll wheel: the next time you reach the bottom of the screen while reading a long article, hit the space bar to jump one screen-length down. Hit the space bar by accident? Just press shift + space to scroll back up to where you were.

CTRL + D = bookmark a page

Digging around for the "add bookmark" option in your browser toolbars is a waste of time that could be spent looking at tiny baby sloths. Instead, hit CTRL + D to add a bookmark, and never avert your eyes from little Kermie and the gang. We recommend trying it right now with this indispensable article.

CTRL + L: Move the cursor to the URL bar

Know where you're headed? CTRL + L launches your cursor right to the address bar so you don't have to waste your time navigating through Google. An easy way to remember this: *CTRL + L when you know the URL.*

CTRL + K: Move the cursor to the search box

Don't know where you're headed? Jump to the search box with CTRL + K. A handy mnemonic for remembering this one: *When you want to Know something, CTRL + K it.*

CTRL + 1: Switch to the first tab

CTRL + 1 (or 2, or 3, etc.) instantly moves you to the tab at the position indicated, e.g. CTRL + 1 takes you to the first tab, CTRL + 2 takes you to the second, and so on. It's the easy way to shuffle!

CTRL + Plus sign: Zoom in

Type too small on a given web page? CTRL + Plus zooms you in, while CTRL + Minus zooms you out. Now you can feel like all those cops on CSI shows who "zoom in and enhance" grainy pictures of bad guys just by mashing a few keys!

Ctrl + Enter = .com

Wish there was a shortcut for adding ".com" to the end of a web address? There is: when your cursor is in the URL bar (CTRL+L, remember?) you can instantly append .com to the end of your text by hitting Ctrl + Enter, then navigate to that page without hitting another button. If you save one second of your life every time you use this trick, you'll have earned a YouTube video's-worth of time by the end of the day. *Nice.*

CTRL + W: Close current tab

Hit CTRL + W to close out of it the cool way. Happy surfing!

The HUNLEY NEEDS YOU!



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Contact: Frank@Hunley.org

[Beneath The Surface, A Quiet Superpower Race For Nuclear Supremacy](#)

[Yingjie Gu and Matt Sussis, USA Today, June 30](#)

The world's three largest naval powers are all developing the next generation of their nuclear submarine fleets, accelerating the underwater arms race between the United States, China and Russia.

For now, at least, analysts say America remains by far the most dominant submarine force, even as its chief rivals work feverishly to overcome the U.S. advantages. Each country appears to have different strategic goals, with the U.S. bent on gaining greater cost and operating efficiencies while the Chinese and Russian are keenly focused on technological advances and achieving greater stealth.

As tensions escalated in the South China Sea, these three countries — which boast the world's largest navies — are aggressively preparing for any potential undersea or nuclear conflict, as they develop or perfect nuclear ballistic submarines (SSBNs) and attack submarines (SSNs). These nations have engaged in territorial disputes in those waters, and China has increased its submarine-intensive military drills as a show of force.

The U.S. has likely been underestimating the number of attack submarines it would need in the Pacific, given the heightened potential for conflict in the region, warned James R. Holmes, professor of strategy at the Naval War College.

"You need to divide the number [of total ships] by two, three, or even more to estimate realistically how many ships are available for duty on any given day. The rest are in overhaul, undergoing training, or relaxing after deployment," Holmes said. "So, divide the number of SSNs in the Pacific by three, then look at the map. That's very few boats to manage events in the world's largest body of water."

Nearly half of the \$106.4 billion of planned Navy shipbuilding between fiscal 2019 and 2023 will go for nuclear ballistic and attack submarines, according to the Navy's long-range construction plan. The spending blueprint calls for \$32.9 billion for construction of ten attack submarines and \$16.7 billion for a new nuclear ballistic submarine.

The attack submarines are armed with various cruise missiles designed to hit closer-range land and sea targets. They are specifically designed to attack and sink other submarines, surface combatants and merchant vessels.

The nuclear ballistic submarines are equipped with nuclear weapons capable of delivering a retaliatory or preemptive strike almost anywhere in the world. Combined, these two types of submarines make up the preponderance of what will likely be the future of undersea warfare.

"The surface of the sea -- and the sky above -- is an extremely hazardous place in this missile and drone age, while the ocean has remained mainly opaque despite advances in sensor and computer technology," said Holmes.

Mutually Assured Destruction

SSBNs, or "boomers," hide in the ocean and can launch nuclear ballistic missiles at an enemy anywhere in the world even if the rest of a nation's nuclear triad of air- and ground-based missiles is destroyed. They are the guarantors of mutually assured destruction in the event of nuclear war.

Some analysts say that these boomers will be increasingly crucial to the national security strategy of all three nations in the coming decade.

"There is no higher priority for the U.S. Navy than SSBN recapitalization," said J.D. Williams, a retired Marine Corps colonel and senior defense researcher at RAND Corporation, who said SSBNs play a major role in the Navy's big-picture decision making.

The United States is building its first Columbia-class SSBN to replace the Ohio-class, and the Navy anticipates the lead ship will be completed by 2027. The Navy should have 12 Columbia-class boomers by the 2040s, according to General Dynamics, a Navy submarine contractor.

Meanwhile, Russia expects to complete four Borei-II submarines by 2025, and China will begin constructing Type 096 submarines in several years, both of which will be able to travel at speeds of more than 30 knots – or about 10 knots faster than the new Columbia-class SSBN. While the United States is most focused on the lifetime savings from the Columbia-class's improved nuclear core reactor, for both Russia and China's next generation of boomers, speed and stealth are key.

"Currently, the U.S. advantage is in quieting, so I'm not surprised to see Russia and China try to close that gap," said Bradley Martin, a senior policy researcher at RAND and a retired Navy captain, in discussing submarine stealth. "The U.S. is already at a background noise level, and you can't get much quieter than that."

Attack subs designed for versatility

The U.S., Russia and China are locked in an intense competition to develop the most sophisticated next generation of SSNs.

Because attack submarines carry cruise missiles, they constitute a navy's most crucial and versatile weapon in any frontal assault. Cruise missiles are designed to deliver a large warhead over long distances with high accuracy, and they are intended to hit both land and sea targets.

The U.S. has built 13 Virginia-class attack submarines and is expecting 15 more by the end of 2018. China and Russia are also expanding their attack submarine fleets, albeit at a slower pace. China is currently constructing two additional Type 095 submarines and has five more planned, while Russia expects to have six more of its Yasen-M class submarines by 2020.

While America's new attack submarines are intended to have longer operational lives and more flexibility, Russia and China are more focused on avoiding detection. Russia wants stealthier and more heavily armed SSNs while China is digging into quieting technologies.

However, Russia's weaker industrial base could put a damper on its lofty submarine improvement plans, according to some analysts.

"The Severodvinsk is way quieter than anything we've encountered and it's got everybody spooked," said Washington naval analyst Christopher Cavas. "But the problem is Russia's industrial base just isn't very good. They come up with these brilliant designs but the ships don't end up brilliantly built."

In 2000, a Russian cruise-missile submarine — Kursk — sank, killing all 118 sailors on board. The Russian government concluded the ship sunk due to a faulty weld which caused a gas leak and led to an explosion.

Despite improvements in Chinese and Russian submarines, the U.S. Navy said it remains confident that its investments will ensure America's next-gen submarines remain the world's dominant operational fleet.

"Virginia-class nuclear-powered attack submarines are designed with improved littoral environment capabilities, sensors, Special Operations Forces (SOF) capabilities, and strike options -- making it an ideal platform for the modern security environment ensuring asymmetric capabilities to combat current and future threats," said Lt. Lauren Chatmas, Navy spokesperson.

Cavas agreed, and said the Virginia submarines remained in a class by themselves.

"The truth is that nobody else has the front-end of the Virginias," said Cavas. "On top of these capabilities, they have a whole new reconfigurable weapon space for more flexibility. We're ahead of the Russians, and the Chinese really don't have anything of the same degree on this."

The Pentagon is also seeking to improve its submarine fleet through new technology such as underwater drones. The Defense Advanced Research Projects Agency (DARPA) is working on an underwater "truck" called Hydra which could host unmanned aerial drones, and release them into the air to conduct missions upon reaching a certain location underseas.

Hydra remains in development, and DARPA awarded funds to Boeing last year to provide continued support in their construction, and Boeing expects its current contract to expire in early 2019.

Hunley Crew Didn't Use Life-Saving Feature After Sinking, Research Finds

Drew Tripp, ABC4 News (Charleston ABC Affiliate), July 18

New analysis shows the doomed crew of the Confederate H.L. Hunley submarine didn't use a potentially life-saving built-in feature the night the vessel sank in the Charleston Harbor. Why they didn't, and ultimately why the submarine sank, remains a mystery.

Researchers on the Hunley Project announced their findings Wednesday, revealing the submarine's crew didn't use an integrated safeguard allowing them quickly to drop thousands of pounds of weight from the sub so it could return swiftly to the surface. The weight was stored in so-called keel blocks, heavy weights centered along the bottom of the submarine which kept the Hunley upright. Hunley researchers say the eight cast-iron keel blocks, some weighing more than 500 pounds, were designed so they could be detached from the ship to cut weight during an underwater emergency.

The revelation Hunley crew members didn't detach the keel blocks doesn't jibe with a popular theory about why the sub sank and its crew perished after successfully torpedoing and sinking the Union sloop USS Housatonic, the night of February 17, 1864.

Historical records show the Hunley crew likely timed its four-mile approach of the Housatonic to coincide with the outgoing tide. This was to minimize effort for the crew, which manually powered the ship with hand cranks, experts say.

Many believe the Hunley crew after sinking the Housatonic dove to the bottom to await the incoming tide so the crew could employ the same energy saving strategy in reverse for its return. However, some suggest the Hunley became stuck on the harbor's muddy bottom, which is why it never resurfaced. The ability to detach the keel blocks was for exactly such a scenario, yet there's no evidence the crew even attempted to do so, Hunley researchers say.

It's still unclear why the Hunley crew didn't or couldn't detach the keel blocks. Studies of the crew's remains have shown no injuries or signs of distress offering clues, either, Hunley researchers say.

"If they somehow got stuck, they likely would have attempted to drop some of the heaviest keel blocks to help rise back up to begin the journey back to land," Hunley Project researchers wrote in Wednesday's announcement. "However, the blocks were found fastened in place, meaning they did not attempt to use this emergency function. For some reason, the crew did not think it would help or were unable to start this emergency procedure."

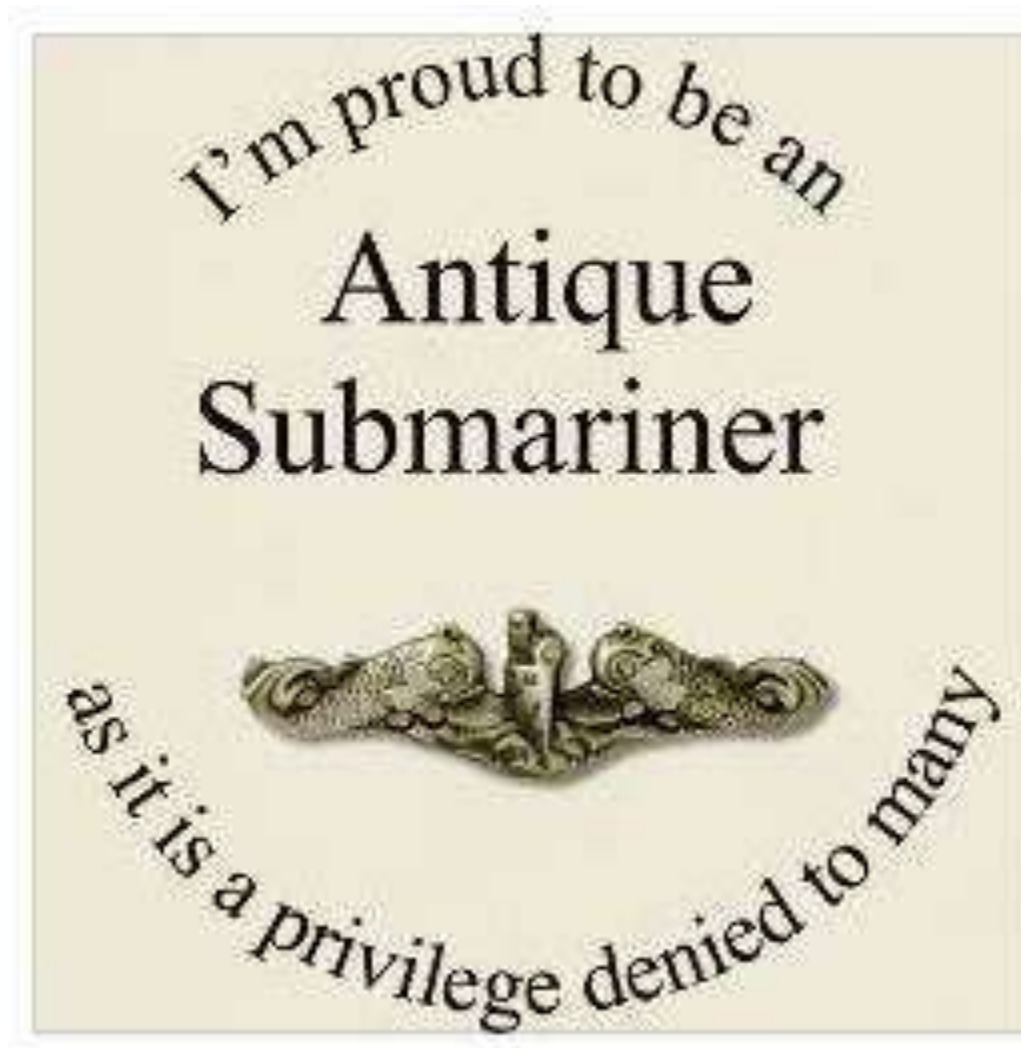
The Hunley's keel blocks have been preserved, and are being prepared for display at the Warren Lasch Conservation Center in North Charleston where the submarine is kept, researchers say.

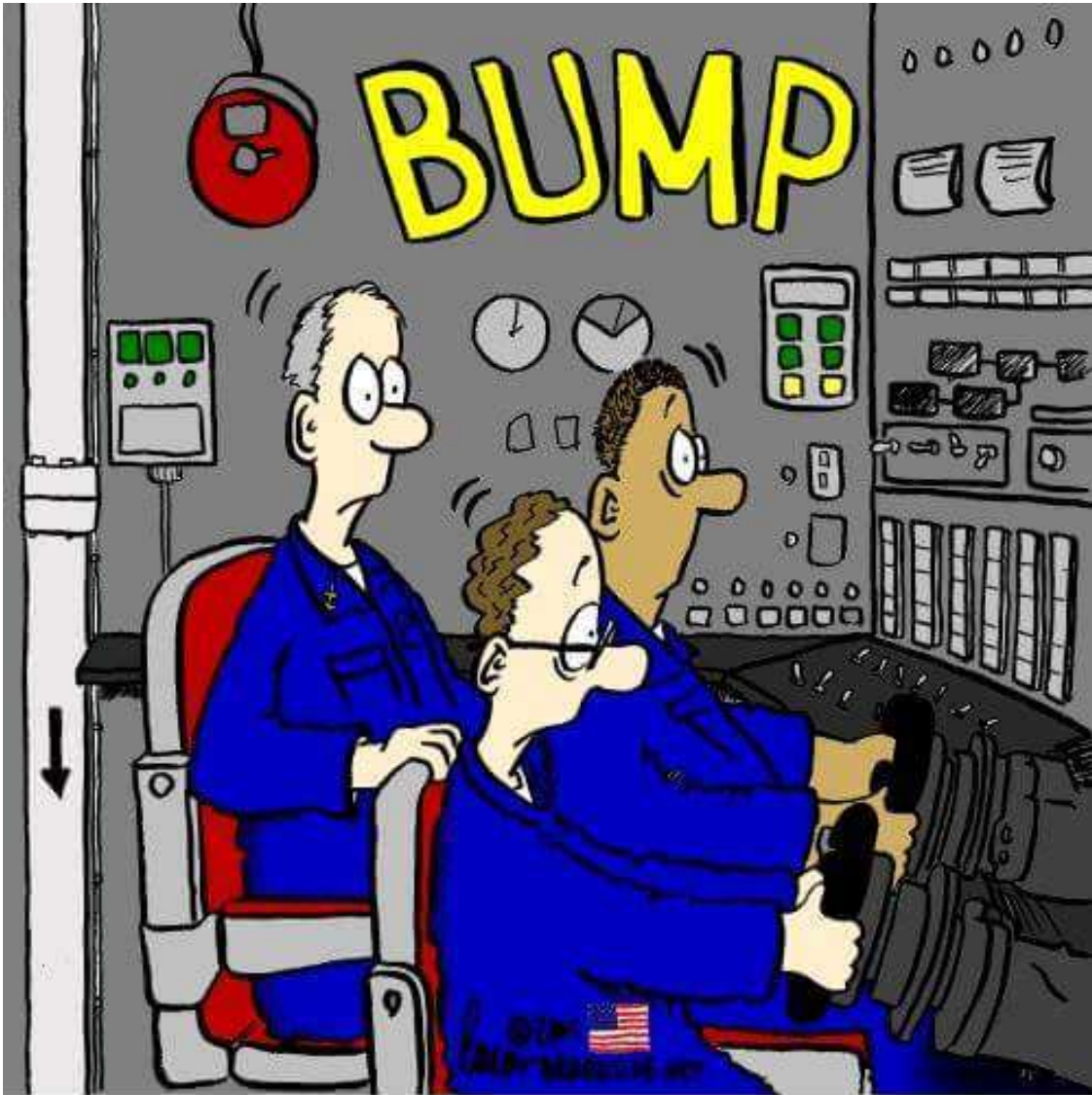
The night it sank the Housatonic in an effort to break a Union blockade of the Charleston Harbor, the Hunley became the world's first successful combat submarine.

Historical records show the submarine's crew signaled to shore they were on the way back home shortly after the attack.

The ship and crew vanished without a trace. Why has not been determined in the 154 years since the sub sank, or since it was recovered in August 2000.

Humor (courtesy of Carl Chinn)





Things that ruin a submariner's day

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