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Published Monthly

STEEL VALLEY DOLPHINS
USSVI REQUIN BASE NEWSLETTER



The USSVI Requin Base supports the National Creed

“To perpetuate the memory of our shipmates who gave their lives in the pursuit of 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.”

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Meeting Information

Meetings are held on the second Saturday of the month, normally at the Baden PA American Legion. Quarterly meetings are held around our membership area.

Our next meeting will be

April 10, 2021 @ 1230 hours

At the Baden American Legion

Base Location



American Legion Post 641
271 State St
Baden PA 15005

From the Editor

Please send ideas for articles or copies of articles, with full credit information to me for consideration of submission in the SVD.

We are a SUBMARINE group. As such, the articles should be of SUBMARINE or NAVY related.

Lou Hamill - itgeek8088@gmail.com

MAKE A DIFFERENCE, ATTEND A MEETING!

Our Website

For additional information about what is happening at **YOUR** base, go to

<https://www.requinbase.org/>



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National Commander	Wayne Standerfer	972-298-8139	lwaynes@charter.net
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Treasurer	Paul Hiser	910-691-5650	paulhiser664@gmail.com
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Region Director Northeast	Leslie Altschuler	917-748-2275	CdrNJNorthBase@hotmail.com
District Commander EN3	Hubert Dietrich	412-486-2635	hueyfromglenshaw@aol.com



USS Requin Base Officers

Office	Officer	Phone	eMail
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Technology Chair	Lou Hamill	412-445-3998	itgeek8088@gmail.com
Eagle Scout Chair	Vince Metz	412-613-5554	vincemetz007@hotmail.com
Awards Chair	Dick Geyer	724-637-2995	dgdiving@gmail.com
Master at Arms	Bat Masterson	724-869-1938	mastersoncf@aol.com
Public Affairs Chair	Ed Derr	724-854-0781	rredde@gmail.com



Binnacle List

All hands present and accounted for.

Eternal Patrol



John Donnelly

Isabelle (Pete) Watson

Boats Lost



Tolling of the Boats for March

USS Perch (SS-176)

Lost on March 3, 1942 near Java with no immediate loss of life, while on her 1st war patrol. She survived 2 severe depth chargings in less than 200' of water by 3 Japanese destroyers. The crew abandoned ship and scuttled her. Of the 59 officers and men taken prisoner, 53 survived the war and six died as POWs.

USS Grampus (SS-207)

Lost on March 5, 1943 with the loss of 71 officers and men, on her 6th war patrol. She was lost in Vella Gulf, sunk after engaging 2 Japanese Destroyers.

USS H-1 (SS-28)

Lost on March 12, 1920 with the loss of 4 men as they tried to swim to shore after grounding on a shoal off Santa Margarita Island, off the coast of Baja California, Mexico. Vestal (AR-4), pulled H-1 off the rocks in the morning of 24 March, only to have her sink 45 minutes later in some 50 feet of water. She was originally named the USS Seawolf before becoming H-1.

USS Triton (SS-201)

Lost on March 15, 1943 with the loss of 74 men. She was sunk north of the Admiralty Islands during a fight with 3 Japanese Destroyers. Triton was the 1st boat to engage the enemy in December 1941 off Wake Island, sinking 9 ships, 1 submarine and a destroyer.

USS Kete (SS-369)

Lost on March 20, 1945 with the loss of 87 officers and men at the end of her 2nd war patrol. Probably sunk near Okinawa, by a Japanese submarine that itself was subsequently lost.

USS F-4 (SS-23)

Lost on March 25, 1915 with the loss of 21 men. She foundered 1.5 miles off of Honolulu when acid corrosion of the lead lining of the battery tank let seawater into the battery compartment, causing loss of control. She was raised in August 1915.

USS Tullibee (SS-284)

Lost on March 26, 1944 with the loss of 79 officers and men, on her 4th war patrol. It's believed she was a victim of a circular run by one of her own torpedoes. The lookout was the only survivor and he survived the war as a Japanese prisoner.

USS Trigger (SS-237)

Lost on March 26, 1945 with the loss of 89 officers and men, on her 12th war patrol. She was lost during a combined attack by Japanese antisubmarine vessels and aircraft. Trigger ranked 7th in total tonnage sunk and tied for 8th in number of ships sunk.

Birthdays

Anniversaries

Member

Spouse

Justin Crocker	04/01/75
Jared Lawrence	04/03/87
Rufino Guntang	04/04/41
John Mack	04/07/52
Richard Simpson	04/10/45
Evelyn Kudlic	04/11/43
Jimmy Craig List	04/11/50
Merlin Larsen	04/14/44
Gerald Gaylor	04/15/30
Gary Ireland	04/19/52
Ronald Campbell	04/19/46
Lee Bookwalter	04/20/53
Scott Holzwarth	04/25/56
Douglas Johnson	04/30/52

Patricia Goron	2-Apr
Beverly Geyer	8-Apr
Helga Iden	10-Apr
Jacquelyn Kuhn	12-Apr
Sandy Dunlop	16-Apr
Charlene List	17-Apr
Barbara Zdarko	18-Apr
Susan Ireland	23-Apr
Liz Harris	25-Apr
Debby Shrump	28-Apr
Nancy Clark	29-Apr

Linda & Mike Allen	1-Apr
Alexandra Good & Brian Linville	1-Apr
Charlene & Jimmy Craig List	2-Apr
Heidi & Jeffrey Iliff	3-Apr
Kathleen & George Dolgos	4-Apr
Elizabeth & Robert Davis	6-Apr
Nancy & Robert L. Clark	6-Apr
Carol & M. David Cochenour II	8-Apr
Jacquelyn & Blaine Kuhn	13-Apr
Cassandra & Joshua Sewell	14-Apr
Mary & Gregory Bayne	16-Apr
Connie & Jon Bruce	24-Apr
Kela Gary & Michael Gasparovic	24-Apr
Robert & Sandra Carman	27-Apr
Debby & Charles Shrump	27-Apr
Amy & Robert Goldman	29-Apr





Commanders Corner

Our March membership meeting was the best one that we have had in over a year, thanks SHIPMATES! We had over 20 members and 2 first mates in attendance. It was soooooooooo good to see shipmates that have been hibernating for a very long time – GREAT TO SEE ALL OF YOU AGAIN! We also had 4 members attending by way of Zoom. This was our first traveling meeting of the year and I hope the other traveling meeting will be just as successful.

Chad Underkoffler did an outstanding job of arranging the meeting room and ordering the chow and soft drinks. Both him and Eric Bookmiller split the cost of all the great food and drinks and donated the reimbursement back to the IDAHO fund - \$100.00.

It was a great day for our items on sale. We sold over 70 candy bars, face masks that were donated by Cindy Brown, and finished the last of our wine, with our special labels. We sold over 15 cases of wine which really jumped started our Idaho Fund.

On a sad note, **JOHN DONNELLY**, an original Requin Submariner, sailed on Eternal Patrol on 2/23/2021. He lived in South Plainfield, N.J., but was from Clairton, Pa.

We received beautiful pictures of the USS TENCH SS-417 along with a picture of the captain, from our new perspective member John Bistolis. It will be put in our display case at the Legion.

Bravo Zulu to Bat Masterson who, this past week, did an outstanding job of fixing our display case after one of the shelves fall and broke. Bat also moved our beautiful book case from the storage room to our meeting room and it looks awesome.

Thanks again to Eric Bookmiller for such a fine job on making it.

Speaking of Eric, he told me that he has submitted an article to the American Submariner and he was notified that it would be printed. So, keep an eye out!!!

OUR NEXT BASE MEETING is scheduled for April 10, at the Baden's American Legion.

This is a special meeting to honor our HOLLAND Club Members for their induction in 2021 for 50 years qualified.

	Valentine Bolcato	Dave Bonnett	Phillip Elias
This year's honorees are:	Charles Shrump	Keith Small	Chad Underkoffler

We will also be honoring Emmett Lowry for his 75 anniversary.

Holland Club Chairman, Joe Campisi will present their awards and base gifts.

Hopefully we will be able to have a full house and catered to fit our needs. Keep and eye out for the meeting notice.

IDAHO FUND:

The fund is coming along just great! We are expecting our next shipment of items to arrive this week.

Please check out our list and support our efforts.

HOODIES \$40.00

S, M, L, XLAR, XXLAR, XXXLAR, XXXXLAR

BALL CAPS \$25.00

Officers S/M & L/XL

Enlisted S/M & L/XL

IDAHO CHALLENGE COINS \$20.00

E-mail me and reserve your order before we run out of the item you may want.



We are also taking orders for our own IDAHO SUBMARINE BEER TAP HANDLE:



Lou Hamill is doing an outstanding job on producing them.

So put your order in early.

We expect this to be a great product to honor the USS IDAHO!

The cost of each SUBMARINE BEER TAP HANDLE is \$90.00

If you want a beautiful stand, its an additional \$35.00

All this for \$125.00.

We can add any hull # that you may want.

Our newest member, John Bistolas, just ordered one for his Son.

FAIR WINDS SHIPMATES

We never know when our final orders will arrive. I am asking each member to think about how they can continue supporting the crew after they have gone onto their Eternal Patrol. Please give consideration to the following directive to include in your departing paperwork. Thank You.



USS Requin Base
C/O Huey Dietrich
213 Andrew Drive
Glenshaw, PA 15116
(412) 486 2635



FINAL REQUEST

TO MY FAMILY, FRIENDS AND SHIPMATES I LEAVE BEHIND
I WANT YOU TO KNOW HOW GRATEFUL I AM YOU CHOSE
TO SHARE YOUR LIFE WITH ME.

OUR TIME TOGETHER, ALTHOUGH SHORT WAS REWARDING
AND A BLESSING TO ME. TAKE CARE OF ME IN THE MANNER
WE DISCUSSED, SEND ME BACK TO THE
SUPREME COMMANDER.

THERE I WILL JOIN MY SHIPMATES WHO HAVE GONE
BEFORE ME ON "ETERNAL PATROL."

MY FINAL REQUEST TO YOU IS: IN LIEU OF FLOWERS, PLEASE
MAKE A DONATION TO THE
USS REQUIN BASE MEMORIAL FUND
SO THEY CAN CARRY ON THE WORK THEY DO TO
BENEFIT THOSE LESS FORTUNATE, IN THE NAME OF THE
UNITED STATES SUBMARINE VETERAN'S INC.





Chaplin's Column

Greetings to all my fellow Requin Base shipmates, spouses, and associate members,

Once again, I wish to look at some more of the many promises in the Bible that God has made to us. There are approximately 495 different promises made to us that we can walk out on. One of my Favorites is one I was taught many many years ago.

Psalm 32:1 Blessed is he whose transgression is forgiven, whose sin is covered.

Psalm 32:2 Blessed is the man unto whom the LORD imputeth not iniquity, and in whose spirit *there is no guile.*

We have a loving God who desires to see our sins forgiven. In fact, another scripture says that when we ask forgiveness and repent He;

Psalms 103:12

As far as the east is from the west, so far hath he removed our transgressions from us.

God has promised us that once we repent, He removes our sin and casts it as far as the east is from the west. Meaning it is forever removed and never brought back into God's thoughts.

As we walk out on these promises we can see a whole new path laid out before us. In the Bible satan is called the accuser of the brethren. We as believers are encouraged to be good to all but especially unto the household of faith. When we have thoughts about something that we have already asked forgiveness on and it returns in our thoughts it come from satan and we need to remember our standing on the promise made to us by God.

Please pray for our brothers and sisters deployed in harm's way and for those other service members deployed overseas in combat or support areas. Pray for our Country and leadership. Please know that I lift all of you up in prayer much every day.

In His Service,
Carl Stigers
National Chaplain/ Requin Chaplain



Store Keepers Report

Please visit our online store at

<https://requinbase.org/shop/>

You can have your items shipped to you at home via USPS [for a small fee], or pick them up at the next USSVI meeting.





Meeting Minutes

Base Commander Huey Dietrich called the meeting to order.

Attendees: Mike Allen, John Bistolas, Eric Bookmiller, Lee Bookwalter, Clair Bouts, George Brown, Joe Campisi, Ken Crosby, Huey Dietrich, Rick Elster, Dick Geyer, Lou Hamill, Bill Lindsey, Bat Masterson, Vince Metz, Frank Nicotra, Chuck Shrump, Jeff Simon, Keith Small, Carl Stigers, Terry Swinney, Chad Underkoffler

Base Commander Huey Dietrich: Quotes of the day: "If the officers that skipper my submarines can't go outside of protocol or bend the rule book then they are not needed in my submarine fleet (Nimitz)"

Base Commander Huey Dietrich: Let us at this time, with a moment of silent prayer, remember our Shipmates who made the supreme sacrifice that we may gather here in Peace. We dedicate this meeting to our Shipmates on Eternal Patrol, to perpetuate their memories in our lives and to honor our Shipmates on active duty in the service of the first line of defense of our Nation.

Boats Lost:

USS PERCH (SS 176) March 3, 1942
USS GRAMPUS (SS 207) March 5, 1943
USS H-1 (SS 28) March 12, 1920
USS TRITON (SS 201) March 15, 1943
USS KETE (SS 369) March 20, 1945
USS F-4 (SS 23) March 25, 1915
USS TULLIBEE (SS 284) March 26, 1944
USS TRIGGER (SS 237) March 26, 1945

We also honor our departed shipmate of the Requin Base lost in March, George Elder and Matt Holzer. Finally let us remember all the brave submariners who died performing their duties aboard submarines, some individually and some in groups, but where the submarine itself was not lost.

Chaplain Carl Stigers gave the Invocation.

Members introduced themselves and the boats they qualified on.

Base Secretary Jeff Simon reported that Minutes of the previous base meeting was published in the SVD. With no objections, the minutes were approved as published.

Treasurer Lee Bookwalter gave an accounting of base assets, expenditures, and deposits which are available upon request. With no objections, the report was approved.

Other Reports:

Binnacle List: None

Eternal Patrol: John Donnelly, Isabelle (Pete) Watson

Membership stands at 196. A summary of changes to membership was given.

Storekeeper Frank Nicotra reported on small stores and ordering items online.

Shipmate Vince Metz reported on Eagle Scout court of honor presentations.

Memorial And Ceremonies

American Legion Stand Down, April 24th.

Old Business:

Fund raising for USS Idaho support activities stands at \$6411.21 towards our goal of \$10,000.

New Business:

Huey Dietrich will not be running for District Commander this year.

National USSVI voted to revoke charters for the following bases: Ponce De Leone (Florida) and Thunder Mountain (Colorado). There are now 162 USSVI bases.

Holland Club Ceremony will be held April 10th meeting for Bolcato, Bonnett, Elias, Shrump, Small, Underkoffler, Lowry, Emmett

Nomination for Requin Base Newsletter is being submitted for National Award.

For The Good Of The Order:

Sewickley Memorial Day Parade is cancelled.

An Executive Board meeting was held following the normal meeting to discuss conducting a joint web cast with Navy League.

Bat Masterson repaired and replaced shelving in our display case at American Legion Baden PA.

Future USSVI National Conventions: Orlando FL (2021), Buffalo NY (2022), Tucson AZ (2023)

Discussion held regarding passing USSVI membership to surviving spouses of Eternal Patrol life members.

Arizona Silent Service Public Dedication Ceremony will be on April 17th, 2021 at 1000 hours.

The six largest USSVI bases are Groton (1047), Charleston (269), Hampton Roads (268), Bremington (250), Requin (196), San Diego (192).

Chaplain Carl Stigers gave the Benediction and blessing of today's meal.

Adjournment: The meeting was adjourned.

Next meeting: American Legion Baden PA at 1230 hours on April 10, 2021

Roadtrip





Upcoming Events

Our next base meeting will be at the Baden American Legion on April 10, 2021 @ 1230 hours.

This will include the 2021 Holland Club Induction ceremony.

Sewickley Memorial Day Parade is cancelled.
No word yet on the other parades.



Membership

Regular Members	181	Holland Club	89	USSVI Life Members	75
Associate Members	13	WWII	5	Base Life Members	50
Total Members	196				



<<<Then

Congratulations to Rick Elster
Retired 20 years

Now>>>



New Members



Brian Linville qualified on the USS SPRINGFIELD SSN-771 as a LT/03. He left the navy in 2017. Brian lives in Pittsburgh, Pa with his first mate Alexandra. Please e-mail Brian and welcome him aboard Brianscottlinville@gmail.com

George Pilley qualified on the USS TECUMSEH SSBN-628 as a FTB2(SS). He left the navy in 1976 as a FTB2(SS). George lives in Blackfoot, Idaho with his first mate Kathy. Please e-mail George and welcome him aboard pilleyg@gmail.com

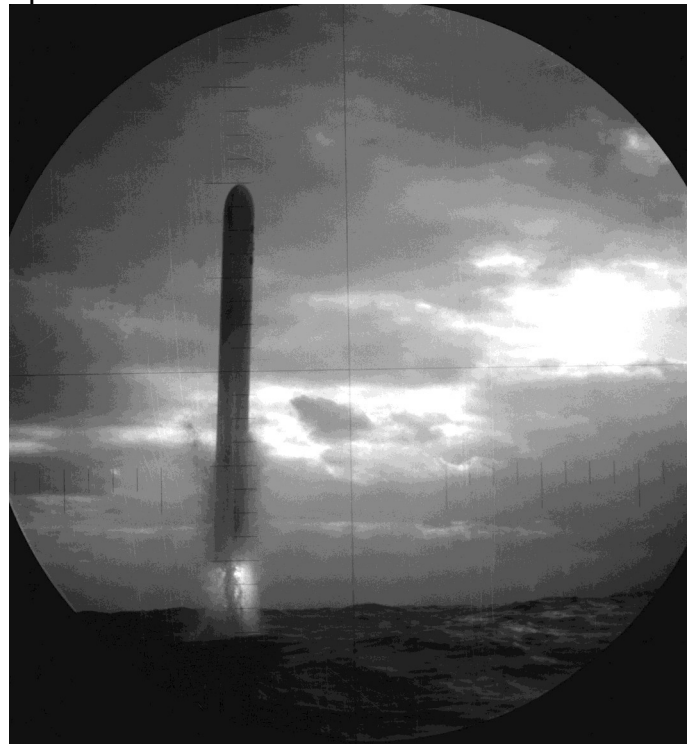
Pete Poninsky is joining the Requin Base as an Associate Member. He served in the U.S. Coast Guard, from 1968 to 1970, and was discharged as an E-3. Pete is the Vice Commander of the Baden's American Legion and serves as the Mayor of Leetsdale, Pa. Pete lives in Fair Oaks, Pa, with his first mate Carol.

These three shipmates bring our base total to 196, which is 30% of our goal of 10 new members for 2021, with more in the pipe line. All non-life members who recruit one new member, will receive one year base dues free. We have ordered new recruitment cards and introductory letters along with a new version of our mailing envelopes, with a five - inch dolphin on the outside. You can pick them up at the base meetings.



Featured Boat

Name:	USS <i>Pittsburgh</i> (SSN-720)
Namesake:	The City of Pittsburgh, Pennsylvania
Awarded:	16-Apr-79
Builder:	General Dynamics Electric Boat
Laid down:	15-Apr-83
Launched:	8-Dec-84
Commissioned:	23-Nov-85
Decommissioned:	15-Apr-20
Out of service:	6-Aug-19
Homeport:	Groton, Connecticut
Motto:	<i>Heart of Steel</i>
Status:	Decommissioned
Class and type:	Los Angeles-class submarine
Displacement:	5,802 long tons (5,895 t) light 6,193 long tons (6,292 t) full 391 long tons (397 t) dead
Length:	110.3 m (361 ft 11 in)
Beam:	10 m (32 ft 10 in)
Draft:	9.4 m (30 ft 10 in)
Propulsion:	S6G nuclear reactor
Speed:	Surfaced: 20 knots (23 mph; 37 km/h) Submerged: +20 knots (23 mph; 37 km/h) (official)
Complement:	12 officers, 98 men
Sensors and processing systems:	BQQ-5 passive sonar , BQS-15 detecting and ranging sonar, WLR-8 fire control radar receiver, WLR-9 acoustic receiver for detection of active search sonar and acoustic homing torpedoes, BRD-7 radio direction finder 4 × 21 in (533 mm) bow tubes, 10 Mk48 ADCAP torpedo reloads, Tomahawk land attack missile block 3 SLCM range 1,700 nautical miles
Armament:	(3,100 km), Harpoon anti-surface ship missile range 70 nautical miles (130 km), mine laying Mk67 mobile Mk60 captor mines



03/02/1945

USS Bowfin (SS 287) sinks Japanese transport Chokai Maru, and patrol bombers PB4Y-2 (VPB 119) sink transport Nichirin Maru in East China Sea.

03/03/1942

USS Perch (SS 176), after being depth-charged and irreparably damaged by Japanese destroyers Ushio and Sazanami, is scuttled by her crew in the Java Sea. All hands survive but are taken prisoner.

03/04/1945

USS Baya (SS 318) sinks merchant tanker Palembang Maru off Cape Varella, French Indochina, and USS Tilefish (SS 307) and sinks Japanese fishing vessel ShikoMaru.

03/05/1945

USS Sea Robin (SS 407) sinks three Japanese gunboats and USS Bashaw (SS 241) sinks two Japanese tankers.

03/06/1944

USS Nautilus (SS 168) attacks a Japanese convoy approximately 240 miles north-north west of Saipan and sinks transport (ex-hospital ship) America Maru.

03/07/1942

USS Grenadier (SS 210) torpedoes Japanese Asahisan Maru south of Shioya Saki, causing damage to the transport ship.

03/07/1958

USS Grayback (SSG 574) is commissioned. She is the first submarine built from the keel up with guided missile capability to fire the Regulus II missile.

03/08/1961

USS Patrick Henry (SSBN 599) returns from patrol to become the first ballistic missile submarine to use Holy Loch, Scotland, as a refit and upkeep anchorage.

03/09/1944

USS Lapon (SS 260), while pursuing a Japanese convoy in the South China Sea, sank two freighters and survived a counterattack by Japanese gunboat.

03/10/1944

USS Kete (SS 369) attacks a Japanese convoy and sinks one cargo and two transport ships while dodging counterattacks.

03/13/1993

USS Montpelier (SSN 765) is commissioned at Naval Station Norfolk. The boat is the 15th in the Los Angeles-Improved class of attack submarines.

03/14/1945

USS Bream (SS 243) sinks the Japanese auxiliary submarine chaser Kihin Maru in the Java Sea, south of Borneo. Also on this date, USS Trepang (SS 412) sinks the Japanese guardboat Kaiko Maru off Inubo Saki, Japan.

03/17/1898

John Holland's submarine, Holland IV, performs the first successful diving and surfacing tests off Staten Island, N.Y.

03/17/1945

USS Sealion (SS 315) sinks Bangkok-bound Thai oiler Samui off Trengganu coast, while USS Spot (SS 413) attacks a Japanese convoy and sinks army cargo vessel Nanking Maru off Yushiyama Island and damages cargo Ikomasan Maru, beached off Matsu Island.

03/17/1959

USS Skate (SSN-578) becomes the first submarine to surface at the North Pole, traveling 3,000 miles in and under Arctic ice for more than a month.

03/19/1945

Submarine USS Balao (SS 285) attacks a Japanese convoy and sinks one troopship and three fishing vessels and damages another off the Yangtze estuary about 90 miles north-northwest of Shanghai.

03/20/1944

USS Angler (SS 240) completes the evacuation of 58 U.S. citizens, including women and children, from the west coast of Panay, Philippine Islands. The sub had been told there were only 20 people, straining the boats supplies until it arrived at Fremantle April 9.

03/21/1943

USS Herring (SS 233) sinks the German submarine U 163 off the Bay of Biscay. The German submarine was responsible for sinking USS Erie (PG 50) on Nov. 14, 1942.

03/21/1945

USS Baya (SS 318) sinks the auxiliary netlayer Kainan Maru off Cam Ranh Bay.

03/22/1943

USS Gudgeon (SS 211) attacks a Japanese convoy 30 miles north Surabaya, Java, sinking an army cargo ship while surviving the depth charge attack by her escort vessels. Also on this date, USS Tambor (SS 198) damages a Japanese transport in the Sulu Sea, off Negros, Philippines.

03/23/1944

USS Tunny (SS 282) sinks the Japanese submarine I 42 off the Palau Islands.

03/24/1944

USS Bowfin (SS 287) attacks a Japanese convoy, sinking both a transport and army cargo ship.

03/25/1915

The submarine, F-4 (SS 23) sinks off Honolulu, Hawaii, with the loss of 21 lives. It is the first commissioned submarine loss for the U.S. Navy.

03/27/1944

USS Hake (SS 256) torpedoes and sinks Japanese merchant tanker Yamamizu Maru about 75 miles south of Borneo. Also on this date, USS Rasher (SS 269) attacks a Japanese convoy and sinks army cargo ship Nichinan Maru about 50 miles north of Bali.

03/28/1944

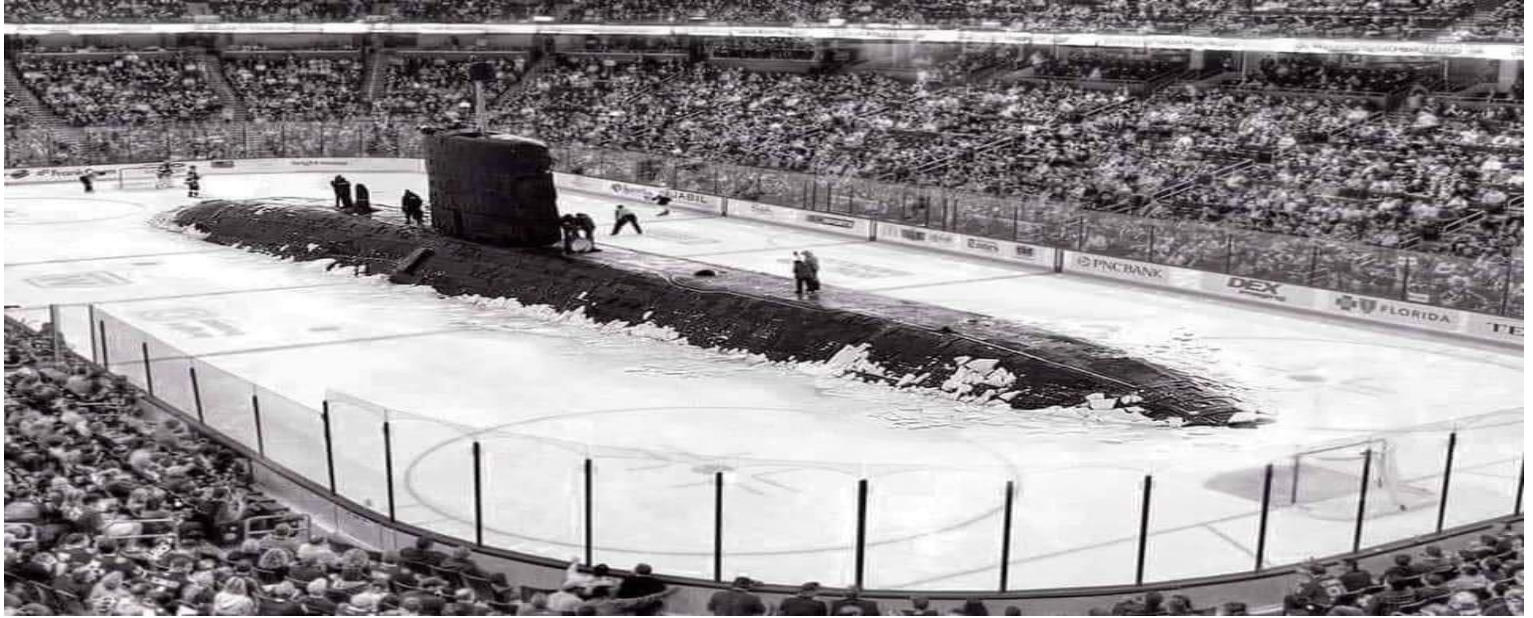
Submarines USS Barb (SS 220) and USS Silversides (SS 236) sink Japanese cargo freighter Fukusei Maru off Rasa Island and Japanese cargo ship Kairyu Maru off Manokwari, New Guinea, respectively.

03/29/1944

USS Haddo (SS 255) torpedoes and sinks Japanese army cargo ship Nichian Maru in South China Sea. Also on this date, USS Tunny (SS 282) torpedoes the Japanese battleship Musashi off Palau, necessitating for her to be repaired in Japan.

03/30/1944

USS Darter (SS 227) sinks a Japanese army cargo ship near New Guinea, despite the presence of an escort vessel. Also on this date, USS Picuda (SS 382) attacks a Japanese convoy and sinks a transport ship near Guam while USS Stingray (SS 186) sinks a transport ship near Saipan.





Submarine Development A Short History

Published: Thu Apr 18 12:47:44 EDT 2019

<https://www.history.navy.mil/content/history/museums/nmusn/education/distance-learning/history-of-submarines/submarine-development--a-short-history.html>



Underwater exploration has fascinated people for thousands of years, yet submarine travel did not become common until the mid-twentieth century.

The ancient Athenians used divers in secret military operations, and a legend maintains that Alexander the Great descended into the sea in a primitive diving bell.

Many talented and curious people dabbled with submersible boat designs, but achieved limited success. It was not until 1900, when the U.S. Navy commissioned its first submarine.

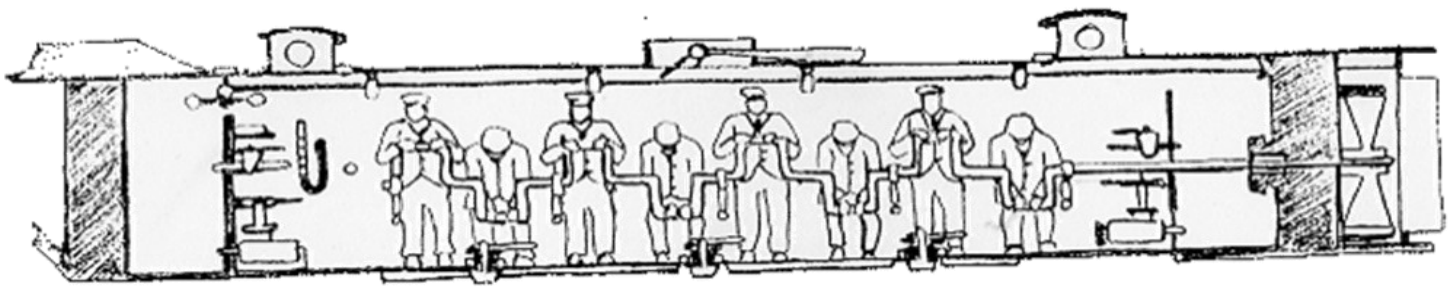
This essay will discuss a few key developments in the history of American submarines.

The first American submarine was designed before the Revolutionary War by David Bushnell, a young inventor from Connecticut. He designed and built a one-man submersible vessel that he called *Turtle*. Bushnell's *Turtle* featured a hand-cranked screw-like oar that moved the boat forward and back underwater, air pipes that brought fresh air into the boat, ballast tanks that took on water to dive and emptied to ascend, and a primitive torpedo to attack enemy ships.

Encouraged by George Washington and Thomas Jefferson, Bushnell adapted his vessel to use against the British during the war. *Turtle* was sent to New York harbor in September 1776 to surprise the British ships blockading the city. *Turtle*'s pilot Ezra Lee crept up on HMS *Asia* and attempted to attach explosives to the side of the wooden ship, but failed to do so before losing control of the boat. Lee escaped, but tried again to attack the British one month later without success. Despite *Turtle*'s failures, Bushnell proved that a boat could be used for underwater surprise attacks.

Between the American Revolution and the Civil War many individuals experimented with submarine technology, including American Robert Fulton, an innovator and promoter of the steam engine. In 1800, Fulton completed his version of a submarine, *Nautilus*. Fulton's design introduced elements that may be found in modern submarines, such as adjustable diving planes for easy vertical maneuvering underwater, a dual system of propulsion, and a compressed air system that allowed the crew about four hours of underwater travel.

As naval surface ships continued to develop throughout the nineteenth century, submarines were still considered experimental and unsafe for the U.S. Navy. However, during the Civil War, both Union and Confederate forces experimented with submarines. One such experiment was *H.L. Hunley* named for its financier Horace L. Hunley. His boat sank twice in training missions killing 11 crew members, including Hunley himself. Despite these tragedies, *Hunley* was called to battle on February 17, 1864.



Powered by nine men working a hand-cranked propeller, *Hunley* set out underwater to attack U.S.S. *Housatonic* in Charleston Harbor. *Hunley*'s crew used its spar torpedo to attack and sink *Housatonic*. *Hunley* became the first submarine ever to sink an enemy ship, however, *Hunley* never surfaced again, losing her entire crew. The submarine's potential as a surprise attack vessel finally was realized, but the problem of working safely underwater remained unresolved.

THE FIRST SUCCESSFUL AMERICAN SUBMARINE



Ten years after the end of the Civil War, Irish-born John Holland began designing and building submarines in the United States. Holland submitted his first submarine design to the U.S. Navy in 1875, which at the time was dismissed as impractical. Seeing this rejection as a challenge, Holland quickly went back to the drawing board to redesign and improve on the construction of these underwater boats.

By 1888, the U.S. Navy recognized the potential for submarines in its fleet and held a design competition for a new underwater vessel. Holland won the competition and began building the submarine *Plunger* five years later. After experiencing difficulties with *Plunger*, Holland began work on another submarine that he named *Holland VI*.

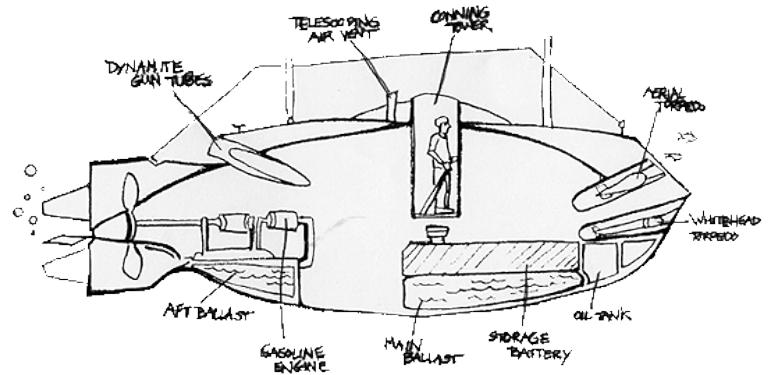
For his sixth submarine, Holland introduced a new method of propulsion using a gasoline engine. Holland designed a small, lightweight gasoline engine that turned a propeller while the boat cruised on the surface. The engine ran a generator, a machine that produces electricity, to charge batteries necessary to run an electric motor during underwater operations. Holland's efforts proved successful and he was able to persuade the Navy in April of 1900 to purchase this submarine. It was added to the fleet as USS *Holland* (SS-1) six months later.

IMPROVED PROPULSION

Although the gasoline engine worked well on paper, the engine had flaws. Gasoline is highly flammable and unstable. Using this fuel in a confined environment, such as the submarine, endangered the crew. Another danger were the batteries that ran the electric motor during underwater travel. They were heavy, bulky, terribly inefficient, and potentially explosive. Finding a safer means of propulsion was needed if the submarine was ever to submerge for long periods of time.

Around the same time Holland was creating his submarines, German scientist Rudolf Diesel developed an

excellent substitute for the gasoline engine. Diesel engines used a fuel that was more stable than gasoline and could be stored safely. The engine also did not need an electric spark to ignite the fuel, adding another element of safety. These advantages, plus improved fuel economy, granted submarines with Diesel engines longer and safer cruises on the surface. While underwater, batteries were still necessary to provide power. After 1909, Diesel engines would be used in American submarines for nearly 50 years.



THE NUCLEAR- POWERED SUBMARINE

Despite the success of diesel-powered submarines, the quest for a single power source continued. The concept of nuclear power was discovered by German scientists in the 1930's. Upon learning of this idea, American physicist Ross Gunn visualized the potential for nuclear-powered submarines and Phillip Abelson first sketched an image of one. The most recognized proponent of nuclear-powered submarines in the U.S. Navy was Admiral Hyman G. Rickover.

Rickover managed a research team that converted the concepts of nuclear power into working submarines. Nuclear power uses atoms, the smallest particles of an element, to produce an enormous amount of energy. That energy allows the power plants on submarines to super heat water and create steam. The steam then powers a giant turbine which turns the sub's propeller. Those small nuclear power plants on submarines could supply the necessary power for these boats to travel up to 500,000 miles and to stay underwater almost indefinitely without refueling.

Rickover convinced the Navy and the Atomic Energy Commission that nuclear power was the ideal propulsion method for submarines. On January 17, 1955, the first nuclear-powered submarine, USS *Nautilus* (SSN-571) went to sea. On her first voyage, *Nautilus* traveled completely submerged in the Atlantic for more than 1,300 miles. In 1958, she traveled under the polar ice cap and reached the North Pole.

Today's fleet of American nuclear submarines is able to spend up to six months on submerged patrol. Submarines have two complete crews. When a boat returns from a lengthy cruise, the crews rotate. Since the vessel is refueled only once or twice over its lifetime, there is no need to "stop for gas. " However, subs still need to stop to restock food and supplies.

THE FUTURE OF SUBMARINES

Changes in world politics and further adaptations of sea, land, and space technologies are creating new challenges for submarines in the 21st century. In the future, some submarines may contain no crew at all, but merely computer technology that talks to satellites and transfers information to distant military bases for analysis.

Submarines now are an essential part of the U.S. Navy, which would not have been possible without the ingenuity and vision of the innovators described in this essay.

Navy to recycle first-of-its-kind Ohio missile sub after 45 years

Benjamin Brimelow Feb 19, 2021, 8:28 AM

<https://www.businessinsider.com/navy-recycle-first-of-its-kind-ohio-class-missile-sub-2021-2>



US Navy Ohio-class guided-missile submarine USS Ohio gets into position for an exercise off the coast of Okinawa, Japan, February 2, 2021. US Navy/Sgt. Audrey M. C. Rampton

In December, the US Navy [released](#) its 30-year ship-building plan, which called for building 404 new vessels to reach a 541-ship fleet by 2051, with 304 current vessels retired over that period.

Fourteen of the vessels to be retired are nuclear-powered and thus need to be recycled as part of the Navy's [Ship-Submarine Recycling Program](#) to ensure safe disposal of their nuclear reactors and fuel.

Those ships include [the first-in-class aircraft carrier USS Nimitz](#) and 13 [nuclear submarines](#): 11 Los Angeles-class attack subs and two [Ohio-class](#) cruise-missile submarines, known as SSGNs.

[USS Ohio](#), lead ship of the class, will be one of the two SSGNs recycled. It will be the end of a four-decade career for the first sub of its kind.



Tugs guide USS Ohio out of dry dock in Bangor, Washington, August 15, 1983. CORBIS/Corbis via Getty Images

A new SSBN

USS Ohio was commissioned in November 1981. Ohio and the boats that followed were ballistic-missile submarines, classified as SSBNs, and meant to replace the aging boats of the five previous SSBN classes, known as the "[41 for Freedom](#)," which were commissioned between 1959 and 1967.

The SALT I and SALT II treaties between the US and the Soviet Union put limitations on their nuclear forces, including the number of submarine-launched ballistic missile (SLBMs) silos each could possess. As a result, a number of SSBNs were retired or refitted and reclassified as attack subs to make room for Ohio-class subs to enter service.

As the newest SSBN in the Navy, Ohio was a considerable upgrade. At 560 feet long and 42 feet wide, Ohio and its follow-on boats are the largest submarines in US history. It was originally armed with four torpedo tubes and 24 missile silos — eight more than its predecessors — capable of firing UGM-96 Trident I SLBMs.

Its nuclear reactor enabled Ohio, like other SSBNs, to stay submerged for months at a time. It also gave Ohio the ability to dive deeper than diesel-electric submarines and allowed it to have a virtually unlimited range, restricted only by its food supply.

At Ohio's commissioning, then-Vice President George Bush [said](#) the vessel was "a new dimension in our nation's strategic deterrence," while Adm. Hyman G. Rickover, known as the "father of the nuclear Navy," said Ohio should "strike fear in the hearts of our enemies."

All but one of the Ohio-class boats were named after US states, a tradition the Navy previously reserved for battleships and cruisers.



USS Ohio undergoing conversion to a new class of guided missile submarine at Puget Sound Naval Shipyard in Bremerton, Washington, March 15, 2004. US Navy/Wendy Hallmark

SSBN and SSGN

After training and shakedown operations, Ohio was transferred to the Pacific Fleet, arriving at its homeport of Bangor, Washington, in August 1982. In October that year, Ohio began its first strategic deterrent patrol, the first such patrol with a Trident I SLBM, which lasted 70 days.

Ohio would conduct strategic deterrent patrols out of Bangor for the next 20 years and did a number of Trident test launches in that time. After a brief overhaul from 1993 to 1994, Ohio returned to patrol duties in 1995.

In 1994, the Nuclear Posture review determined that the Navy only needed 14 of its 18 SSBNs. As a result, the first four Ohio-class submarines were to be [converted](#) to SSGNs to assist ground operations in a more tactical role.

Ohio's conversion lasted from 2002 to 2005. Ohio and its fellow SSGNs are now equipped with 22 Vertical Launching System tubes, giving them the ability to fire up to 154 Tomahawk land-attack cruise missiles.

The four SSGNs have more than half of the US Navy's submarine vertical-launch payload capacity, with Ohio alone carrying more Tomahawks than a single Arleigh Burke-class destroyer.



Members of Gold crew on duty in control aboard USS Ohio, January 23, 2021. US Navy/MCS2 Kelsey J. Hockenberger

The remaining two missile tubes were converted into swimmer lockout chambers, which, combined with its ability to carry a dry deck shelter, allows the Ohio to deploy up to 66 Navy Seals or Force Reconnaissance Marines for special operations.

Returning to active service in 2006, Ohio continued to conduct patrols in the Pacific and participated in a number of exercises with the US's Asian allies. In 2010, Ohio and two other SSGNs [surfaced](#) simultaneously in the Western Pacific in response to Chinese missile tests in the East China Sea.

In April 2017, Ohio entered a two-year [refit](#), which upgraded most of its onboard systems, and returned to service in August 2019.

To ensure continuous operation at peak performance, Ohio is operated by two rotating 155-man crews, dubbed Blue and Gold. Each crew deploys for 70 to 90 days before returning to port to swap places with the other.



Reconnaissance Marines in combat rubber raiding craft approach USS Ohio during an exercise off Okinawa, February 2, 2021. US Marine Corps/Sgt. Destiny Dempsey

Plans for recycling

Ohio is currently operating in the Pacific with the US 7th Fleet. It recently [conducted](#) an exercise with Force Reconnaissance Marines from the III Marine Expeditionary Force in Okinawa, who practiced deployments via submarine and rubber raiding craft.

Ohio is expected to enter the recycling process in 2026, along with sister boat USS Florida. For submarines, the process has four stages: inactivation, missile compartment dismantlement, reactor compartment disposal, and recycling.

Inactivation begins after the sub has been disarmed and put into a dry dock. The reactor is shut down and completely de-fueled. The main storage battery is then removed.

The submarine is cut open to allow easy access to the reactor. The fuel is moved to a shielded transfer container that is placed in a specially designed shipping container before being sent to the Naval Reactors Facility in Idaho.

After this, the missile launchers are removed from the submarine and cut apart to ensure their destruction in accordance with the terms of the SALT II Treaty.

When this is done, the reactor is thoroughly cleaned, sealed in a protective case, and removed by crane to be sent to the Department of Energy's Hanford waste disposal site in eastern Washington.

Any remaining parts of the submarine that can be used in active subs is removed and stored. The hull is then scrapped.

Eventually, all Ohio-class SSBNs will be replaced by the [Columbia class](#). The four SSGNs, meanwhile, will be replaced by the [Virginia-class](#) nuclear attack submarine, which [will have](#) vertical-launch systems capable of firing 12 to 40 Tomahawks or Harpoon anti-ship missiles.



USS Ohio at a naval base in Busan, South Korea, with its dry deck chamber open, February 26, 2008. KIM JAE-HWAN/AFP via Getty Images

