



July 2021

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

August 07, 2021 @ 1230 hours

At 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 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/>



USSVI National Officers

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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

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Asst. Holland Club	Dick Geyer	724-637-2995	dgdiving@gmail.com
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	redde@gmail.com



Binnacle List

Keith Small

Bob Bittner

James Kontier

Tino Balcato

Eternal Patrol

All hands present and
accounted for.



In Remembrance

Dex Armstrong
John Grienberger
Steve Kossler
Joe Brenkus
Ed Covey
Ron Shook

Boats Lost



Tolling of the Boats for July

USS S-28 (SS-133)

Lost on July 4, 1944 with the loss of 49 crew members. She was conducting training exercises off Hawaii with the US Coast Guard Cutter Reliance. After S-28 dove for a practice torpedo approach, Reliance lost contact. No distress signal or explosion was heard. Two days later, an oil slick was found near where S-28. The exact cause of her loss remains a mystery.

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.

USS Grunion (SS-216)

Lost on July 30, 1942 with the loss of 70 crew members while on her first war patrol near Kiska Harbor. She radioed that she sank two sub-chasers and damaged a third, but was never heard from again. Grunion's mangled remains were found in the Bering Sea in 2006 off the Aleutian Island of Kiska.

Birthdays

Anniversaries

Member

Spouse

Donald G. Bright 08/01/52
 Ralph Stroede 08/07/43
 Willard J. Ashmore 08/11/52
 John William Fordyce 08/14/40
 Fred E. Hayes 08/16/53
 Sarah L. Bahr 08/18/75
 Martin Abel 08/21/81
 Arthur C. Davis 08/22/43
 James F. Schwarz 8/26/1951
 Dennis J Cantwell 08/29/47
 Mark T. Winters 08/31/54

Jean Moore 2-Aug
 Gwen Bushko 4-Aug
 Marilyn Regits 7-Aug
 Lois Stewart 7-Aug
 Jennifer Weible 9-Aug
 Karen McGee 10-Aug
 Susan Sutherin 12-Aug
 Linda Allen 14-Aug
 Edith Coats Phelps 16-Aug
 Sandra Staas 16-Aug
 Carmella Markel 27-Aug
 Frances Osborne 28-Aug

Nicole LaPietra & James Cowher 2-Aug
 Brenda & Mark Winters 2-Aug
 Agnes & Thomas Strang 3-Aug
 Kyle & Martin Abel 4-Aug
 Sondra & James Schwarz 7-Aug
 Ashlee & Michael Amenti 10-Aug
 Susan & Gary Ireland 10-Aug
 Cindy & George Brown 12-Aug
 Agnes & Henry Franz 13-Aug
 Judi & Merlin Larsen 15-Aug
 Pamela & Ronald Lucas 15-Aug
 Emma & Andrew Wolbrueck 17-Aug
 Laura & Michael Cherock 21-Aug
 Sandra & George Staas 22-Aug
 Elizabeth & John Bistolas 23-Aug
 Erin & Aaron Houpt 23-Aug
 Evelyn & Herbert Hollingsworth 30-Aug
 Connie & Keith Small 31-Aug





Swabs: What a wonderful meeting. There were over 35 members and first mates in attendance – KUDOS TO ALL! Let's not stop growing as a base in membership and meeting attendance. We had lots of positive discussions on various subjects and was truly appreciated.

The Canonsburg and Midland parades were HUGE successes. There were twelve shipmates at the Canonsburg and 13 at the Midland parade. Lots of discussion on the age of our members and the long parade route's. It was decided that shipmate Flaugh will bring his trailer to the next parade, so the members and first mates can ride. All you have to do is bring a chair. This is not replacing our troop truck. The truck does local and close parades, because it's tires are old and he had a concern that the tires won't make it. We will co-ordinate with the two and see what parades can be covered by which ones.

On another note – I want to thank shipmates Brown & Calabrese for the wonderful donations during the parades. Brown supplied the liquid refreshments during the Midland parade and again afterwards at the Baden's American Legion. And Captain Tom set up all the cold ones at the Canonsburg VFW! KUDOS to both Tom and George. While we were at the Canonsburg parade a "bubble head" asked for an application – "Andrew Wolbrueck qualified on the USS KENTUCKY SSBN737 as a MMN1(SS) and is on active duty assigned to the Department of Energy – Navel Nuclear Propulsion Program. Andy lives in Bridgeville with his first mate Emma. He will be having a promotion ceremony when he becomes an officer. Details will be forth-coming! Please e-mail Andy and welcome him aboard – a.wolbrueck@gmail.com The base stands at 198

Our next parade is scheduled for Aug 14th in Titusville, Pa. Scheduled start of the parade will be 11:00. Parade information will be discussed at our base meeting on Aug 7th, at Baden's American Legion.

IDAHO FUND

The fund is doing extremely well - As of July 7th, it stands at \$10,141.00. The members present voted to increase our goal to \$15,000.00. We have committed member's donations and future purchasing of coin racks and submarine beer tap handles. By the next meeting we will be over \$11,000.00.

We will be adding individuals, groups or Veterans organizations that support us with donations, promotions and support of our base mission. I

Other Parades on our agenda:

1. St Patrick's Parade – September 18
2. Columbus Day Parade – Oct 9th
3. Veterans Day Parade – either day of – or Sat before.

WEBCAM

When: Tuesday, July 27th

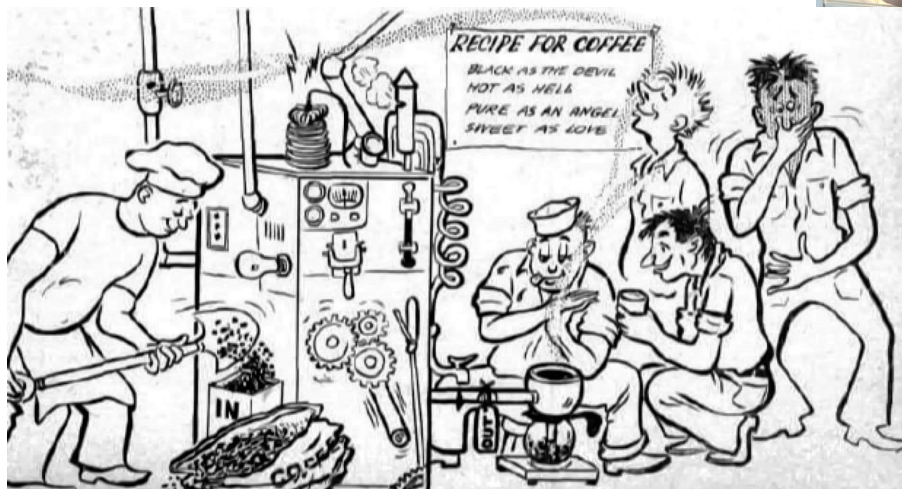
Time: 19:00 hours Eastern time

Speakers: RADM Richard Seif – CO Undersea Warfighting Development Ctr and Captain Jason Deichler – Director of training, at Naval Submarine School

1. You can let Jeff jeffsimon@zoominternet.net & Booky booky143@verizon.net know what specific questions that you would like the moderator to ask the speakers.
2. Let Huey hueyfromglenshaw@aol.com know if you intend to join the webinar by return e-mail.
3. An email invitation with a link to the Zoom Conference call/webinar will be sent to you the week before the webinar (week of July 18th)



If you would like to order a challenge coin holder or a Submarine Beer Tap Handle [with or without the stand] contact [Huey Dietrich](#)

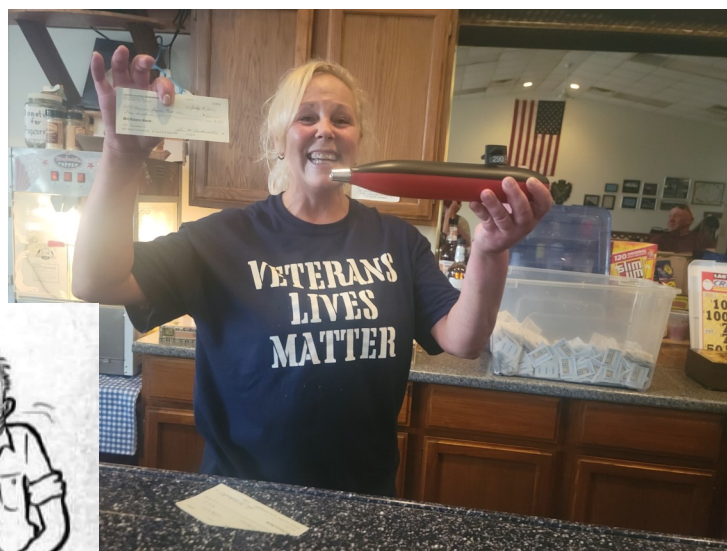


USS Idaho Support Fundraiser

Jul 10, 2021

Thank You, to everyone who has helped us reach our initial goal of \$10,000. Our fundraising efforts are going so well that we decided to increase the goal to 15,000.

We are Submariners and by nature, we are over achievers. Keep it up. The crew and their families appreciate the support.



American Legion Post 290 receiving their beer tap handle and a donation to the club.

USS Idaho crew members visiting Idaho Falls

By JOHN ROARK / jroark@postregister.com Jul 2, 2021

https://www.postregister.com/news/uss-idaho-crew-members-visiting-idaho-falls/article_2c3bde9d-0649-57e4-bc40-fa651bfbf6c4.html?fbclid=IwAR1OsZdT6HHHEU_TSmzTJADPQUvPm0V44P54bOFJjdQRr09sEcxon118PA



Andrew Leonhardt, PO 1st Class, fields questions about the USS Idaho at the American Legion Post 56



Darrell Pfannenstiel and Andrew Leonhardt, PO 1st class, joke about submarines at the American Legion Post 56.

Members of the U.S. Navy's USS Idaho (SSN 799) will be visiting Idaho Falls this weekend. The submarine crew kicked off their tour on Thursday night at the American Legion Post 56 to take part in a Commissioning Committee event. On Friday they will tour Experimental Breeder Reactor I and other sites at Idaho National Laboratory. On Saturday they will be part of the Fourth of July parade riding on a one-third replica of the USS Idaho and then head to Melaleuca Field where Cmdr. Nick Meyers will throw out the first pitch and swear in new Marines.

Idaho native and USS Idaho sailor Andrew Leonhardt, Petty Officer 1st Class, is part of the tour. "I'm glad that I can bring Idaho to the Idaho and vice versa, to bring the Idaho back to the people of Idaho," said Leonhardt.

The USS Idaho is a Virginia-class submarine undergoing construction in Groton, Connecticut and is expected to be commissioned in 2023.

This is the fifth navy vessel to be named Idaho. The last USS Idaho was a 32,000-ton New Mexico class battleship, that served during World War II and played a key role in the Battle at Iwo Jima. The ship was in service from 1919-1947.

"To bring Idaho back into the fleet is a huge honor, carrying on the legacy of battleship 42, we're going to continue that proud legacy," said Meyers.

The USS Idaho crew is still being put together; currently there are 73 sailors but there will be 120 when underway. The submarine will be a mixed gender boat and women should begin boarding next year, according to Meyers.

The USS IDAHO SSN 799 Commissioning Foundation and Committee was formed to raise funds to help increase the habitability of the boat for sailors as well as to donate to the Dolphin Scholarship Fund, which offers scholarship to kids of submariners. "This was a great opportunity to combine that Idaho generosity with a great project and it benefits the crew because of the upgrades that we're able to provide for them and as important is scholarships," said Park Price, advisory committee member.

The organization will also go to schools to teach kids about the new submarine, according to Vice Chairmen Bob Skinner. "To have a ship named after your state is a big deal and people from Idaho should be proud."

Virginia-class submarines are fast attack submarines that can maneuver in coastal water. They carry tomahawk land attack missile, Mark 48 torpedoes, and "a lot of other things we don't talk about," said Meyers. The boats can also carry and deploy special operation forces.

"The grit, adaptability, and ingenuity that runs deep here in Idaho also runs deep in our submarine force," said Meyers.



Month in Review

Canonsburg Parade



Even Captains do Field Day.
Captain Calabrese you are AWESOME.





Chaplin's Column

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

One of the amazing facts of our brain is that it can only think one thought at a time. And yet we all know people who put that idea to a challenge, I am sure. But it is true, we are capable of only one thought at a time. And that brings me to my article for this months SVD.

If indeed we can only think one thought at a time, then that become incredibly important to how we live our lives and go about our daily business. In a past article, I quoted Psalms 199:11, Thy Word have I hid in mine heart, that I might not sin against thee.

In our daily lives what we think is of vital importance. Do you dwell over a comment made by a co-worker, your boss, or perhaps your spouse.? Do you find your thoughts hanging on something that happened while you were driving? Then you can take an immediate action and replace those thoughts with something else and I recommend Gods Word. As a new believer I always recommend to them that they take some 3 x 5 cards and print out some scriptures that they can place in their thoughts as they go through the day. It makes a huge difference in both attitude and how you approach others.

I have listed some of the ones that I use and have at the ready so to speak.

Psalms 199.11 (see above)

Romans 8:31

2nd Corinthians 3:2

Galatians 5:22,23

Romans 8:1

Romans 8:37

Galatians 5:1

Ephesians 1:4

I have stated that there are over 500 promises in the Bible. We are encouraged to search the Word DAILY and make it our own. I am asked frequently on how to approach the Bible when reading it and have formed this response, the first book of the Bible I always encourage people to read is the book of Ephesians. And when they read it to place their name in the text whenever they can. It makes one realize the personal involvement that God and Christ desire in our lives. And the most amazing promises that are made to us. Then the book of Acts. It is a great history of the first century church culminating in Acts 19:20 one of the Great Statements. So mightily grew the Word of God and prevailed. Then Romans. But read to learn your standing with God and Christ.

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

July 10, 2021
Baden, PA

Base Commander Huey Dietrich called the meeting to order.

Attendees: Eric Bookmiller, Lee & Patsy Bookwalter, Clair Bouts, George Brown, Tom & Deneen Calabrese, Joe Campisi, Huey & Edie Dietrich, Rick & Judy Elster, Rick Flaugh, Jerry & Linda Gaylor, Dick & Beverly Geyer, Bill & Donna Greenlee, John Held, Mark Hoag, Lou Hamill, Jim Kontier, Chuck & Nancy Loskosh, Mike Markel, Chuck Shrump, Harry Sills, Carl Stigers, Jeff & Eileen Simon, Jack Sutherin, Chuck Warren, Chad Underkoffler

Base Commander Huey Dietrich gave the quote of the day: "Think of it this way. Where can you go to sea in the most awesome piece of equipment ever built, have great chow, outstanding shipmates and piss off Ivan and get paid for it?"

Requin History: July 13, 1945 USS Requin joined the Pacific Fleet in the Panama Canal Zone. July 31, 1945 USS Requin arrived in Pearl Harbor Hawaii.

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 S 28 (SS 133) July 4, 1944
USS ROBALO (SS 273) July 26, 1944
USS GRUNION (SS 216) July 30, 1942

We also remember our departed shipmate of the Requin Base Dex Armstrong, John Grienberger Steve Kossler, Joe Brenkus. Ed Covey, and Ron Shook. Let us also remember 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.

Secretary Jeff Simon reported that Minutes of the previous base meeting were 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: Keith Small, Bob Bittner, James Kontier, Tino Balcato
Eternal Patrol: None
Membership stands at 198.

Storekeeper Frank Nicotra Not present.
Nothing to reported on Eagle Scout court of honor presentations.
Today's guest speaker cancelled for health reasons.

Memorial and Ceremonies

Canonsburg Parade was held on Saturday July 3rd with 12 members participating

Midland Parade was held on July 4th with 13 members participating

Titusville parade will be held on August 14th

Application being made for Columbus Day parade in Bloomfield on October 9th

Application being made for St. Patrick's parade in Pittsburgh on September 18th

Possible attendance in Veterans Day in Pittsburgh parade date to be determined

Old Business:

Fund raising for USS Idaho support activities has exceeded our goal of \$10,000. A motion to raise the goal to \$15,000 was approved by the members present.

New Business:

Webcam meeting with Admiral Sief and Captain Jason on July 27th

Good of The Order:

Art Davis moving from Monaca to South Carolina.

JB Messer moved to Florida

District Commanders Election results were read.

Webcam meeting with Admiral Sief and Captain Jason on July 27th0

August meeting changed to August 7th at Baden PA at 1230 hours.

Float will be stored at Lou Hamill's house. Shelter has been purchased and will need assembled.

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 August 7, 2021

Problems in Heaven

Gabriel came to the Lord and said, "I have to talk to you. We have some Sub Sailors up here who are causing problems. They're swinging on the pearly gates, my horn is missing, breakfast SOS is all over their robes, they're racing the chariots, and they're wearing dixie cups and piss cutters instead of their halos. They refuse to keep the ladder to heaven clean. There are beer cans all over the place. Some of them are walking around with just one wing."

The Lord said, "Sub Sailors are Submariners, Gabriel. Heaven is home to all my children. If you want to know about real problems, call the Devil."

Gabriel gave the Devil a call. "Hello? answered the Devil, Hold on a minute." The Devil returned to the phone, "O.K., I'm back. What can I do for you?"

Gabriel replied, " I just want to know what kind of problems you're having down there."

The Devil said, "Hold on again. I need to check on something."

After about 5 minutes the Devil returned to the phone and said, "I'm back. Now what was the question?"

Gabriel said, "What kind of problems are you having down there?"

The Devil said, "I don't believe this...Hold on."

This time the Devil was gone 15 minutes. He returned and said, "I'm sorry Gabriel, I can't talk right now. Those damn A-Gangers have put out my fire and are trying to install air conditioning.



Upcoming Events

1. St Patrick's Parade – September 18
2. Columbus Day Parade – Oct 9th
3. Veterans Day Parade – either day of – or Sat before.

WEBCAM

When: Tuesday, July 27th

Time: 19:00 hours Eastern time

Speakers: RADM Richard Seif – CO Undersea Warfighting Development Ctr and Captain Jason Deichler – Director of training, at Naval Submarine School

* Let Huey hueyfromglenshaw@aol.com know if you intend to join the webinar by return e-mail.

* An email invitation with a link to the Zoom Conference call/webinar will be sent to you the week before the webinar (week of July 18th)



Membership

Regular Members	181	Holland Club	89	USSVI Life Members	75
Associate Members	13	WWII	5	Base Life Members	50
Total Members	198				



New Members

Andrew Wolbrueck qualified on the USS KENTUCKY SSBN - 737 in 1973 as an MMN1(SS) and is still on active duty. Andy lives in Bridgeville, with his first mate Emma. Please email Andy and welcome him aboard - a.wolbrueck@gmail.com



Eagle Scouts

Please direct all Eagle Court of Honor requests to <https://requinbase.org/eagle-coh>

Congratulations to:
Damian Jeffrey Williams T-023



Featured Boat

History

Builder	Portsmouth Naval Shipyard , Kittery, Maine
Laid down	9 September 1943
Launched	27 January 1944
Commissioned	12 April 1944
Decommissioned	27 June 1968
Stricken	30 June 1968
Fate	Sunk as target off San Diego, California , 6 February 1969

General characteristics

Class and type	Balao-class diesel-electric submarine
Displacement	1,526 tons (1550 t) surfaced 2,391 tons (2429 t) submerged
Length	311 ft 6 in (94.95 m)
Beam	27 ft 3 in (8.31 m)
Draft	16 ft 10 in (5.13 m) maximum
Propulsion	4 × Fairbanks-Morse Model 38D8-1/8 10- cylinder opposed piston diesel engines driving electrical generators 2 × 126- cell Sargo batteries 4 × high-speed Elliott electric motors with reduction gears two propellers 5,400 shp (4.0 MW) surfaced 2,740 shp (2.0 MW) submerged
Speed	20.25 knots (37 km/h) surfaced 8.75 knots (16 km/h) submerged
Range	11,000 nm (20,000 km) surfaced at 10 knots (19 km/h)
Endurance	48 hours at 2 knots (4 km/h) submerged <ul style="list-style-type: none"> 75 days on patrol
Test depth	400 ft (120 m)
Complement	10 officers, 70–71 enlisted
Armament	10 × 21-inch (533 mm) torpedo tubes <ul style="list-style-type: none"> 6 forward, 4 aft 24 torpedoes 1 × 5-inch (127 mm) / 25 caliber deck gun Bofors 40 mm and Oerlikon 20 mm cannon



07/02/1945

USS Barb (SS 220) bombards Japanese installations on Kaihyo Island, Japan in the first successful use of rockets against shore positions.

07/05/1942

USS Growler (SS 215) torpedoes and sinks the Japanese destroyer, Arare, in the Salmon Lagoon, off Kiska. In the attack, USS Growler damages destroyers Kasumi and Shiranui.

07/06/1944

USS Paddle (SS 263) attacks a Japanese convoy northwest of Halmahera and sinks destroyer Hokaze off Sangi Island. Also on this date, USS Sealion (SS 315) attacks a Japanese convoy in the East China Sea and sinks merchant passenger cargo ship Setsuzan Maru off Ningpo, China while USS Tang (SS 306) sinks Japanese freighter Dori Maru in Chosen Bay.

07/09/1960

USS Thresher (SSN 593) is launched at Portsmouth, N.H.

07/09/1994

USS Rhode Island (SSBN 740) is commissioned at Groton, Conn. The Ohio-class ballistic-missile submarine.

07/10/1945

USS Runner (SS 476) sinks the Japanese minesweeper (No.27) off Tado Saki, Honshu.

07/10/1993

USS Nebraska (SSBN 739) is commissioned at New London, Conn., the 14th Ohio-class submarine.

07/11/1944

USS Sealion (SS 315), in the Yellow Sea off the west coast of Korea, near Shosei Jima, sinks two Japanese freighters.

07/11/1987

USS Helena (SSN 725) is commissioned at Groton, Conn. The Los Angeles-class nuclear attack submarine is the fourth named for the capitol of Montana.

07/13/1991

USS Kentucky (SSBN 737) is commissioned at Groton, Conn., the third Navy vessel to be named after the Bluegrass state. The thoroughbred of the Fleet is an Ohio-class ballistic missile submarine.

07/15/1942

USS Grunion (SS 216) sinks the Japanese submarine chasers (25 and 26) off Kiska, Aleutian Islands.

07/17/1944

USS Gabilan (SS 252) sinks Japanese minesweeper (W 25) northwest of Zenizu, Japan.

07/18/1981

USS Dallas (SSN 700) is commissioned at Groton, Conn., her first homeport. The Los Angeles-class nuclear-powered attack submarine is the first to be built with an all-digital fire control and sonar system.

07/19/1997

USS Seawolf (SSN 21) is commissioned at Electric Boat Shipyard in Groton, Conn.

07/20/1945

USS Threadfin (SS 410) sinks the Japanese minesweeper (W 39) northwest of Mokpo, Korea.

07/20/1960

In the first launch of the Polaris missile, USS George Washington (SSBN 598) successfully fires two operational Polaris missiles while submerged off Florida.

07/24/1942

USS Narwhal (SS 167) sinks Japanese guardboat No.83 Shinsei Maru, at Utsutsu Bay, Hokkaido. USS Narwhal also sinks freighters Nissho Maru off Etorofu Maru, Kuril Island, and Kofuji Maru off Oito.

07/24/1993

USS Columbus (SSN 762) is commissioned onboard Submarine Base New London, Groton, Conn. The Los Angeles-class nuclear-powered attack submarine is the fifth ship to be named Columbus for the Navy.

07/27/1943

USS Scamp (SS 277) torpedoes and sinks the Japanese submarine (I 168), which had sunk USS Yorktown (CV 5) and USS Hammann (DD 412) at the Battle of Midway, south-south-west of Truk. USS Scamp also damages the Japanese oiler, Kazahaya.

07/27/1985

USS Providence (SSN 719) is commissioned at Groton, Conn., the fifth ship in the Navy to be named after the Rhode Island city.

07/28/1926

USS S-1 surfaces and launches a Cox-Klemin (XS 2) seaplane flown by Lt. D.C. Allen. The submarine recovers the aircraft and submerges, successfully completing an airplane transport on board a submarine.

07/29/1944

USS Balao (SS 285) shells and sinks Japanese sampan (No.7) Nissho Maru about 100 miles off Palau. USS Drum (SS 228) sinks Asahi Maru with gunfire in the same general area, and takes survivors prisoner. Also on this date, USS Perch (SS 313) sinks Japanese guardboat Kannon Maru I-Go in the Philippine Sea, east of Dinagat Island.

07/29/1995

USS Maine (SSBN 741) is commissioned at Portsmouth Naval Shipyard, Kittery, Maine. The Ohio-class nuclear-powered ballistic-missile submarine is the third Navy vessel to be named after the state.

07/31/2010

USS Missouri (SSN 780) is commissioned at Groton, Conn., her homeport. The seventh Virginia-class attack submarine is the fourth Navy vessel to honor the state of Missouri.



Navy Next-Generation Attack Submarine (SSN[X]) Program: Background and Issues for Congress

Congressional Research Service June 30, 2021 Ronald O'Rourke, Specialist in Naval Affairs

<https://crsreports.congress.gov/product/pdf/IF/IF11826>

Introduction and Issue for Congress

The Navy wants to begin procuring a new class of nuclear-powered attack submarine (SSN), called the Next- Generation Attack Submarine or SSN(X), in FY2031. The SSN(X) would be the successor to the Virginia-class SSN design, which the Navy has been procuring since FY1998. The Navy's proposed FY2022 budget requests \$98.0 million in research and development funding for the SSN(X) program. An issue for Congress is whether to approve, reject, or modify the Navy's funding requests and acquisition strategy for the SSN(X) program.

Submarines in the U.S. Navy

The U.S. Navy operates three types of submarines— nuclear-powered ballistic missile submarines (SSBNs), nuclear-powered cruise missile and special operations forces (SOF) submarines (SSGNs), and nuclear-powered attack submarines (SSNs). The SSNs are general-purpose submarines that can perform a variety of peacetime and wartime missions.

Virginia-Class Program

Since FY2011, Virginia-class SSNs (**Figure 1**) have been procured at a rate of two boats per year, and a total of 34 have been procured through FY2021. Most Virginia-class boats procured in FY2019 and subsequent years are to be built with the Virginia Payload Module (VPM), an additional, 84-foot-long, mid-body section equipped with four large-diameter, vertical launch tubes for storing and launching Tomahawk cruise missiles or other payloads. When procured at a rate of two boats per year, VPM-equipped Virginia-class SSNs have an estimated procurement cost of about \$3.4 billion per boat.



Figure 1. Virginia-Class Attack Submarine (SSN)

For additional information on Navy submarines, the Virginia-class SSN program, and the Columbia-class SSBN program, see CRS Report RL32418, *Navy Virginia (SSN- 774) Class Attack Submarine Procurement: Background and Issues for Congress*, by Ronald O'Rourke, and CRS Report R41129, *Navy Columbia (SSBN-826) Class Ballistic Missile Submarine Program: Background and Issues for Congress*, by Ronald O'Rourke.

Submarine Construction Industrial Base

U.S. Navy submarines are built by General Dynamics' Electric Boat Division (GD/EB) of Groton, CT, and Quonset Point, RI, and Huntington Ingalls Industries' Newport News Shipbuilding (HII/NNS), of Newport News, VA. These are the only two shipyards in the country capable of building nuclear-powered ships. GD/EB builds submarines only, while HII/NNS also builds nuclear-powered aircraft carriers and is capable of building other types of surface ships.

In addition to GD/EB and HII/NNS, the submarine construction industrial base includes hundreds of suppli-

er firms, as well as laboratories and research facilities, in numerous states. Much of the material procured from supplier firms for the construction of submarines comes from sole-source suppliers. For nuclear-propulsion component suppliers, an additional source of work is the Navy's nuclear-powered aircraft carrier construction program.

Figure 1. Virginia-Class Attack Submarine (SSN)

Source: Cropped version of photograph accompanying Dan Ward, "Opinion: How Budget Pressure Prompted the Success of Virginia-Class Submarine Program," *USNI News*, November 3, 2014. The caption states that it shows USS *Minnesota* (SSN-783) under construction in 2012, and credits the photograph to the U.S. Navy.

SSN(X) Program

Program Designation

In the designation SSN(X), the "X" means that the exact design of the boat has not yet been determined.

Procurement Schedule

Under the Navy's FY2020 30-year (FY2020-FY2049) shipbuilding plan, the first SSN(X) would be procured in FY2031, along with a single Virginia-class boat. In FY2032 and FY2033, the final four Virginia-class boats would be procured, at a rate of two per year. Procurement of follow-on SSN(X)s, at a rate of two per year, would then begin in FY2034. The 30-year plan's sustained procurement rate of two SSNs per year would achieve a force of 66 SSNs—the Navy's current SSN force-level goal—in FY2048.

A subsequent 30-year Navy shipbuilding document that the Trump Administration released on December 9, 2020—a document that can be viewed as the Trump Administration's final published vision for future Navy force structure and/or a draft version of the FY2022 30-year shipbuilding plan—proposed a new SSN force-level goal of 72 to 78 boats. To meet this goal by the latter 2040s, it projected an SSN procurement rate of three boats per year during the period FY2035-FY2041, and two and two-thirds boats per year (in annual quantities of 2-3-3) during the period FY2042-FY2050.

Design of the SSN(X)

The Navy states that the SSN(X)

will be designed to counter the emerging threat posed by near peer adversary competition for undersea supremacy. Unlike the VIRGINIA Class Submarine, which was designed for multimission dominance in the littoral, SSN(X) will be designed for greater transit speed under increased stealth conditions in all ocean environments, and carry a larger inventory of weapons and diverse payloads. It will also be designed to retain multi-mission capability and sustained combat presence in denied waters, with a renewed priority in the anti-submarine warfare (ASW) mission against sophisticated threats in greater numbers. SSN(X) will be required to defend against threat UUVs [unmanned underwater vehicles], and coordinate with a larger contingent of off-hull vehicles, sensors, and friendly forces.

(Budget-justification book for FY2022 Research, Development, Test, and Evaluation, Navy account, Vol. 3 [Budget Activity 5], p. 1301.)

The Navy is examining three broad design options for the SSN(X)—a design based on the Virginia-class SSN design, a design based on the Columbia-class SSBN design, and a brand new design. An industry official stated that the SSN(X) might have a beam (i.e., hull diameter) greater than that of the Virginia-class design (34 feet), and closer to that of the Navy's Seawolf-class SSN design and Columbia-class SSBN design (40 and 43 feet, respectively).

Potential Procurement Cost

Based on the Navy's desired capabilities for the SSN(X), the Navy and the Congressional Budget Office (CBO) expect the SSN(X) to be substantially more expensive to procure than the Virginia-class design. An April 2021 CBO report on the December 9, 2020, 30-year Navy shipbuilding document states that in constant FY2021 dollars, the SSN(X)'s average unit procurement cost is estimated at \$5.8 billion by the Navy and \$6.2 billion by CBO.

FY2022 Funding

The Navy's proposed FY2022 budget requests \$98.0 million in research and development funding for the SSN(X) program, including \$29.8 million in Project 2368 (SSN[X] Class Submarine Development) within Program Element (PE) 0604850N (SSN[X]) and \$68.1 million in Project 2370 (Next Generation Fast Attack Nuclear Propulsion Development). The SSN(X) program is also leveraging Virginia-class research and development work funded through Project 1947 (New Design SSN HM&E [hull, mechanical, and electrical]) within PE 0604558N (New Design SSN). (New Design SSN here refers to the Virginia-class SSN.)

Issues for Congress

Issues for Congress include the following:

- * whether the Navy has accurately identified the SSN(X)'s required capabilities and accurately analyzed and incorporated the impact that various required capabilities can have on the SSN(X)'s procurement cost and life-cycle operation and support (O&S) cost;
- * the potential impact of the SSN(X) program—given the design's currently estimated unit procurement cost and potential future Navy funding levels—on funding that will be available for other Navy program priorities;
- * whether it would be technically feasible for the SSN(X) to be powered by a reactor plant using low-enriched uranium (LEU), rather than the highly enriched uranium (HEU) used on other Navy nuclear-powered ships, and if so, what impact using LEU in the SSN(X) would have on nuclear arms control and nonproliferation efforts and SSN(X) costs and capabilities.
- * whether each SSN(X) should be built jointly by GD/EB and HII/NNS (the approach that has been used for building Virginia-class SSNs and, in modified form, is to be used for building Columbia-class SSBNs), or whether individual SSN(X)s should instead be completely built within a given shipyard (the separate-yard approach used for building earlier Navy SSNs and SSBNs).

Regarding the third issue above, a July 2018 letter to Congress from Naval Reactors (the office within the Navy and the Department of Energy responsible for designing Navy reactor plants) stated that “substantial technology development of an advanced naval fuel [using LEU] would be needed to increase uranium loading in naval reactors while simultaneously meeting performance requirements of U.S. Navy warships,” and that “initial ship concept design studies [for the SSN(X)] would need to occur no later than the mid 2020s, nearly a decade before sufficient advanced fuel information could be available to support reactor design efforts.” The letter stated that “Naval Reactors provided a report to Congress in July 2016 outlining a 15-year test and development effort that would need to be done to support initiating a reactor design using advanced fuel.”

Regarding the fourth issue above, the Navy and Congress chose the joint-production strategy for the Virginia-class program as a means of preserving two U.S. submarine construction shipyards during an expected period of relatively low annual submarine procurement rates. For the SSN(X) program, factors to consider include the expected future submarine procure-

SSBN / SSGN Ohio Class Submarine

<https://www.naval-technology.com/projects/ohio-class-submarine/>



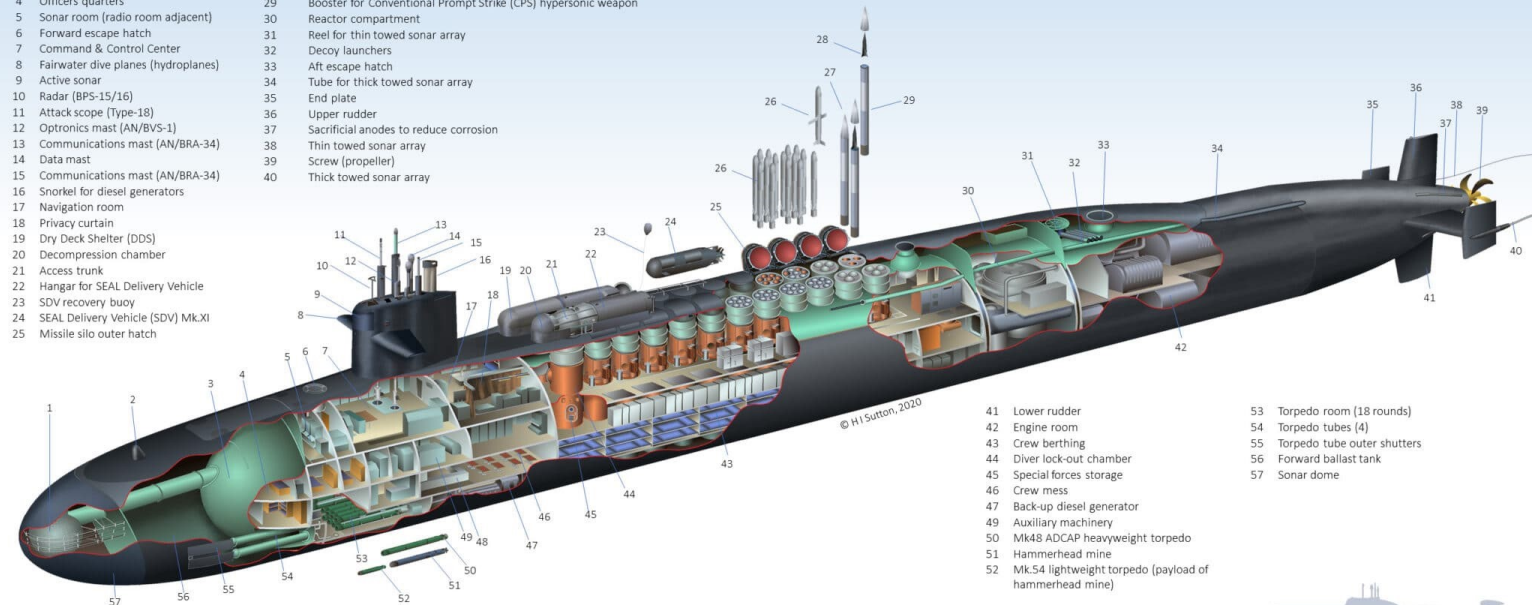
Ohio Class Cruise Missile Submarine (SSGN)

Provisional illustration based Open Sources



Key

- | | |
|---------------------------------------|---|
| 1 Spherical sonar array (AN/BQQ-6) | 26 UGM-109E Tomahawk Land Attack Missile (TLAM Block IV) |
| 2 Intercept sonar | 27 New Hypersonic missile, provisional depiction |
| 3 Forward bulkhead | 28 Common Hypersonic Glide Body (CHGB) |
| 4 Officers quarters | 29 Booster for Conventional Prompt Strike (CPS) hypersonic weapon |
| 5 Sonar room (radio room adjacent) | 30 Reactor compartment |
| 6 Forward escape hatch | 31 Reel for thin towed sonar array |
| 7 Command & Control Center | 32 Decoy launchers |
| 8 Fairwater dive planes (hydroplanes) | 33 Aft escape hatch |
| 9 Active sonar | 34 Tube for thick towed sonar array |
| 10 Radar (BPS-15/16) | 35 End plate |
| 11 Attack scope (Type-18) | 36 Upper rudder |
| 12 Optronics mast (AN/BVS-1) | 37 Sacrificial anodes to reduce corrosion |
| 13 Communications mast (AN/BRA-34) | 38 Thin towed sonar array |
| 14 Data mast | 39 Screw (propeller) |
| 15 Communications mast (AN/BRA-34) | 40 Thick towed sonar array |
| 16 Snorkel for diesel generators | |
| 17 Navigation room | |
| 18 Privacy curtain | |
| 19 Dry Deck Shelter (DDS) | |
| 20 Decompression chamber | |
| 21 Access trunk | |
| 22 Hangar for SEAL Delivery Vehicle | |
| 23 SDV recovery buoy | |
| 24 SEAL Delivery Vehicle (SDV) Mk.XI | |
| 25 Missile silo outer hatch | |



- | | |
|--|--------------------------------|
| 41 Lower rudder | 53 Torpedo room (18 rounds) |
| 42 Engine room | 54 Torpedo tubes (4) |
| 43 Crew berthing | 55 Torpedo tube outer shutters |
| 44 Diver lock-out chamber | 56 Forward ballast tank |
| 45 Special forces storage | 57 Sonar dome |
| 46 Crew mess | |
| 47 Back-up diesel generator | |
| 49 Auxiliary machinery | |
| 50 Mk48 ADCAP heavyweight torpedo | |
| 51 Hammerhead mine | |
| 52 Mk54 lightweight torpedo (payload of hammerhead mine) | |

NAVALNEWS



The Ohio Class submarines serve the US Navy as virtually undetectable undersea launch platforms of intercontinental missiles. The Electric Boat Division of General Dynamics based at Groton, Connecticut, built 18 Ohio submarines commissioned between 1981 and 1997.

The submarines of the Pacific Fleet are based at Bangor, Washington, and those of the Atlantic Fleet at King's Bay, Georgia. The submarines spend 70 days at sea followed by 25 days in the dock for overhaul.

The Ohio class is planned to be replaced by the future Columbia and Dreadnought SSBNs. The first submarine in the Dreadnought SSBN class is expected to enter service in the late 2020s.

Ohio SSGN submarine conversion

According to the requirements of the Strategic Arms Reduction Treaty, START II, which was agreed in June 1992, the number of strategic missile submarines was limited to 14 from 2002. Rather than decommissioning these four submarines, the US Navy has converted them to conventionally armed nuclear-powered (SSGNs) submarines.

In September 2002, Electric Boat received a contract for the conversion of USS Ohio (SSBN 726), Michigan (727), Florida (728) and Georgia (729). The submarines were refitted with up to 154 Tomahawk TLAM (land attack) or Tactical Tomahawk (block IV) missiles and are also capable of conducting special operations missions with accommodation for Northrop Grumman advanced SEAL delivery systems (ASDS), mission control center and 102 special operation troops.

General Dynamics Advanced Information Systems is modifying the Trident fire control system for the Tomahawk weapon control.

Northrop Grumman Electronic Systems is adapting the missile launch tubes, developing a multiple all-up round canister (MAC), which provides storage and launch of up to seven Tomahawk missiles from each of the submarine's 22 missile tubes. The SSGN submarines are also fitted with the Raytheon AN/BYG-1 combat data system.

USS Ohio began conversion in November 2002, which was completed in January 2006, when the ship rejoined the fleet following sea trials in December 2005. USS Florida began the SSGN conversion in July 2003 and rejoined the fleet in April 2006. USS Michigan returned to service in June 2007. USS Georgia was delivered from conversion in December 2007 and returned to service in March 2008. SSBN's USS Pennsylvania and USS Kentucky have shifted homeport from Kings Bay to Bangor to balance the strategic force.

In November 2007, USS Ohio left for final trials off Hawaii before beginning its first operational deployment as an SSGN in the western Pacific Ocean.

In January 2003, USS Florida took part in Naval Sea Systems Command (NAVSEA) experiment 'Giant Shadow' to test the capabilities of the new SSGNs. The experiment included validation launches of two Tomahawk missiles, the first-ever launch of an unmanned underwater vehicle (UUV) and insertion of a [navy](#) SEALs force. The SSGN will have the capacity to accommodate 66 SEALs.

Advanced SEAL delivery system (ASDS)

The Northrop Grumman advanced SEAL delivery system (ASDS) is a submersible for the delivery of US Navy SEALs and combat gear to the shore. Each Ohio SSGN had its two forward-most missile tubes converted into ASDS capable lock-out chambers. ASDS is equipped with multiple sonars, GPS/ inertial navigation, communications and electronic support measures (ESM). It was also fitted to Los Angeles Class submarines USS Charlotte (SSN-766) and the USS Greeneville (SSN-772) and will equip the Virginia Class SSNs.

In March 2008, USS Michigan successfully completed the operational evaluation of ASDS across a range of operational conditions.

Trident missiles

Ohio Class submarine is equipped with the Trident strategic ballistic missile from Lockheed Martin Missiles and Space. The Trident was built in two versions, Trident I (C4), which is being phased out, and the larger and longer-range Trident II (D5), which entered service in 1990.

The submarines received the new D5LE missiles in 2013 under the D5 life extension programme. The new missiles are expected to remain in service till the 2040s.

The first eight submarines, (SSBN 726 to 733 inclusive) were equipped with Trident I and the following ten (SSBN 734 to 743) carry the Trident II. Conversion of the four Trident I submarines remaining after START II (Henry M Jackson, Alabama, Alaska and Nevada) to Trident II began in 2000 and was completed in 2008.

Lockheed Martin received a contract in January 2002 for the production of 12 Trident II missiles for the four submarines.

The submarine has the capacity for 24 Trident missile tubes in two rows of 12. The dimensions of the Trident II missile are 1,360cm-long with a diameter of 210cm and the weight is 59,000kg. The three-stage solid-fuel rocket motor is built by Alliant Techsystems (ATK) Thiokol Propulsion.

The US Navy describes the range as 'greater than 7,360km' but this could be up to 12,000km, depending on the payload mix. Missile guidance is provided by an inertial navigation system supported by stellar navigation.

Trident II is capable of carrying up to 12 multiple independent re-entry vehicles (MIRVs), each with a yield of 100k, although the SALT treaty limits this number to eight a missile. The circle of equal probability (the radius of the circle, within which half the strikes will impact) is less than 150m. The Sperry Univac Mark 98 missile control system controls the 24 missiles.

Four Ohio class submarines have been converted into SSGN conventional cruise missile platforms to replace their Tridents.

Ohio Class submarine torpedoes

The Ohio Class submarine is fitted with four 533mm torpedo tubes with an mk118 digital torpedo fire control system. The torpedoes are the Gould mk48.

The mk48 is a heavyweight torpedo with a warhead of 290kg, which has been operational in the US Navy since 1972. The torpedo can be operated with or without wire guidance and the system has active and / or passive acoustic homing.

The range is up to 50km at a speed of 40k. After launch, the torpedo carries out target search, acquisition and attack procedures delivering to a depth of 3,000ft.

Ohio Class submarine countermeasures

The Ohio Class submarine is equipped with eight launchers for the mk2 torpedo decoy. Electronic warfare equipment is the WLR-10 threat warning system and the WLR-8(V) surveillance receiver from GTE of Massachusetts.

The WLR-8(V) uses seven YIG-tuned and vector-tuned superheterodyne receivers to operate from 50MHz up to J-band. An acoustic interception and countermeasures system, AN/WLY-1 from Northrop Grumman, was developed to provide the submarine with an automatic response against torpedo attack.

Sensors

The surface search, navigation and fire control [radar](#) is BPS 15A I/J-band radar. The sonar suite includes IBM BQQ 6 passive search sonar, Raytheon BQS 13, BQS 15 active and passive high-frequency sonar, BQR 15 passive towed array from Western Electric, and the active BQR 19 navigation sonar from Raytheon. Kollmorgen Type 152 and Type 82 periscopes are fitted.

The Ohio submarines were upgraded with the Lockheed Martin AN/BQQ-10(V4) sonar processing system under the acoustic-rapid commercial-off-the-shelf insertion (A-RCI) programme.

Propulsion

The main machinery is the pressure water reactor GE PWR S8G with two turbines, providing 60,000hp and driving a single shaft. The submarine is equipped with a 325hp Magnatek auxiliary prop motor. The propulsion provides speed in excess of 18k surfaced and 25k submerged.

All four Ohio Class SSGNs will reach the end of their 42-year life and are scheduled to retire by 2028 without replacement.



Requin Base Supporters

The task of perpetuating the memory of our lost shipmates is forever and cannot be done alone. This task takes time, money, dedication and patriotism from all walks of life both veteran and civilian. USS Requin Base would like to recognize all those that help us fulfill the task of remembering and honoring those we have lost to secure the freedoms we enjoy.



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