



February 2021

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.”

Table of Contents

Meeting Information	2
Officers (National & Local)	3
Binnacle List	4
Eternal Patrol	4
Boats Lost	4
Birthdays	5
Anniversaries	5
Commander's Corner	6
Chaplin's Column	8
Store Keepers Report	8
Meeting Minutes	9
Month in Review	10
Upcoming Events	11
Membership	11
This month in US submarine history	12
Rescue from the Heart of a Typhoon	15
67 Years of Nuclear Domination	22
Day-Day Breakdown of Coronavirus Infection	26

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

March 13, 2021

At the Houston PA American Legion

Base Location



American Legion Post 641
271 State St
Baden PA 15005

From the Editor

I would like to thank Jack Sutherin for 12 years of hard work and dedication as the SVD editor.

While Jack is stepping back as the editor I hope that he continues to support and contribute to the SVD to bring you the most comprehensive Requin Base happenings and submarine information.

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

Office	Officer	Phone	eMail
National Commander	Wayne Standerfer	972-298-8139	lwaynes@charter.net
Senior Vice Commander	Jon Jaques	615-893-7800	jjaques@bellsouth.net
Junior Vice Commander	Steven Bell	704-824-3510	usnret82@carolina.rr.com
Secretary	Raymond Wewers	479-967-5541	raywewers@gmail.com
Treasurer	Paul Hiser	910-691-5650	paulhiser664@gmail.com
Past Commander	John Markiewicz	904-743-2924	markiewiczjohn4@gmail.com
Chaplain	Carl Stigers	412-995-8028	carstenstigers@verizon.net
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
Base Commander	Hubert C. Dietrich	412-486-2635	hueyfromglenshaw@aol.com
1st Vice Commander	Carl Stigers	412-995-8028	carstenstigers@verizon.net
2nd Vice Commander	Rick Elster	412-751-7967	relster565@comcast.net
Secretary	Jeff Simon	724-502-4505	jeffsimon@zoominternet.net
Treasurer	Lee M. Bookwalter	412-795-8337	booky143@verizon.net
Storekeeper	Frank Nicotra	412-835-6540	nicotrafrank@gmail.com
Chaplain	Carl Stigers	412-995-8028	carstenstigers@verizon.net
Past Base Commander	Joe Campisi	412-322-3201	jcampisi654@comcast.net
Newsletter Editor	Lou Hamill	412-445-3998	itgeek8088@gmail.com
Webmaster	Lee M. Bookwalter	412-795-8337	booky143@verizon.net
COB/Historian	Chad Underkoffler	724-809-6830	candj981@verizon.net
Photographer	Rick Flaugh	412-779-0497	flaughre@comcast.net
Holland Club Chairman	Joe Campisi	412-322-3201	jcampisi1@comcast.net
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	rredde@gmail.com

Binnacle List



Jack Sutherin

James Kontier

Ted Underkoffler

Ron Horton

Lee "Booky" Bookwalter

Mrs. Stigers (Carl Stigers Mom)

Eternal Patrol



Ginny Sutherin (First Mate of Jack Sutherin)

Boats Lost



Tolling of the Boats for February

USS Scorpion (SS-278)

Lost on Feb 1, 1943 with the loss of 77 officers and men in the East China Sea, on her 4th war patrol. It is assumed she was sunk by a mine.

USS Barbel (SS-316)

Lost on Feb 4, 1945 with the loss of 81 officers and men on her 4th war patrol. Based on Japanese records, she was bombed near the southern entrance to the Palawan Passage. The day before, she reported she survived 3 depth charge attacks.

USS Shark I (SS-174)

Lost on Feb 11, 1942 with the loss of 59 officers and men on her 1st war patrol. Shark was the 1st US submarine sunk by enemy surface craft in the Pacific. She was most likely sunk by depth charges.

USS Amberjack (SS-219)

Lost on Feb 16, 1943 with the loss of 72 officers and men on her 3rd war patrol. Off Rabaul, she was attacked by a Japanese patrol plane, attacked by a torpedo boat and then depth charged by a subchaser. One additional man was killed earlier on the last patrol.

USS Grayback (SS-208)

Lost on Feb 26, 1944 with the loss of 80 officers and men on her 10th war patrol. She appears to have been caught on the surface in the East China Sea by a Japanese carrier plane whose bombs made a direct hit. During this patrol she sank 4 ships totaling 21,594 tons and was tied for 11th in the number of ships sunk.

USS Trout (SS-202)

Lost on Feb 29, 1944 with the loss of 81 officers and men on her 11th war patrol. She was sunk by escorts in the middle of the Philippines Basin after sinking a passenger-cargoman and damaging another in a convoy. She carried out several notable special missions, including carrying over two tons of gold bullion out of Corregidor in February 1942.

Birthdays				Anniversaries	
Member		Spouse			
Gregory Poole	03/01/72	Patricia Koppenhaver	3/1	Sheila & Richard McCullough	3/1
James Kontir	03/02/40	Lois Tripp	3/2	Noreen & Richard Beauregard	3/5
Edwin Derr	03/04/42	Cathy Clark Jr	3/9	Valerie & James Wendell	3/15
Reno Farina	03/04/44	Ashlee Amenti	3/10	Sherry & Charles Nixon	3/20
Michael Pellegrino	03/04/52	Christine Gaines	3/10		
Richard Elster	03/05/41	Claudia Bistyga	3/12		
Thomas Clark Jr	03/08/44	Mary Bayne	3/15		
Mark Ralph Hoag	03/08/69	Karen Lewis	3/17		
Eric Greenwald	03/10/74	Dorothy Bonnett	3/19		
David Alters	03/11/70	Diana Howton	3/19		
Mike Allen	03/14/49	Vicky Smith	3/19		
Larry Huntsman	03/15/67	Jacqueline Hall	3/20		
Gregory Bushko	03/18/54	Carol Lyons	3/21		
Jeffrey Thompson	03/18/71	Margaret Ashmore	3/27		
Henry Franz	03/21/31	Laura Cherock	3/28		
James Johnston	03/22/44	Edie Dietrich	3/30		
Eber Tripp	03/22/46	Jordan Lawrence	3/31		
Thomas Calabrese	03/23/62				
Michael Wyckoff	03/24/54				
Thomas Weible	03/24/64				
Robert Sampson III	03/26/43				
Steve Burelson	03/26/67				

Our February meeting went extremely well and had great input from our Zoom members. Thankfully our binnacle list keeps reducing. Booky, our base treasurer is home after having triple by-pass surgery, and doing well. Jack Sutherin is getting stronger every day and even attempted to try and participate at the meeting, but decided not to try coming from Ohio. Our thoughts and prayers are with his first mate Ginny, who sailed on Eternal Patrol, after losing her battle with the COVID-19. Jimmy Kontier is running around with a walker and is scheduled for a knee replacement, the first week of March.

Our base membership stands at 194 and hopefully will grow in 2021!

We had a great time participating in the S.S. Dorchester memorial service at the American Legion. Shipmates, Huey, Campisi, Hamill, Underkoffler, Metz, Masterson and Stigers all attended. We had a special picture re-produced of the four chaplains, who lost their lives, by giving their life vests to other soldiers. The officers of the Legion loved it so much, that immediately afterwards, they hung it on their wall of honor. If you go to our website, you can look at the pictures of the service.

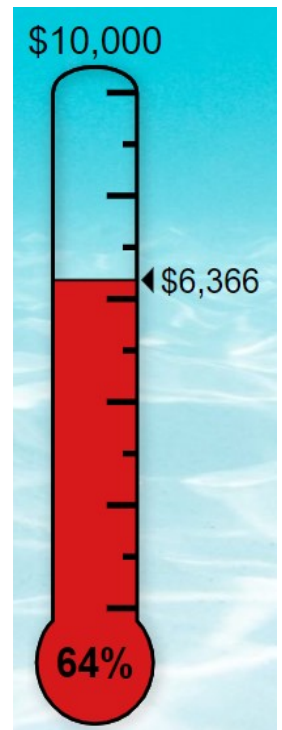
Our Idaho fund raiser is coming along very well. Our goal is to reach \$10,000.00. As of today, we have \$6,366.21 in the account. We have a balance of \$3,633.79 that we need to raise to attain our goal of \$10,000.00. At the meeting, our shipmates stepped up and donated \$130.00 to bring us to our present total.

To support the Idaho, we also purchased some articles from the IDAHO that we will be selling in our small stores. We asked for a few articles to use as sample pieces, but they all went really fast, with just a few left.

We have Idaho officers and enlisted hats, officers and enlisted lanyard's, patches, and great looking Hoodies. They went over so well, that twelve individuals from the legion wanted us to order more for them, along with our shipmates that needed other sizes. Hopefully we can take some pictures and have them on our website to show you.

We received a wonderful letter (see page 7) from the Storekeeper from the Idaho, which makes us all very happy that we are supporting them.

Our next base meeting is tentatively scheduled for March 13th in Houston, Pa. Look for a meeting notice with all the information and directions.



PCU IDAHO (SSN 799)
ELECTRIC BOAT CORP
75 EASTERN POINT RD RR GATE
BLDG 130, STA D56
GROTON, CT 06340

26JAN2021

Mr. Hubert Dietrich,

I wanted to reach out to you with this to personally say thank you for your support of the crew, the command, and the boat in its entirety.

In these early stages of the boat's life, having people such as yourself who are willing to help us, promote us, and support us means a world of difference for all of us. The initial building and manning process is tedious and tiresome, filled with training and waiting. Knowing that we have you in our corner is a huge morale booster to us, and we hope to perform in such a way to make you and all veterans of the submarine force and the previous ships bearing the name IDAHO proud.

You and your fellow veterans provide a lifeline to our history and traditions, and a network to share our experiences. Nobody but a current or former submariner could possibly comprehend the lives we live. For that reason, the conversations, interactions, and discussions that we as the submarine community share with each other help to keep the beauty and mystery alive.

If there is every anything that the crew of the USS Idaho can do to help and support you and the veterans of Requin Base, please feel free to reach out. You all are our brothers, and we will do anything in our power to live up to that.

Again, on behalf of the crew of the USS Idaho, I would like to personally thank you for your support. I look forward to hearing from you again soon.

Kindly,



EMN1(SS) ANDREW M. LEONHARDT
PCU IDAHO (SSN 799)



U S S 799
IDAHO

Chaplin's Column

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

Recently I have been looking at Biblical promises. The times we live in are stressful, we are confronted daily with things that are promulgated as truth but that our mind says no to. Logical stances are attacked daily and we seem to have nowhere to turn to. I happened to be reading in the Old Testament one afternoon and I saw the verse from Isaiah.

Isaiah 40:31 But they that wait upon the LORD shall renew their strength; they shall mount up with wings as eagles; they shall run, and not be weary; and they shall walk, and not faint.

This scripture has great promises in it that we as believers only need to claim to be victorious. When we wait upon the Lord, stand on his words promises, and act on them, we shall see our strength {inner strength} renewed, we can go forth boldly and accomplish great things without getting weary and becoming faint in our believing.

John 10:10 is a great verse full of promise.

The thief cometh not, but for to steal, and to kill, and to destroy: I am come that they might have life, and that they might have *it* more abundantly.

The thief referenced is Satan and the speaker is Jesus. He clearly points out the difference in results and the promise is to live more abundantly. There are many people who do not live even abundantly. In future articles I will expand on some more promises.

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

February 13, 2021
American Legion Baden, PA & Zoom

Base Commander Huey Dietrich called the meeting to order.

Attendees: Eric Bookmiller, Lee Bookwalter, George Brown, Joe Campisi, Art Davis, Ed Derr, Huey Dietrich, Rick Elster, Lawton Gaines, Richard Geyer, Ron Goron, Bob Gourley, Lou Hamill, John Held, Ron Horton, Bill Lindsey, Bat Masterson, Vince Metz, Frank Nicotra, Brian Powers, Jeff Simon, Carl Stigers, Chad Underkoffler

Base Commander Huey Dietrich: Quote of the day: "Some people pay so much attention to hear their reputation that they lose their character."

Requin History: February 1, 1969, Requin was towed to Florida where she served as a Naval Reserve training ship. February 21, 1990 Senator John Hines introduced Senate Bill S2151 which allowed Requin to be transferred as an exhibit at the Carnegie Science Center in Pittsburgh PA.

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 BARBEL (SS 316) February 4, 1945

USS SHARK (SS 174) February 11, 1942

USS AMBERJACK (SS 219) February 16, 1943

USS GRAYBACK (SS 208) February 27, 1944

USS TROUT (SS 202) February 28, 1944

We also honor our departed shipmate of the Requin Base lost in February, Richard Claypoole, Chuck Dreer, John Mills, Devern Pyatt, James Ross, and Robert Vaughn. 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. Minutes of Executive Board meeting are available upon request. With no objections, the minutes were approved as published.

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

Other Reports:

Binnacle List: Lee Bookwalter, Jack Sutherin, James Kontier, Ted Underkoffler, Ron Horton

Eternal Patrol: None

Membership stands at 194. 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

All parades and ceremonies have been cancelled for the time being.

American Legion Stand Down, April 24th.

Old Business:

Base members attended memorial service for SS Dorchester on February 3rd.

Fund raising for USS Idaho support activities stands at \$6256.32 towards our goal of \$10,000.

New Business:

Letter of appreciation from USS Idaho was read and discussed.

For The Good Of The Order:

St. Patrick's Day parade has been cancelled.

An Executive Board meeting will be held to discuss conducting a joint web cast with Navy League.

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

Adjournment: The meeting was adjourned.

Next meeting: American Legion Houston PA at 1230 hours on March 13, 2021



We had the honor to attend the service for the Four Chaplains at the Baden American Legion Post 641 on February 3, 2020. The USSVI presented a painted lithograph of the Four Chaplains to the Post.

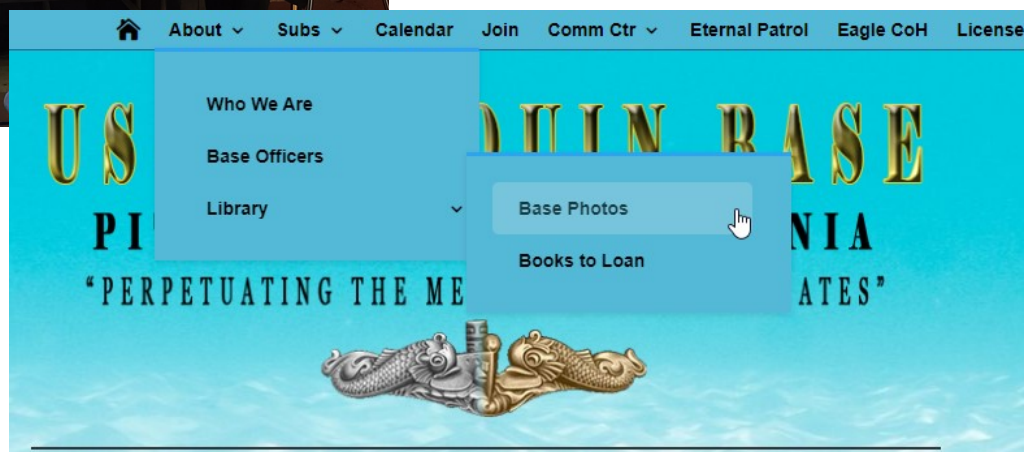


The photos for this event and other events we participate in are located in the base photo library.

The direct link is:

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

Or you can navigate to it from any page on our website.



Upcoming Events

Our next meeting will be at the Houston American Legion on March 13, 2021 @ 1230 hours
St. Patrick's Day parade has been cancelled.

An Executive Board meeting will be held to discuss conducting a joint web cast with Navy League.

Membership

Regular Members	181	Holland Club	89	USSVI Life Members	75
Associate Members	13	WWII	5	Base Life Members	50
Total Members	194				

02/01/1902

USS Plunger (SS-2), the lead ship of the Plunger-class submarine, launches. She is commissioned Sept. 19, 1903, at the Holland Company yard at New Suffolk, Long Island, N.Y. Ensign Chester W. Nimitz is the submarines final commander when Plunger is decommissioned Nov. 6, 1909 at the Charleston Navy Shipyard.

02/01/1944

Three US Navy submarines, Guardfish (SS 217), Hake (SS 256) and Seahorse (SS 304), attack Japanese convoys, sinking a destroyer, cargo ship and another vessel.

02/02/1942

USS Seadragon (SS 194) sinks Japanese army cargo ship Tamagawa Maru.

02/03/1944

USS Tambor (SS 198) attacks a Japanese convoy and sinks Goyu Maru and merchant tanker Ariake Maru about 200 miles southeast of Shanghai.

02/04/1942

While the battle for Bataan rages throughout the night, USS Trout (SS-202) loads 20 tons of gold bars and 18 tons of silver coins as ballast to replace the weight of ammunition they had just delivered to US and Philippine forces in Manila.

02/05/1944

USS Flasher (SS 249) sinks Japanese army cargo ship Taishin Maru off Mindoro. Also on this date, USS Narwhal (SS 167) lands 45 tons of ammunition and cargo to support Filipino guerrilla operations at Libertad, Panay, Philippines.

02/06/1945

U.S. Navy submarine USS Pampanito (SS 383) attacks a Japanese convoy and sinks merchant tanker Engen Maru about 200 miles northeast of Singapore. Also on this date, USS Spadefish (SS 411) sinks Japanese merchant passenger-cargo ship Shohei Maru off Port Arthur, Korea.

02/07/1943

USS Growler (SS 215) fights a desperate night battle with the Japanese supply ship Hayasaki, during which the boat's commanding officer, Lt. Cmdr. Howard W. Gilmore, rams the enemy ship, badly bending Growler's bow. Wounded by machine gun fire and unable to go below, Gilmore gives the order "Take her down!" sacrificing himself so his submarine could dive to safety. For his "distinguished gallantry and valor" on this occasion and earlier in the patrol, he is posthumously awarded the Medal of Honor and promoted one rank.

02/07/1945

USS Bergall (SS 320) attacks a Japanese convoy and sinks Coast Defense Vessel No. 53 off Cam Ranh Bay. USS Guavina (SS 362) attacks a Japanese convoy and sinks merchant tanker Taigyo Maru, off Saigon, French Indochina while USS Parche (SS 384) sinks Japanese army cargo ship Okinoyama Maru in Tokara Retto.

02/08/1942

A Japanese destroyer sinks after being torpedoed by Navy submarine S37 (SS 142) the day before off Makassar.

02/08/1943

USS Snook (SS 279) attacks a Japanese convoy off the west coast of Kyushu and sinks the transport Lima Maru and survives depth charges about 30 miles southeast of Goto Retto.

02/09/1960

USS Sargo (SSN 583) becomes the third submarine to surface through the ice at the North Pole.

02/10/1943

USS Pickerel (SS 177) sinks Japanese freighter Amari Maru off Sanriku.

02/10/1944

USS Pogy (SS 266) attacks a Japanese convoy and sinks destroyer Minekaze and freighter Malta Maru 85 miles north-northeast of Formosa.

02/10/1945

U.S. Navy submarine USS Batfish (SS 310) sinks three enemy submarines from Feb. 10-13.

02/11/1944

USS Gudgeon (SS 211) sinks Japanese freighter Satsuma Maru that was previously damaged by Chinese B-25s off Wenchow, China.

02/12/1945

USS Hawkbill (SS 366) sinks the small Japanese cargo vessel Kisaragi Maru and the two large boats she is towing, at Lombok Strait, N.E.I.

02/12/1947

The first launch of a guided missile, the Loon, takes place on board USS Cusk (SS 348).

02/13/1945

USS Sennet (SS 408) is damaged by gunfire of Japanese gunboat (No.8 Kotoshiro Maru or No.3 Showa Maru), east of Tanega Shima, but then Sennett sinks No.8 Kotoshiro Maru after it had been shelled by USS Lagarto (SS 371) and USS Haddock (SS 231). Haddock then sinks No.3 Showa Maru, which had already been shelled by Lagarto and Sennett.

02/14/1945

USS Gato (SS 212) sinks Japanese Coast Defense Vessel No.9 in the Yellow Sea and USS Hawkbill (SS 366) sinks Japanese auxiliary submarine chasers Cha 4 and Cha 114 in the Java Sea.

02/15/1943

USS Gato (SS 212) sinks Japanese stores ship Suruga Maru in Bougainville Strait and USS Pickerel (SS 177) attacks a Japanese convoy and sinks cargo vessel Tateyama Maru off the east coast of Honshu.

02/16/1944

USS Skate (SS 305) sinks the Japanese light cruiser Agano as she deploys from Truk, Caroline Islands.

02/20/1945

USS Pargo (SS 264) sinks Japanese destroyer Kokaze off Cape Varella, French Indochina and survives counter-attack by destroyer Kamikaze, which had been steaming in company with Nokaze during the attack.

02/21/1942

USS Triton (SS 201) sinks Japanese merchant cargo vessel Shokyu Maru in the East China Sea, 60 miles south of Quelpart Island.

02/22/1945

USS Becuna (SS 319) sinks Japanese merchant tanker Nichiyoku Maru off Cape Padaran Bay despite the presence of two escort vessels.

02/24/1945

USS Lagarto (SS 371) sinks Japanese submarine I 371 and freighter Tatsumomo Maru off Bungo Strait, Kyushu.

02/25/1944

USS Hoe (SS 258) attacks a Japanese convoy at the mouth of Davao Gulf, sinking the fleet tanker Nissho Maru and damaging the fleet tanker Kyokuto Maru, while USS Rasher (SS 269) sinks Japanese army cargo ship Ryusei Maru and freighter Tango Maru off the north coast of Bali.

02/27/1944

Three US Navy submarines sink three Japanese cargo ships: Grayback (SS 208) sinks Ceylon Maru in the East China Sea; Cod (SS 244) sinks Taisoku Maru west of Halmahera while Trout (SS 202) sinks Aki Maru.

02/27/1945

Submarine USS Scabbardfish (SS 397) sinks Japanese guardboat No. 6 Kikau Maru, 100 miles northeast of Keelung, Formosa, while USS Blenny (SS 324) attacks a Japanese convoy off French Indochina and sinks merchant tanker Amato Maru off Cape Padaran.

02/27/2017

The Los Angeles-class fast-attack submarine USS Albuquerque (SSN 706) is decommissioned after 33 years of service during a ceremony held at Keyport Undersea Museum.

02/28/1944

USS Balao (SS 285) and USS Sand Lance (SS 381) sink Japanese army cargo ship Akiura Maru, transport Shoho Maru about 90 miles northwest of Manokawari, New Guinea and transport Kaiko Maru just east of Musashi Wan, off Paramushir, Kurils.

02/29/1992

Fast Attack Submarine USS Jefferson City (SSN 759) is commissioned.

DECEMBER 1977 \$1.00

Popular Mechanics

25 decorations
you can make
in time for
Christmas



**DRIVE 1000 MILES PER
GALLON? THEY DID IT!**

**STEP-BY-STEP:
Add a motor
to your bicycle**

**17 KEEP-GOING WAYS
TO DRIVE IN SNOW**

**A master craftsman's
best jointer secrets**



**DARING
RESCUE BY SUB**

**How a 'nuke' crew saved five
fliers from a typhoon's fury!**

THE NEW TV GAMES

9 GREAT COMPACT RVs

Rescue from the heart of a typhoon

Crewmen of a downed bomber are saved from a raging sea in a daring feat by nuclear subs fighting 40-foot waves.

by Capt. Charles Barton,
USN (Ret.)

Capt. Leroy Johnson, pilot of Cobalt 2, a B-52G of the Strategic Air Command, taxied into takeoff position at Andersen Air Force Base, Guam. It was past 4:00 a.m., July 8, 1972. Two other planes in the flight already were airborne.

Airman Daniel Johansen, gunner and, at 21, the youngest member of the crew, felt the power surge, the runway bumps, then liftoff.

Lights dropped away in the pre-dawn darkness as the aircraft headed seaward above the surf that crashed against Guam's precipitous northeast coast. Crosswinds from local showers burbled over the cliff, tossing the plane, an indication of bad weather throughout the Western Pacific.

Three tropical storms were on or near their flight path. The nearest would grow into Typhoon Rita—a storm they'd come to remember.

As the bomber climbed through 20,000 feet, Johansen's headset came alive. "I've lost airspeed readings." It was the captain.

"It's out over here, too," replied his 25-year-old copilot, Lt. William Neely III. "Johansen, come forward and give us a hand."

The gunner unstrapped and went

With Typhoon Rita building up to a full-scale blow, the B-52G died at 30,500 feet. Six crewmen hit the silk to experience a night of horror.

DECEMBER 1977 73



'This rescue . . . the ultimate test of skill and courage . . .'

to the flight deck. The pilots looked worried. Johansen read out corrective actions from the manual. It called for more power. But even when this was applied, Cobalt 2 still dropped behind the other planes.

Capt. Johnson leveled at 30,500 feet, let the aircraft pick up speed in a short descent, and engaged the automatic pilot, with "altitude hold." A few minutes later the plane began to shake. Suddenly the autopilot disengaged and the nose pitched down. The rate-of-climb indicator pegged out at 6000 feet per minute *down*, and the altimeter began to unwind.

Crew must bail out

The pilots struggled for control. Johnson snapped orders. "Everyone to your seats."

Maj. Ronald Dvorak, 35, the electronics warfare officer, watched Johansen climb back in his gunner's seat. "Strap in!" he yelled at him.

The shaking increased violently, and the angle of the plane approached a dive. The gunner struggled to hook up for ejection. His throbbing head and pounding heart muffled the interphone. Then came the order:

"Everybody out! Bail out!"

Johansen armed his ejection seat and saw Dvorak eject. He pulled his own trigger and shot through the open hatch, somersaulting through space. The chute opened with a jolt. It looked small.

He was swinging wildly. The risers which attached the chute to him were twisted. He pulled them apart and his body spun as they unwound. Sharp snapping sounds came from the left, then the right. Fear jolted Johansen. He thought the risers were breaking! He grabbed frantically to keep from falling, but it was only the sound of tack lines breaking free. As he stopped spinning, the chute blossomed. He felt faint.

Aircraft ends in fiery crash

Now he lowered his survival kit on its retaining line so it dangled 10 or 15 feet below and helped dampen the swinging. He inflated his life preserver and looked around. Low in the night sky, he saw the running lights of their aircraft, then a brilliant flash as it struck the sea. The flare lighted the chutes of at least three other crew members below him. He tried to steer toward

Submarines are built to perform submerged; on any surface they wallow. In Typhoon Rita's 40-foot waves, they faced nearly insurmountable odds to save lives.





Chief torpedoman of the *Barb*, Jon Hentz, receives the Navy and Marine Corps Medal for heroism. He swam a line to survivors.

them without success. He blinked his flashlight, but no one responded. At the last moment he unsnapped the covers from the parachute canopy releases and crossed his arms through the risers to prevent falling from the chute prematurely. As he neared the raging sea, he could hear and see huge waves, their crests blown to spray on a stinging wind.

The moment his feet touched the water, he pulled the canopy release rings and plunged feet first beneath the surface. His chute blew free. He surfaced and swam to his raft which had automatically inflated. Once in it he lay back to calm himself. The luminous dial of his watch read 5:25. It would be daylight soon. He felt okay; nothing had broken, and he hadn't swallowed water. But the weather was getting worse.

Troubles plague chutists

Using his flashlight, he opened his survival kit and made several distress calls on the radio. He shot off one flare which made a brief mark in the dark predawn. Nothing happened. He put out a sea anchor and the raft rode better. Patches of plankton fluoresced as each wave broke.

Lt. Kent Dodson, 25, the navigator, was having trouble. The sight of their B-52 exploding in the dark had hypnotized him and delayed his preparation for water entry. Just as he reached for the release rings a strong gust yanked the chute. He hit the water swinging and a great, rolling wave tossed him into his shroud lines, which snared him like a fishnet. Time and again he slipped below the surface.

Luckily, Dodson was a strong

swimmer. Struggling for breath, he slashed line after line with his pocket knife and finally fought free. He climbed into his raft and lay panting for an hour, recovering. One line he'd cut was to his survival kit.

With daylight, the sea increased and the wind drove a stinging rain. Dodson could see rescue aircraft, but without signaling devices had no way of making contact. Eventually a C-97 buzzed him. He'd been spotted.

That night the waves, wind and rain built higher. Dodson fought to keep his raft from overturning. He was exhausted. "Good God," he thought, "Is this the end?"

Nuclear subs ordered out

On the morning of July 8, the nuclear fast-attack submarine USS *Barb* was in Guam's Apra Harbor completing repairs on a hydraulic pump prior to a six or seven-week Marianas patrol. News of Typhoon

Rita was no worry. The big sub would sail submerged and untroubled below the raging surface. That's what everyone thought.

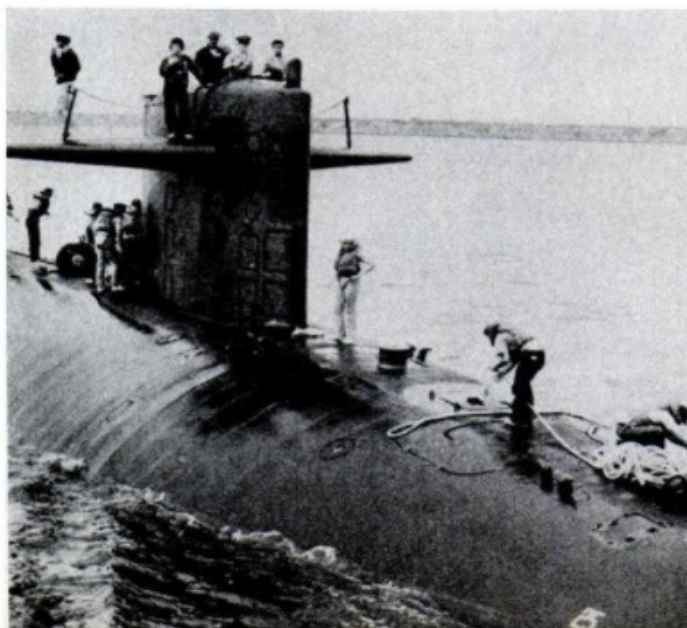
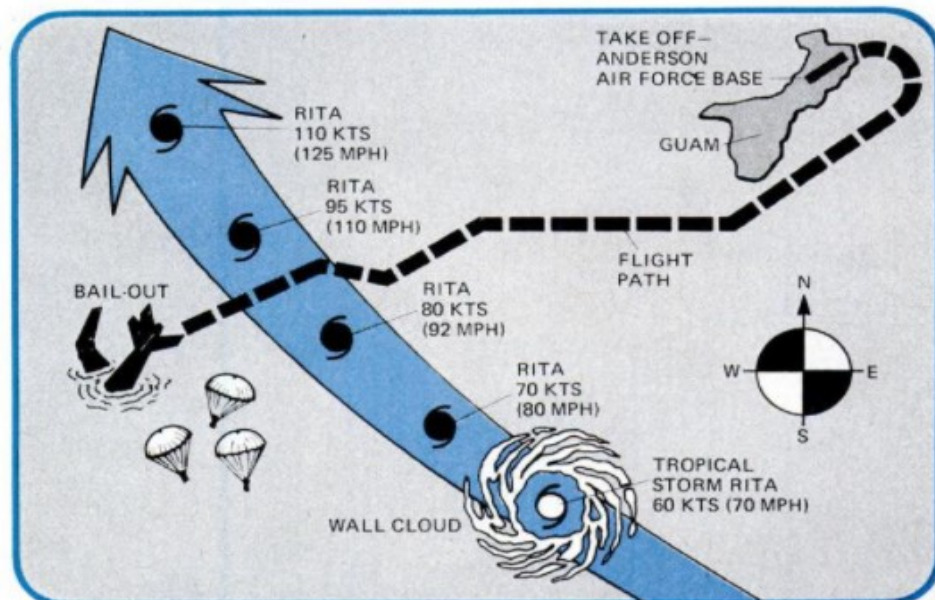
Instead, from the Joint Search and Rescue at Agana, orders were requested and issued to the *Barb's* skipper, Commander John Juergens: "B-52 down vicinity 12-07 north, 140-20 east . . . three of six crewmen sighted by rescue aircraft . . . Proceed best speed . . ." An hour later a similar "operational immediate" went to USS *Gurnard*, a sister sub inbound from Japan.

Within an hour the *Barb* slipped past Apra's harbor jetty, entered deep water and nosed under.

Lt. Cmdr. Mike Rushing, engineering officer who would be officer of the deck during the rescue attempt, had been up for 36 hours supervising the repairs. Now he slept.

Cruising submerged at flank speed,

(Please turn to page 158)



Path of Typhoon Rita and course of ailing B-52 (dotted line) are shown in map above. The plane went down directly in the path of oncoming storm, which grew as it swept past the survivors who had parachuted into the sea. At left is USS *Barb*, arriving in Apra Harbor, Guam. B-52 copilot Neely is on bridge, in flight suit.



RESCUE FROM A TYPHOON

(Continued from page 76)

all was smooth. An undercurrent of excitement permeated the ship. Chief Torpedoman Jon Hentz of Brunswick, Me., penned a quick letter to his wife: "We left Guam in a hurry, there are two tropical storms headed here and a B-52 crashed at sea 300 miles away . . ."

Nuclear submarines like *Barb* and *Gurnard* don't carry banks of batteries or great volumes of fuel, which occupy nearly half the hull space of conventional subs, and they're much larger—about as long as a football field and more than 31 feet in diameter. In the crew's mess of the *Barb*, 30 men can be fed at once, and in minutes the compartment converts to lounge or theater. It was here the crew gathered to discuss ways of rescuing the downed airmen.

Prospects not pleasant

The prospects were not pleasant. A submarine is designed to perform submerged, not on the surface. In any sea, her keelless cylindrical hull rolls and wallows like a sick whale. Further, when surfaced, a sub is "conned" from a three-by-four-foot cockpit bridge atop the "sail" which projects like a dorsal fin 15 feet above the center of the hull. It houses ladder and communications link between control room below and upper bridge, and also serves as a fairing for masts and antennas. The cockpit itself, separated from the ship by a watertight hatch, is open to the weather. There is no provision for getting down to the main deck from the cockpit, nor is access to the deck possible from deck hatches except in calm weather. Even small waves wash into open hatches.

In this operation there was a real risk that survivors pulled from the sea would be dashed to death against the hull. It was decided to bring them over the port sail plane, a winglike vane extending some 10 feet out from the sail. Though even at the tip they wouldn't quite clear the hull's bulge, it would be far less dangerous than working from the main deck. Finding the men in the storm-tossed sea would be less difficult. Military aircraft already were circling them. Sophisticated navigation and communications equipment would solve the rest.

That evening at 7:30 Lt. Cmdr. Rushing, refreshed by sleep, came on duty, stepping around a clutter of rescue equipment being readied. *Barb* was still submerged when the PA system clicked on: "This is the

(Please turn to page 160)

Copyrighted material

Copyrighted material

RESCUE FROM A TYPHOON

(Continued from page 158)

captain. Commander Submarine Squadron 15 reports five B-52 crewmen have been sighted by aircraft, but heavy weather has forced surface ships to turn back. *Barb* and *Gurnard* will handle the operation."

Juergens then instructed Rushing to come to periscope depth. As the ship rose above the 400-foot level, the men began to feel surface motion. At 200 feet Rushing noted the ship was rolling 10° each way. It was about 11 p.m. when *Barb* came to periscope depth, rolling and pitching violently. Lt. Cmdr. Jim Okeson could hear radio communications between the orbiting aircraft and Guam Search and Rescue Control. *Barb* was about 12 miles from the rafts.

Sub surfaces violently

By midnight the sub had closed the distance enough to surface. Suddenly she was sucked upward. Instead of a normal keel depth reading of about 26 feet, the reading dropped to 11. Instantly the ship heeled over on her beam. Men swore. Some ended against bulkheads or dangling from handholds. The ship hung for a moment, then went the other way. Rushing shouted course changes to the helmsman, looking for minimum roll. One heading took her nearly head on into the seas, which broke over bow and sail, forcing her beneath the surface. This would never do with men on the bridge.

Trial and error found a "best course," but it was still rugged. Men hung on as best they could. Some were sick. Never had *Barb* taken such a beating. Her single screw drummed air when it lifted clear. The impact of the stern and sail planes slamming back into the waves sent shudders through the hull.

"Let's go." Rushing and Torpedoman Steve Glasgow climbed the pitching bridge trunk. As Rushing opened the hatch to the cockpit, wind whistled and water slopped in. The men clambered through.

It was dark. Wind-driven rain and salt spray stung their faces. They careened to the four compass points as mountainous waves tossed the ship like a canoe riding rapids. They had to yell to be heard above the storm's roar. Their course toward the survivors was now with the seas. Though they were drenched by rain and spray, water boiled into the cockpit only occasionally. They tied themselves to the structure to keep from being swept overboard.

At 1:15 a.m. the rain stopped briefly and they saw a brilliant flare

about three miles ahead. Aircraft orbiting in the light radioed that eight rafts (some dropped from the planes) were visible. Even the empties were marked by lights. Lt. Lee Price, manning the periscope in control, was first to spot lights, and notified the bridge. Minutes later, in the flailing cockpit, Rushing could see three sets of lights bobbing up from behind giant waves. "Port 5°," he ordered, steering for the closest. Suddenly a red flare blossomed off port bow.

Survivor sighted

"Steer two-nine-zero," Rushing ordered. "Notify the captain we have a survivor in sight." He tried to put the *Barb* to the right of the raft, so they'd approach upwind. An orbiting aircraft dropped a flare revealing the full extent of the mountainous seas for the first time. Rushing wished he hadn't see it.

Capt. Juergens, Lt. Ron Ricci the *Barb*'s weapons officer, and Chief Hentz came crowding up into the cockpit. They could hardly move. Glasgow unstrapped and went below. Juergens tied himself in beside Rushing. Ricci and Hentz, equipped with life jackets and lines to keep from washing overboard, rigged a Jacob's ladder down the side of the sail to the safety track on the deck. Then they clambered down to the port sail plane.

Typhoon winds ripped the wave crests to shreds, blasting rain and spume in disorder. White water roiled over sail plane and bridge.

Rushing's approach to the raft put the wind-driven rain and spray at their backs, and the tossing raft came in sight some 10 yards off the port bow. As it passed amidships, Hentz aimed the throwing gun and fired. The line snaked out of sight in the darkness. He tried a weighted line, but the wind carried it off.

As the raft passed, Ricci yelled, "Hey! You okay?" and heard an affirmative yell. "We'll pick you up in a couple of minutes."

"Okay." The response whisked away on the wind and the distance widened. Rushing ordered engines to back down. As she slowed, *Barb* rolled 40°. A wave buried the bow and she began to go under. Ricci felt himself float off the sail plane, tethered to a submerging ship.

Hastily, Rushing ordered the helmsman back to his original course on forward speed. The ship sloughed off its load of water and rose again. Several attempts to turn brought seas over the sail and water cascad-

ing down the hatch. Finally, by scrambling below, securing the hatch, changing course, then returning to the bridge, they were able to find a better approach.

Wind blows raft away

The raft was now a mile distant. It was 2:20 a.m.

On the second run the wind blew the raft out of reach before they could fire a line. They tried the downwind side. The wind blew the weighted line back at them. On one try they fired a line right over another raft that hove in sight. There was no response. It appeared empty.

At 4:26 a.m. Juergens decided that further attempts in darkness would endanger both survivors and rescuers. Wet and exhausted, they clambered back down the trunk banging the hatch behind them. *Barb* submerged to wait for the dawn.

At 7:40, after a hot shower and soup, Rushing returned to the bridge. It was light, with heavy overcast and intermittent rain. The eye of Typhoon Rita had passed abeam. Though still rough, conditions had improved.

Aircraft still orbited the survivors. Using their radioed vectors, Rushing conned *Barb* toward a group of three rafts. As the distance closed, he made out two or three men sitting motionless in the nearest.

"Rescue team to the bridge!" he ordered. Ricci, Hentz and Gary Spaulding, an electronics technician, hauled themselves up through the hatch with their gear.

The plan was to shoot a line with a harness to each survivor. One by one, they'd be pulled through the water to the sail plane where Spaulding, a giant of a man, would lift them aboard and help to keep them from being battered as they were hoisted up the side of the sail. The harness line was fed down the bridge trunk to the control room where six men would provide the muscle to pull the survivors into the cockpit.

Rushing maneuvered the *Barb* to put the raft on her lee. The shifting wind blew the raft first one way then another. One minute the thing would ride a crest high above the submarine, then disappear in a trough under her bow the next.

Lines keep missing

At 20 yards, Hentz shot a line. It blew off on the gusting winds. A second attempt was better, but it whipped just before the men could grab it and drifted away. The raft

(Please turn to page 162)

RESCUE FROM A TYPHOON

(Continued from page 160)

drifted out of range. Hentz, a top scuba diver, offered to swim a line out.

"You don't have to," Juergens said.

"I want to," Hentz replied. He clipped the line to his belt, timed his jump to coincide with the crest of a wave, then swam like hell to clear the ship. Wave after wave swamped him. He was thrown violently about on the crest of larger waves as they exploded in the wind.

Finally, he reached the raft. There were three men in it—Lt. Neely, Maj. Dvorak and Lt. Dodson, who was exhausted. He had been lying down out of sight with his head pillowed on the lap of one of the others. Dvorak had broken his elbow during ejection and couldn't use that arm.

The next step was to get a heavier mooring line to the raft. Gary Spaulding hurled a weighted messenger line, but it fell short. Hentz swam out to recover it. The heavy mooring line was hauled out and secured to the raft. It was about 8:15.

Almost doesn't make it

Hentz was wrung out, but knew he'd be needed on the sub to help haul the survivors aboard. With

safety line secured around him, he started the long swim back. As he neared *Barb*, he saw the screw come completely out of the water. The next moment all he could see was the top of the sail. Several times he saw the forward flood ports—sea intakes close to the hull bottom. Some of the swells had to be 40 feet high.

By now Hentz was so exhausted he had doubts about making it, but with Spaulding pulling the line, he soon neared safety. Waiting for a big wave, he kicked upward as Spaulding tugged. The wave dropped him on the hull safety track three feet from the dangling Jacob's ladder. The next wave threw him against the side of the sail. He grabbed the ladder and willing hands helped him up. Trundled off to his quarters, he lay on the floor recovering his breath.

Topside, the crew moored the raft 25 yards off *Barb's* port quarter. Rushing's problem was to keep the raft downwind and the men clear of the screw, while preventing the sub from sliding into a trough where she would roll so violently the survivors might be endangered. It called for a remarkable feat of ship handling.

Lt. Dodson was the first brought aboard. A life jacket was sent out by messenger line, and the crew started

pulling him in. Dodson later recalled: "They pulled me to the conning tower and I hung there like a dead man, I was so tired. Then this big guy, the strongest man I had ever seen, pulled me over the edge of the conning tower." Dodson was lowered down the trunk into Control.

Two more brought in

Dvorak and Neely, being less tired, were brought in more easily.

By 10:00 a.m., the orbiting aircraft had vectored *Barb* to the next raft. With a single shot, Spaulding sent a messenger line over a lone survivor's head. The man grabbed it, pulled out the heavy line and the harness, buckled up and started swimming. The sub heeled over as the swimmer approached. Everybody heaved on the line and as the sub righted itself the survivor popped from the ocean like a penguin and landed on the sail plane. It was Airman Johansen. He had been in the water about 28 hours. The pickup had taken 13 minutes. *Barb* was getting good.

Meanwhile, the *Gurnard* was having problems. She had reached the scene after *Barb*. Any thoughts that Cmdr. Clyde Bell, the skipper, had of making a quick rescue were quick-

ly dispelled by the 70-mph wind. At one time the force of the seas tilted and shoved her to a depth of 150 feet before the crew could fight her back up.

Finally, Cmdr. Bell elected to withdraw so as not to interfere with *Barb* or endanger the survivors. But he stayed on the surface to maintain radio contact with the aircraft. He had been assigned the job of coordinating the rescue efforts.

At daybreak, spotter aircraft directed *Gurnard* to the aircraft commander's raft. Capt. Johnson, having ejected last, had become separated from the others. As the ship maneuvered to try for a pickup, wind and waves conspired to prevent more than one chance per approach to get a line out. When they pulled alongside, the raft blew one way and the submarine another. When they both drifted in the same direction, the raft moved faster and soon outranged the line gun.

Superb seamanship needed

Each attempt required superb seamanship, maneuvering to stay alongside as visibility closed periodically to 500 yards in drenching squalls, and the ship rolled 60° across the sky.

What made matters worse, *Gurnard's* sail was nearly twice as high as *Barb's*, rising some 35 feet above the waterline. A pulley-mounted hoist had to be rigged between bridge and trunk base, with a harness line feeding through to men in the control room.

At long last, using a heavier line, Chief Torpedoman W.A. Nielsen got a successful delivery right across the raft. Then Capt. Johnson grabbed it, hauled in the rescue line and donned the harness.

In the cockpit, Lt. Cmdr. Ed Morgan, officer of the deck, waited until the mast completed a dip toward the raft. Then he yelled the crucial command: "Heave!" In the control room, the crewmen slipped and scrambled on the tilting deck to keep the line coming in. Johnson was snatched from his raft and flew through the air. As the ship rolled upright, the line hoisted him over the top of the sail. Someone tackled his boots and dropped him to the cockpit.

Mission accomplished

Johnson's feet hit the deck. He looked at the makeshift rig and shook his head. Later he told how he had been thrown from his raft three times during the night. "I must

have bailed 15,000 gallons of water," he said.

The mission was accomplished. En route to Guam, Commissaryman Curt Avery of the *Barb* baked a cake in honor of Lt. Dodson's 26th birthday. The celebration was dampened by the absence of the B-52's radar navigator, Lt. Col. J.L. Vaughn. Aircraft had sighted his body floating face down, still tied to his life raft.

Air Force and Navy crews who maintained vigilant watch over the survivors day and night at dangerously low altitudes in the jaws of a typhoon had made the spectacular rescue possible. Admiral Bernard A. Cleary, Commander-in-Chief Pacific Fleet, put it well. "The coordination and teamwork were superb," he said. "I have never seen a more professionally executed operation in the face of so many difficulties." Adm. John S. McCain, Commander-in-Chief Pacific, radioed: "This rescue presented the ultimate test of professional skill and courage of the airmen and seamen involved."

Each ship was presented the Meritorious Unit Commendation, and 10 submariners who played perilous topside roles received individual commendations. It was, indeed, a job "well done."

PM

How the US Navy's nuclear-powered submarines have quietly dominated the seas for 67 years

Benjamin Brimelow

Fri, January 29, 2021, 9:09 AM

Business Insider



[USS Nautilus on August 12, 1958. Bob Haswell/Daily Express/Hulton Archive/Getty Images]

- Sixty-seven years ago, the US Navy launched the world's first nuclear-powered submarine, USS Nautilus, which went on to break multiple speed, depth, and travel distance records.
- The US Navy has operated no less than 19 classes of nuclear-powered submarines since Nautilus' introduction — here's how they've evolved over six decades.

January 22 was the 67th anniversary of the launch of the **USS Nautilus**, the world's first nuclear-powered submarine.

Launched in 1954, Nautilus broke multiple speed, depth, and travel distance records, with a radical new design that marked the arrival of the nuclear age.

Nuclear-powered submarines have a number of advantages over their diesel-electric counterparts.

They can stay submerged at deep depths indefinitely, can sail at maximum speeds for longer, and can operate for years without refueling. (Modern diesel-electric subs running on batteries can be quieter than older nuclear-powered boats, however.)

Moreover, nuclear-powered subs' ability to carry submarine-launched ballistic missiles (SLMBs) make them one of the most threatening weapons in service.

The US Navy has operated no less than 19 classes of nuclear-powered submarines since Nautilus' introduction.

Nuclear-powered attack submarines



[US Navy submarine USS Nautilus hits the Thames River at Groton, Connecticut, during its official launch, January 21, 1954. AP Photo/stf]

Nautilus was designed as an attack submarine, designated SSN.

Displacing 4,092 tons, Nautilus was 323 feet long, 27 feet wide, and armed with six torpedo tubes. It was capable of sailing at over 20 knots on and below the surface and of diving to 700 feet.

Nautilus was the first vessel to reach the geographic North Pole, and the first submarine to make the entire journey submerged - fully opening the Arctic as a theater of warfare for submarines.

Though an attack submarine, it was also an experimental vessel, which was one reason it was the only ship of its class and saw no major action. This was also the case for its successor, **USS Seawolf**, though Seawolf did tap on Soviet underwater communication lines during **Operation Ivy Bells**.



[US Navy submarine USS Seawolf, bottom, Japan destroyer JS Oonami, left, and US Navy aircraft carrier USS John C. Stennis after an undersea warfare exercise in the Pacific, February 12, 2009. US Navy/PO3 Walter Wayman]

Seawolf and Nautilus were followed by 11 classes of SSNs, each with unique features.

The six boats of the Skipjack class were the first with a teardrop hull, which all future submarines had, and the Permit class were the first SSNs armed with nuclear anti-submarine missiles.

The largest SSN classes were the Permit class (14 subs), Sturgeon class (37 subs), and the Los Angeles

class (62 subs).

These classes went through extensive modifications and upgrades that enabled them to conduct both anti-ship and anti-submarine warfare missions with dozens of torpedoes and missiles.

Some were also modified to assist in intelligence gathering and special-operations missions, receiving electronic equipment and dry deck shelters for deploying Navy SEALs.

Nuclear ballistic-missile submarines



[USS Halibut firing a Regulus missile next to USS Lexington, March 25, 1960. US Navy]

Seven years after the launch of Nautilus, the US Navy adopted the UGM-27 Polaris SLBM, once again changing submarine warfare and presenting a new nuclear threat to the world.

Nuclear-powered ballistic-missile submarines, designated SSBNs, can launch nuclear missiles while underwater. This, combined with nuclear reactors that allow them to remain submerged almost anywhere on earth for extended periods, make them a massive threat.

The Navy's first missile submarines were five subs built or refitted between 1953 and 1960 that could launch Regulus nuclear-capable cruise missiles from their decks, but

they had to surface to do so, and only one, the USS Halibut, was nuclear-powered.

The Regulus subs were seen as a stepping stone to the SSBN, of which the Navy has operated six classes.



[US Navy ballistic-missile submarine USS Woodrow Wilson in San Francisco Bay, January 3, 1964. US Navy]

The George Washington and Ethan Allen classes had five boats, while the Lafayette class had nine. The James Madison, Benjamin Franklin, and Ohio classes had 10, 12, and 18 respectively.

The first five classes were part of the "41 for Freedom" program, an effort to get at least 41 SSBNs into service as fast as possible. Those vessels were commissioned between 1959 and 1967,

each carrying at least 16 missiles.

USS Ethan Allen is the only SSBN to have launched a live nuclear missile, which it did in the Frigate Bird test during Operation Dominic in 1962.

In 1972, the SALT I Treaty limited the number of SLBM launchers to 656. The SALT II Treaty further limited new SSBN capability, and as a result some SSBNs were modified and reclassified as SSNs to allow for the construction of Ohio-class missile submarines.

Ohio class



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

Ohio-class submarines are the largest in US history. Each displaces 18,750 tons submerged and measures 560 feet long and 42 feet wide. They are also the most heavily armed, with four torpedo tubes and 24 Trident II D-5 SLBMs.

In 2002, the US began converting four Ohio-class boats into cruise missile submarines, designated SSGNs. SSGNs can't carry SLBMs and are instead armed with up to 154 Tomahawk land-attack cruise missiles.

Ohio-class subs can also carry 66 special-operations troops and dry deck shelters to deploy them and SEAL Delivery Vehicles without surfacing. Recent reporting suggests that the SSGNs could be armed with hypersonic weapons as soon as 2025.

Ohio-class subs are currently the only SSBNs in service with the US Navy, making them the entirety of the submarine component of the US's nuclear triad.

Virginia class and Columbia class - the future fleet



[USS Virginia after its first voyage in open sea, called "alpha" sea trials, July 30, 2004. US Navy]

The end of the Cold War and declining budgets forced the cancellation of the remaining planned Ohio-class SSBNs and the remaining Seawolf-class SSNs. But the Navy intends to replace them with Columbia-class and Virginia-class subs, respectively.

The Virginia-class attack sub displaces 7,900 tons submerged. It measures 377 feet long, is 34 feet wide, and is armed with four torpedo tubes. It also has 12 vertical launching systems capable of firing Tomahawks or Harpoon anti-ship missiles, allowing it to fill in for Ohio-class SSGNs when they retire.

There are currently 19 Virginia-class boats in service, with nine more under construction and two on order. In addition to a new suite of electronics and weapons, future Virginia-class subs may be fitted with lasers. (The Navy is also looking into sub-launched drones.)

In April 2018, USS John Warner became the first Virginia-class boat to engage in combat when it fired six Tomahawk missiles at Syrian government targets in retaliation for an earlier chemical weapons attack.



[An artist's rendering of the future Columbia-class ballistic missile submarine. US Navy / DVIDS]

Columbia-class subs will have a submerged displacement of 20,815 tons and measure 560 feet long and 43 feet wide. This will make them slightly larger than the Ohio class and thus the largest submarines in US history. Their armament will be 16 Trident II D-5 SLBMs.

The Navy placed a \$9.4 billion order for the first two Columbia-class boats in November. All 12 planned Columbia-class boats are expected to be completed by 2042, while at least 46 Virginia-class boats are expected to be completed by 2043.

The Navy submarine force is set to shrink in the coming decades, and there have been delays on the latest ver-

sion of the Virginia class and on the Columbia class, which now faces tight timelines.

Those challenges have raised doubts about how the service and industry will balance construction of both classes in the years ahead.

Day To Day Breakdown Of The Coronavirus Infection

by [The Outdoor Wear Team](#) January 20, 2021

As the corona virus infection rate appears not to be slowing down, doctors are observing a few patterns as it relates to how the common symptoms of the virus progress as each day passes. More than forty percent of the cases of COVID-19 are asymptomatic, according to the Centers for Disease Control and Prevention. It further stated that only approximately twenty percent of cases get to the stage of critical or severe.

For persons that display signs, the symptoms are normally a cough and a fever that are the first to arrive. Following close behind would be a sore throat, muscle aches, and pains, nausea, headaches, and diarrhea, although if the case is severe enough, issues with the gastrointestinal tract usually manifest much earlier during the course of the infection. Severe infections also tend to develop one of the trademarks for the coronavirus, namely, breathing difficulties, this occurs within five days following the initial symptoms first appeared.

However, the symptoms do not typically appear immediately after the individual has been infected. The average period for incubation of the virus is between four to five days, as stated by the Centers for Disease Control and Prevention. Within this incubation period, an infected person would not realize that they are sick, however, they will still be able to transmit the virus to others during this time. As stated, prior, during the observation of the millions of cases, doctors have been able to identify a pattern of symptoms for the coronavirus patients:

Day One: Symptoms are mild, to begin with; infected individuals normally experience a fever followed closely by a cough and feeling tired. A few of the persons infected with the virus may have had nausea or diarrhea a couple of days prior to the fever and cough, when this happens it is usually a sign that the infection could be more severe.

Day Two: The tired feeling and the fever would persist during this time, as well as the cough, usually a dry cough.

Day Three: On average, this is the length of time it took infected persons to be admitted to the hospitals after the first display of symptoms. A study that was conducted on over five hundred hospitals discovered that patients that were hospitalized displayed signs of pneumonia on this day during their illness.

Day Five: Difficulty in breathing normally commences around day five, as symptoms begin to get worse, particularly in more severe cases and especially if the infected person has a preexisting health condition or elderly.

Day Six: Fever, cough, and difficulty breathing continue during this day. Some of the infected persons reported having feelings of tightening of the chest or described it as a feeling that a band was around their chest.

Day Seven: Persons that exhibited persistent chest pressure or pain, shortness of breath, and lips and face appeared to have a bluish color, were admitted to the hospitals. Others that were infected but had less severe symptoms normally saw an improvement with their symptoms.

Day Eight: According to the Centers for Disease Control and Prevention, most infected individuals experience shortness of breath and pneumonia. Approximately fifteen percent of persons diagnosed with COVID-19 will at some point develop symptoms of ARDS or Acute Respiratory Distress Syndrome, a medical condition that is said to be the buildup of fluid in the small, elastic air sacs in the lungs, known as the alveoli. This buildup of fluid limits the amount of air that the lungs can carry, resulting in a reduced amount of oxygen being transported through the bloodstream, depriving the rest of the body, including the vital organs of

receiving the all-important oxygen they require to function efficiently, this illness that could require the patient being intubated. Acute Respiratory Distress Syndrome is often fatal.

Day Nine: On this day, patients at this stage could develop sepsis, which is an infection that is caused by an immune system response that is quite aggressive. Sepsis is a potentially life-threatening condition that occurs when the body's response to an infection damages its own tissues. When the infection-fighting processes turn on the body, they cause organs to function poorly and abnormally. Sepsis may progress to septic shock. This is a dramatic drop in blood pressure that can lead to severe organ problems and death.

Day Ten: It is on this day that infected persons see symptoms beginning to worsen, like difficulty breathing getting more severe. At this stage of the virus infection, persons are highly likely to be admitted to the Intensive Care Unit or ICU. As compared to the milder cases of the infection, these patients tend to have a reduction in appetite and but an increase in abdominal pain.

Day Twelve: For some patients, they do not develop Acute Respiratory Distress Syndrome until almost two weeks into the infection. A study actually revealed that on average it took some patients twelve days to be admitted to the Intensive Care Unit. For some, their fever subsided during this time, but the cough normally remained.

Day Thirteen & Fourteen: For individuals that would survive the virus, the issues with breathing would generally subside during this time.

Day Sixteen: Usually on this day patients would normally get relief from the cough.

Day Seventeen to Twenty-One: During this period, persons either recovered from the virus and got discharged from the hospitals or they passed away just after about three weeks of contracting the virus.

Day Twenty-Seven: There are some persons that required a longer stay in the hospitals, on average twenty-seven days was the length of stay for infected persons.