



Our Creed: To perpetuate the memory of our shipmates who gave their lives in the pursuit of their duties while serving their country. That their dedication, deeds and supreme sacrifice be a constant source of motivation toward greater accomplishments. Pledge loyalty and patriotism to the United States of America and its Constitution.

The Dolphin Brotherhood

The Bi-Monthly Newsletter of the Seattle USSVI Base

Meeting Recap

Here is a short recap of the most recent base meetings. You can read the minutes of each meeting on the Seattle Base website: <http://www.ussvi.org/base/Seattle.asp> and blog. A copy of the previous meeting minutes is also available to read before each meeting.

July Meeting

At the July meeting we had a quick recap of the Kirkland Independence Day Parade (see pages 4 and 5) and talked about plans for the August Tolling the Boats Ceremony. We also got the final report for the Smokey Point Rest Stop event and, after expenses, we had \$411.57 in donations. BZ to everyone involved with the event.

Steve Lewis, President of the Thresher Chapter of the Silent Service Motorcycle Club (SSMC) was on hand to share news with us about the Thresher Chapter winning the SSMC Community Award.

We received a letter from the Meydenbauer Yacht Club letting us know that we would be unable to hold our Holiday Luncheon at the club this year. Dick Gonzales is looking for a new venue for our annual holiday gathering. We will let you

know more as we learn more.

The July program was a talk by DeFord Cochrane. DeFord served in the surface Navy for 24 years. He started off by talking about his family's past. His father was on the battleship Nevada during the attack on Pearl Harbor and stayed in the Navy until 1968, retiring as a Chief. DeFord was the first of seven sons that went on to serve in the U.S. Military. He talked about his joining Navy ROTC at the University of Washington and his time with the surface Navy. He shared stories about all the good and bad leaders he served under in the Navy and talked about the lessons he learned. He has 8 children, 7 of which also serve in the U.S. military.

August Meeting

No meeting was planned for August due to Tolling Ceremony. You can read about the he Tolling Ceremony and see some photos on pages 6 and 7.

The monthly meetings are always a good chance to catch up with shipmates and share a few sea stories. We hope to see you at the next meeting.

Commander's Corner

By Al Smith, Base Commander



Hello there to all of you SubVets and Associate members,

Have you all enjoyed the warm weather? I'm glad that it's cooled down.

We had a great time at the Tolling the Boats ceremony in Kirkland. The weather was great. Kami McGrath provided the music and singing. Steve Shelton and Al Smith were the Masters of Ceremony, with Ric Hedman reading a poem. We had our WWII veterans and their wives, along with other SubVet widows at the ceremony. Additionally, the VFW Post 2995 Honor Guard, a sharp group if there ever was one, supplied the Colors, gun salute, and Taps for us. Karl Krompholz, Keith

Watson, and Lois Mezek, to name just a few, made the Tolling of Boats a great outing. My thanks to all of you that made this event work out so well. There was a lot of interest in our group from other people in the park and some even joined us for the ceremony and stayed after to thank us for service.

U.S. Submarine Force Losses

September - October Losses

Remembering our lost shipmates; thank you for your service and sacrifice.

September

USS S-5 (SS-110) lost on 1-Sept-1920 when it foundered off Delaware Capes. All the crew escaped through a hole cut in hull in the tiller room.

USS Grayling (SS-209) lost on 9-Sept-1943, with the loss of 76 crew, when it was sunk in or near Tablas Strait, PI.

USS Pompano (SS-181) lost between 17-Sept and 5-Oct-1943 with the loss of 77 men while on her 7th war patrol. Possibly lost on 17-Sept-1943 to an air/sea attack. The exact cause of her loss remains unknown, but she probably was sunk by the air/sea attack or fell victim to a mine.

USS S-51 (SS-162) lost on 25-Sept-1925, with the loss of 33 crew, when it was sunk after collision with *SS City of Rome* off Block Island.

USS Cisco (SS-290) lost on 28-Sept-1943, with the loss of 76 crew, when it was sunk in Sulu Sea west of Mindinao.

October

USS Seawolf (SS-197) lost on 3-Oct-1944, with the loss of 102 crew, when it was sunk just north of Morotai, between PI and Indonesia, by *USS Rowell*.

USS S-44 (SS-155) lost on 7-Oct-1943, with the loss of 56 crew (2 men were taken prisoner, both survived the war), when it was sunk off Paramushiru, Kuriles.

USS Wahoo (SS-238) lost on 11-Oct-1943, with the loss of 80 crew, when it was sunk in or near La Perouse Strait.

USS Dorado (SS-248) lost on 12-Oct-1943, with the loss of 77 crew, when it was sunk in Western Atlantic, possibly near Cuba.

USS Escolar (SS-294) lost on or after 17-Oct-1944, with the loss of 82 crew, on her first war patrol most likely to a mine somewhere in the Yellow Sea.

USS Shark (SS-314) lost on 24-Oct-1944, with the loss of 87 crew, when it was sunk in channel midway between Hainan and Bashi Channel.

"Lost Boats" continued from previous column

USS Darter (SS-227) lost on 24-Oct-1944 when it became grounded on Bombay Shoal off Palawan then was destroyed. All crew were rescued by *USS Dace*.

USS Tang (SS-306) lost on 25-Oct-1944, with the loss of 83 crew (9 men were taken prisoner and survived the war), when it was sunk in north end of Formosa Strait in vicinity of Turnabout Island.

USS O-5 (SS-66) lost on 29-Oct-1923, with the loss of 3 crew, when it was sunk after collision with *SS Ababgarez (United Fruit)* off Panama Canal.

"Commander's Corner" continued from page 1

Our next meeting, on September 20, will be in the large room down below at the VFW post and we will have a speaker. We would like to see some new blood here and to see some of the old blood return to the meetings. We have not seen many of you in a very long time. So, please come join us, we would like to see you again and hear your stories.

Voting for Seattle Base is coming up soon and we are going to need some new Base Officers. Please think about where you can be a service to the base.

I hope you all have some great days and that we will see at the next meeting.

Take Care,

Al Smith
Seattle Base Commander

Calendar Recycling

As the months get fewer on your 2017 submarine calendar, you might be wondering what to do with this and any other old submarine calendars. How about turning them back in for recycling?

Karl 'Dutch' Krompholz has asked that members bring any old submarine calendars to him at future meetings. He will recycle the old calendar pictures for other purposes, such as giving away to kids and veterans.

So think about bringing your old calendars to the next meeting and give them a new life.



Reminder: Online Exchange Shopping for Veterans

In March we posted a story about the Department of Defense (DoD) planning to open online shopping at the exchanges to veterans.

The Navy Exchange has posted more information about the Veteran Online Shopping Benefit (VOSB) on their website. The benefits start on November 11, 2017, but you need to register before you can use the benefit.

You can check your eligibility through a website called VetVerify.org. You will need to provide your name, date of birth, SSN last four, the last branch you served in, and an email contact. To use the website, your records must have been digitized by the DoD. If your records have not been digitized or you don't want to register online, you can call 1-844-868-8672 to get information on what you need to do.

Be sure to check the information and Frequently Asked Questions on the Navy Exchange site. If you have questions that aren't covered on the site, you can contact the Navy Exchange program at email: VOSB@nexweb.org or phone 888-343-8672.

USSVI Charitable Fund - Hurricane Harvey Relief Fund

The USSVI Charitable Fund is establishing a special Brotherhood Fund USSVI members that has suffered damage from Hurricane Harvey. Currently, we do not know how many of our members have sustained damage from the hurricane and subsequent flooding, but we are pretty sure that there will be more than we want to see.

All bases and individuals are asked to give serious consideration to contributing money to this fund to help our fellow shipmates.

Once all the elements of the fund are set up in the Brotherhood Fund, The Charitable Fund President will send out an e-mail letting us know how to contribute.

Seattle Base Float Storage

We are looking for a new location to store the Seattle Base float between events. The current garage is being sold by the owner, so we must leave the space.

If you know of a potential storage location, please contact the any of the Seattle Base officers. We are open to any ideas on this.

If we don't find storage, we may need to look at giving up the float!

Getting your Dolphin Brotherhood

Seattle Base offers a several ways to get your copy of The Dolphin Brotherhood newsletter: by mail, by download the PDF version from the Seattle Base website or blog, and as a PDF attachment to an email.

Because of the costs for printing and mailing, we want to encourage our members to try out one of the PDF versions.

You can download a full-color PDF of the most recent newsletter at the [Seattle Base website](#) or [Seattle Base blog](#), just go to the page and look for the newsletter link.

If you would like to get a full-color, PDF version of the newsletter by email, just send a message to the email address: seabase_editor@yahoo.com with the subject "Subscribe" and please include your name in the message. Alternatively, you can just speak with me (Dave Schueler) at a base meeting or event. Once I get your request, I will add your name to the email list and send you a copy of the newsletter as an email attachment. The newsletter is usually 700 – 1,000 kb in size and shouldn't provide any trouble for most email systems.

Email is a great option for those of you who do not need a hardcopy of the newsletter, but don't want to download a copy from the website.



Join the USSVI the Boat Sponsorship Program

Your contribution to Boat Sponsorship Program (BSP) pays to send three copies of each issue of American Submariner magazine for the subscription year to the command, boat, or other place where news of the Silent Service is welcomed. The cost is \$30 per year or a total of 12 magazines (three each of the four annual volumes). The subscriptions may be made in the name of a Base or an individual.

The Program Manager is Victor Van Horn (vmjvanhorn@aol.com). Questions on the program may be addressed to him.

Each sponsor will receive the special BSP patch the first time they sponsor. Additionally, all sponsors will be entered in the quarterly USSVI Boat Giveaway contest, a \$500 value (one entry per sponsorship).

2017 Kirkland Independence Day Parade

Once again the city of Kirkland did a nice job with the parade and all the festivities for celebrating Independence Day. The weather could not have been better for the 2017 Kirkland Independence Day Parade. It was sunny and warm, but not too hot, in the morning and during the parade.

As usual, veterans were presented with a boutonniere and we had some pizza before the parade. We had a good turnout from the submarine veterans and Silent Service Motorcycle Club (SSMC). The parade route was lined with a large and enthusiastic crowd.

We all had a great time at the parade. We're looking forward to next year's parade and hope to see a few more members there.

Here are a few photos from the parade. You can see more photos at the [Seattle Base Blog entry](#) for the parade.



Our annual photo with all veterans that attended the parade on the steps of Kirkland's Heritage Hall



Seattle Base and SSMC members before the parade



Pierre signing in before the parade



Kerry Ryan and Ric Hedman with one banner



Jim Harper towing the Seattle Base float



Earl Greening and Bill Giese with the USSVI banner



The SSMC followed the marchers and float



A closer view of the Seattle Base float with most of the SubVets

2017 Seattle Base Tolling the Boats Ceremony

Seattle USSVI Base held our annual Tolling the Boats ceremony on August 19, 2017 at the Kirkland Marina Park Pavilion. It turned out to be a clear and warm day, just perfect for the outdoor ceremony.

The Tolling the Boats Ceremony is a memorial service to honor our lost submarine brothers who made the supreme sacrifice while performing their duties with valor, integrity, and courage. This ceremony is a fundamental part our creed as members of U.S. Submarine Veterans, "To perpetuate the memory of our shipmates who gave their lives in pursuit of their duties while serving their country."

This year we had a few light refreshments (snacks and cake) and a little social time before the ceremony.

The Honor Guard from VFW Post 2995 was on hand to 'Present the Colors' and provide other honors for the ceremony. Seattle Base Commander Al Smith and past-Base Commander Steve Shelton acted as joint Masters of Ceremony for the event.

Steve and past-Base Commander Ric Hedman read the names of the lost boats, while "Chief of the Boat" and World War II veteran Ralph Sterley rang the bell.

When the reading was complete, Ralph laid the memorial wreath to honor all the lost submariners and the VFW Honor Guard provided a gun salute and played Taps.

Thanks to all that attended. Special thanks to Lois Mezek and all those who helped this year's Tolling the Boats ceremony a success.

Here are a few photos from the event. You can see more at the [Seattle Base Blog entry](#) for the ceremony.



A few people passing-by stopped off to ask questions about the ceremony



World War II veterans seated at the front



One of the pre-ceremony cakes



Opening remarks by Seattle Base Cdr Al Smith



Steve Shelton explains the purpose of the Tolling the Boats ceremony



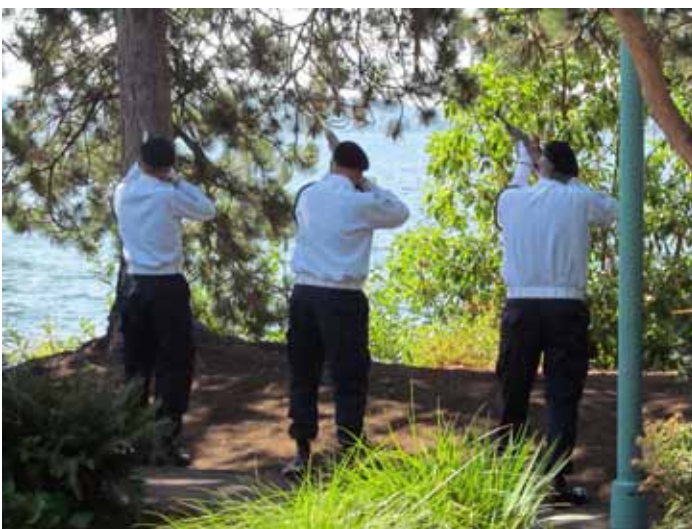
Steve Shelton and Ric Hedman read the names of the lost boats



Ralph Sterley rings the bell for the lost boats and crews



Ralph Sterley and Lois Mezek place the memorial wreath



VFW Honor Guard rifle salute



VFW Honor Guard plays Taps

7-year-old Made Honorary Submariner

Abby Petersen, Rapid City Journal

Chelsey Chapeau found a good deed in her daughter's craft box last fall. It came in the form of a letter to the Spearfish family from Wiley Cress, a member of the United States Submarine Veterans, who had read an article in 2014 about Chapeau's son, Grayson. Inspired by Grayson's battle with an inoperable brain tumor, Cress wanted to make him an honorary submariner.

Two years after the letter arrived, got misplaced and then discovered, Chapeau responded and asked if the now 7-year-old Grayson could still get a certificate. Cress said yes.

"They're amazing men and we appreciate all they've done for us as a nation and all that they've done for us as a family," Chapeau said of Polaris Base, the Black Hills sector of the United States Submarine Veterans.

On May 20 in Rapid City, Grayson became an honorary submariner. Cress and about nine USSV members presented him with a certificate, a cap and a photo.

Kaps(SS) 4 Kid(SS), a branch of USSV, works "to bring comfort and joy to children with challenging medical conditions anywhere they are being treated," according to Cress. Doing a ceremony for Grayson was just that.

"He is just full of energy, optimism, just a neat kid. If you're with him for just a few minutes, you're just amazed," Cress said.

Chapeau published a children's book in June inspired by her son's journey called "You Are Brave." She says things like the ceremony are the "little push" Grayson needs to keep going.

"Grayson has inspired us as his parents. Has inspired his siblings. Has inspired his school," Chapeau said.



Grayson Chapeau stands next to the crew of the United States Submarine Veterans on May 20 after being awarded a certificate as an honorary submariner.

USS Alaska Earns Trophy for Best Ballistic Missile Submarine

LT Joe Painter, Commander, Submarine Group Ten

The deputy commander of U.S. Strategic Command presented the Omaha Trophy for Best Ballistic Missile Submarine to *USS Alaska* (SSBN 732) at Naval Submarine Base Kings Bay, Aug. 3.

Vice Adm. Charles "Chas" Richard presented the trophy to the crew of *Alaska* and praised them for their hard work and dedication.

"You have all worked incredibly hard to bring this trophy back to the *Alaska* for the fifth time," said Richard.

Alaska conducted three strategic deterrent patrols for a total of 270 days at sea in 2016, including the longest continuous alert period of any unit from Kings Bay in the last four years.

"You and your families should be proud of this," said Richard. "You provide an invaluable asset to the U.S.'s strategic forces and provide peace to the American people."

Alaska competed against the Navy's 13 other *Ohio*-class SSBNs to earn the 2016 Omaha Trophy. The Navy's ballistic missile submarines, often referred to as "boomers," serve as an undetectable launch platform for intercontinental missiles. They are designed specifically for stealth and the precise delivery of nuclear warheads.

The Omaha Trophy was created in 1971 by the citizens of Omaha through the Strategic Air Command's Consultation Committee and Cast by Tiffany and Company of New York City. STRATCOM awards the Omaha Trophy annually to U.S. military units who demonstrate the highest standards of performance in five official categories: Global Operations, Intercontinental Ballistic Missile, Strategic Aircraft Operations, Ballistic Missile Submarine and Strategic Bomber Operations.

In addition to the 2016 Omaha Trophy award, *USS Alaska* also earned the 2016 Battle Efficiency, or Battle "E," award for the best command in Submarine Squadron 20.

Commissioned in 1986, *USS Alaska* is the fourth Navy ship to be named for the Territory or State of Alaska.



Omaha Trophy presented to *Alaska's* crew

Passing Dolphins

SUBLANT Public Affairs, Navy.mil

The Dolphins

I wait patiently in a dimly lit ball room as crowds gathered around tables are called to stand. The few lights that offer illumination seem to gather on me as a camera flash suspends the proceeding moments in time.

My chin is held high with pride. My eyes are affixed without blinking and the greeting waves around me stop in motion. Those in attendance cheer as I receive my recognition, honoring a Navy tradition practiced by countless submariners before. The glint of gold light spills off of me as I take my place center stage.

I embody a level of professionalism and knowledge to which only those in the submarine force know the extent of. I know the full might of the submarine as a weapon, from its bow to its stern, and the damage control actions necessary to save her when called to. My crew mates instantly recognize me at a glance, as well as the captain, knowing that they can trust me with the safe operation of the boat.

I didn't know the name of the man joining me on the stage until it was called out, but for him to be here, I know he has been tested, tried and found worthy. I am present in recognition of this achievement. He is qualified.

I am the dolphins of the United States submarine force and have been pinned countless times since my inception was cast into silver and gold 93 years ago.

The Submariner

The significance of this ceremony was not lost on Lt. j.g. Jeremy Brown, as he stood at attention while the commander of the submarine forces pressed the golden pins into the breast of his uniform. The son of a submariner, Brown knew he would need to call his father first to tell him the news.

"It was a great honor," said Brown. "As soon as I could, I told my dad about it and he wanted the pictures. He got the opportunity to embarrass me a little bit. They recently held the *USS Ray* reunion, which is one of his submarines, and they came aboard and toured *John Warner*. So I talked to his old submarine buddies and they brought it up and talked about it. So it's just been humbling."

Brown enlisted in the Navy in 2004 and earned his enlisted submarine warfare "Dolphins" pin prior to being selected for the STA-21 program and attending the University of South Carolina. He now serves as the assistant operations officer aboard *USS John Warner* (SSN 785) and has earned a special set of the gold dolphins.



Lt j.g. Brown and his new gold Dolphins

"The silver enlisted dolphins and the gold submarine dolphins are a little bit different," said Brown. "Enlisted dolphins mean that you can save your shipmates and the officer dolphins mean that you can fight the ship in times of war. They both have a lot of significance to me. I wouldn't compare one to the other, but I am very proud of both."

"For those future qualified officers who find themselves standing in front of the submarine community during the birthday ball, please enjoy it, appreciate what it means, and share the memory," imparted Brown.

"It was a great honor, but also very humbling," said Brown. "It gives a personal connection to *USS Thresher*. Every submariner knows how significant the loss of the *Thresher* was and how it changed how we operate and think about submarine safety, so just being able to wear the captain's dolphins make it personal and that much more important to me.

The Legacy

When *USS Thresher* (SSN 593) sank below the surface for the final time in April 1963, the commanding officer, Lt. Cmdr. John "Wes" Harvey was wearing one of his two sets of dolphins. The other was left behind with his wife, Irene.

Six years later, Irene Harvey decided to pass those dolphins on to her niece's husband, Ted Hack, when he graduated from submarine school. Ted Hack, who retired as a captain in 1997, would pass the dolphins on at the *Thresher* 50th anniversary ceremony held in remembrance of the boats sinking. They were then passed to Lt. Chris Miller, the most recently qualified submariner at the 2013 Submarine Birthday Ball in Washington, D.C., with the condition they be passed on to the newest qualified submarine officer every year after. This year they were passed to Lt. j.g. Jeremy Brown.

The *Thresher* Dolphins, as they have become known, rest with the newest submarine officer, carrying on the mission of protecting our undersea domain, the mission that Lt. Cmdr. Harvey began 54 years ago.

Base News and Information Page

Mark the Date

We are working on a new calendar for 2017 Seattle Base events and will get the information out soon. Here are a few items we know about. More dates will be posted as events are announced.

Sept 4: Black Diamond Labor Day parade

Sept 1 - 6: USSVI Convention, Orlando FL.

Nov 11: Auburn Veterans Day parade, Auburn Veterans Day Ceremony, Tahoma

Dec 2: Seattle Base Holiday Luncheon

Contact the Newsletter Editor for more information on these events. Be sure to check the 2017 Base Events Calendar on the Seattle Base blog for more items.

Birthday Wishes

Here is a list of Seattle Base member birthdays for September and October. Be sure to wish them a 'Happy Birthday and many returns' the next time you see them, offer to buy them a drink, and see if they remember what year they were born.

| | |
|-----------------|---------|
| Mike Bennett | Sept 4 |
| Garry Lynn | Sept 7 |
| William Hoeller | Sept 11 |
| B.K. Uptagrafft | Sept 12 |
| Bill Thompson | Sept 15 |
| Russel Readell | Sept 29 |
| Robert Stapp | Oct 1 |
| Jim Durham | Oct 3 |
| Art Thompson | Oct 4 |
| Don Gentry | Oct 10 |
| Patti Lynn | Oct 12 |
| Gary Flynn | Oct 18 |
| Toby Warson | Oct 18 |
| Don Smith | Oct 22 |
| Chris LeBlanc | Oct 23 |
| Cliff Nutter | Oct 23 |
| Earl Greening | Oct 25 |
| John Soth | Oct 29 |

2016-2017 Seattle Base Officers & Chairs

| | | |
|---------------------|------------------------|--------------|
| Commander: | Al Smith | 253-631-5010 |
| Sr. Vice Commander: | Karl 'Dutch' Krompholz | 253-631-5736 |
| Jr. Vice Commander: | OPEN | |
| Secretary: | Bill Giese | 425-335-5990 |
| Treasurer: | Jim Harper | 425-357-6485 |
| Membership Chair: | Pat Householder | 425-392-0440 |
| Base Chaplain: | Andrea Geisler | 425-702-2121 |
| Chief of the Boat: | Ralph Sterley | 360-568-4420 |
| Storekeeper: | Ralph Sterley | 360-568-4420 |
| Webmaster: | Steve Shelton | 206-526-1130 |
| Newsletter Editor: | Dave Schueler | 206-243-6784 |

Upcoming Meetings

September

20 September, General Meeting

October

18 October, General Meeting

Meetings are held at the Lake Washington VFW Post 2995, 4330 148th Ave Redmond WA 98052. The meetings start at 7:00 PM with social time in the lounge and meeting room before the meeting.

Newsletter Notes

A full-color version of the current Seattle Base newsletter is available on the Base website (www.ussvi.org/base/Seattle.asp).

Remember, if you do not need a hardcopy of the newsletter mailed to you or if you just prefer reading the newsletter online or receiving a copy by email, please let me know. You would be helping out the base by reducing the cost of printing and mailing the newsletter.

Also, remember to check the Seattle Base blog (<http://sealebase.blogspot.com/>) for event updates and new articles.

Finally, if you have any comments, good or bad, about the newsletter or if you have an article you would like to contribute, please feel free to talk with me about it. My mailing address is the return address for the newsletter or you can call me at: (206) 243-6784, or email at: daveshoe@aol.com

On the Internet

Seattle Base Website: www.ussvi.org/base/Seattle.asp
 USSVI National Website: www.ussvi.org
 Ric Hedman's Website: www.pigboats.com
 Don Gentry's BBS: www.bottomgun.com/bbs2/
 Ron Martini's BBS: <http://rontinisubmarinebbs.com/>

Dave Schueler, Newsletter Editor

Why U.S. Stopped Building One of Best Subs Ever Made

Kyle Mizokami, Scout

The *Seawolf*-class submarines were envisioned as the best submarines ever built. Designed to succeed the *Los Angeles*-class attack submarines and maintain America's edge in the underwater domain, the class suffered from cost overruns and the collapse of the Soviet Union. While still some of the best submarines ever built, they were built at reduced numbers.

In the late 1980s, the U.S. Navy was faced with a crisis. In 1980, the Soviet Union had received information from the Walker family spy ring that the Navy could track its submarines through excessive propeller noise. As a result, the Soviet Union went looking for advanced Western machinery to make better propellers. In 1981, the Japanese company Toshiba sold propeller milling machinery to the Soviet Union via the Norwegian Kongsberg Corporation.

By the mid-1980s, the Soviet Union's new machinery began to make itself felt. The new *Akula*-class submarines had a "steep drop in broadband acoustic noise profiles". One government source told the *Los Angeles Times*, "the submarines started to get silent only after the Toshiba stuff went in." On top of running silent, the *Akula*-class could dive to depths of up to two thousand feet — while the U.S. Navy's frontline submarines, the *Los Angeles* class, could not dive that deep.

To combat the threat of the *Akula* class, the U.S. Navy responded with the *Seawolf* class of nuclear attack submarines. The *Seawolf* submarines were designed with HY-100 steel alloy hulls two inches thick, the better to withstand the pressures of deep diving. HY-100 steel is roughly 20 percent stronger than the HY-80 used in the *Los Angeles* class. As a result, the submarines are capable of diving to depths of up to two thousand feet, and crush depth estimates run from 2,400 to 3,000 feet.

At 353 feet, *Seawolf* subs were designed to be slightly shorter than their predecessors, by just seven feet, but with a twenty percent wider beam, making them forty feet wide. This width made them substantially heavier than the subs before them, topping the scales at 12,158 tons submerged.

The *Seawolf* submarines are each powered by one Westinghouse S6W nuclear reactor, driving two steam turbines. The class was the first class of American submarine to utilize pump-jet propulsors over propellers, a feature that has carried over to the newest *Virginia* class. As a result, a *Seawolf*

is capable of eighteen knots on the surface, a maximum speed of 35 knots underwater, and a silent running speed of about 20 knots.

The *Seawolf* class is equipped with the BQQ 5D sonar system, which features a twenty-four-foot-diameter bow-mounted spherical active and passive array as well as wide-aperture passive flank arrays. The submarines are being refitted with TB-29A thin-line towed array sonar systems. Rounding out sonar systems is the BQS 24, for detection of close-range objects such as mines.

The submarines were designed to be true hunters, and as a result have eight torpedo tubes, double the number of earlier submarines. It has stores for up a combination of up to fifty Mark 48 heavyweight torpedoes, Harpoon antiship missiles, and Tomahawk missiles. Alternatively, it can substitute some of this ordnance for mines.

The resulting submarine is, according to the U.S. Navy, ten times quieter over the full range of operating speeds than the Improved *Los Angeles* submarines, and an astonishing seventy times quieter than the original *Los Angeles*-class submarines. It can run quiet at twice the speed of previous boats.

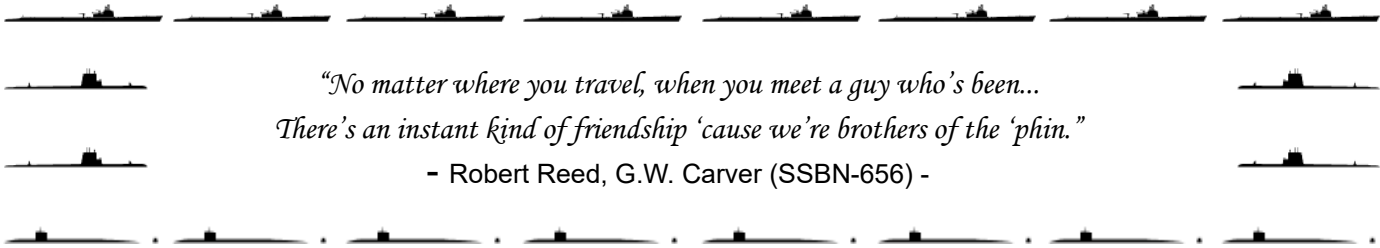
This formidable increase in performance came at formidable increase in cost. The total *Seawolf* program was estimated at \$33 billion for twelve submarines, an unacceptable cost considering the Soviet Union ended in 1991. The program was trimmed to just three submarines that cost \$7.3 billion.

The extreme quietness of the *Seawolf* class gave the Navy the idea of modifying the last submarine, *USS Jimmy Carter*, to support clandestine operations. An extra one hundred feet was added to the hull, a section known as the Multi-Mission Platform (MMP). The MMP gives *Carter* the ability to send and recover Remotely Operated Vehicles/Unmanned Underwater Vehicles and SEALs and diving teams while submerged. *Carter* also features auxiliary maneuvering devices fore and aft for precise maneuvering in situations such as undersea cable tapping and other acts of espionage.

The *Seawolf*-class submarines are outstanding submarines, but the Cold War mindset at the time of development accepted high performance and consequently high costs to meet a high-level threat. The post-Cold War *Virginia* class forced the Navy to rein in costs while still producing a progressively better submarine. While unsuccessful as a class, the tiny *Seawolf* fleet is still a very useful part of the U.S. Navy submarine force, giving it capabilities not even the *Virginia* class can match.

USSVI Seattle Base Newsletter
 c/o Dave Schueler
 10631 31st Ave SW
 Seattle, WA 98146

To:



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The memorial wreath from the Seattle Base Tolling the Boats Ceremony. See pages 6 and 7 for more.