



"To Honor Those Who Serve, Past, Present & Future"

February 2017

Volume 18, Issue 2

**Lest We Forget —
"The USSVI Submariner's 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.

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News Brief

1. **Next Meeting:** At 1100, third Saturday of each month at the Knollwood Sportsman's Club. Mark your calendars for these upcoming dates:
 - a. FEBRUARY 18
 - b. MARCH 18
 - c. APRIL 15
2. Duty Cook Roster:
 - a. FEBRUARY – MAURICE YOUNG
 - b. MARCH –ED DOWLING
 - c. APRIL -- SEE YOUR NAME HERE!
3. **February Birthdays:** Donald Robbins 4th; Leon Lemma 6th; Eric Hansknecht 11th; Larry Heckelsmiller 12th; Steve Benicke 12th; and Scott Jaklin 17th. Happy Birthday, Shipmates!
4. Get ready for two exciting meetings. Shipmate John Lindstedt will deliver his top-notch presentation on **Hyman Rickover** at our February and April meetings. The Admiral was an irascible scientist, engineer, innovator, entrepreneur, strategist, and visionary. He committed to 'quality' before Deming. Trust me, you will want to be there.
5. **SubFest** Sneak Peek – see article on Page 6.
6. The electronic version of the latest issue of the "**American Submariner**" magazine is now available through the USSVI.org website. See Page 6.

Crash Dive Meeting Minutes January 21, 2017

1. Attendees:
 - a. Clay Hill
 - b. Greg Miller
 - c. Ed Dowling
 - d. Ray Ratliff
 - e. Larry Warnke
 - f. Herman Mueller
 - g. Glenn Barts, Sr.
 - h. Chris Gaines
 - i. Gus Yakes
 - j. Ted Rotzoll
 - k. Cris Pascual
 - l. Maurice Young
 - m. Bret Zacher
 - n. Frank Voznak, Jr.
2. Meeting was called to order by Clay Hill at 1110 followed by the Pledge of Allegiance, invocation, and a round of introductions.
3. Secretary's Report was given by Chris Gaines. Ed Dowling moved to accept; Bret Zacher seconded; vote was unanimous.
4. Treasurer's Report given by Glenn Barts. Budget for 2017 was presented:
 - a. 2017 Budget Income Projection \$1,750
 - i. Lunch \$600
 - ii. Base Dues \$500
 - iii. National Dues \$350
 - iv. Donations/Other \$300
 - v. Events \$0
 - vi. Storekeeper \$0
 - b. 2017 Budget Expense Projection: \$1,750
 - i. National Dues \$350
 - ii. Lunch \$400
 - iii. Donations/Charitable Fund \$500
 - iv. Donations/Other \$200
 - v. Postage/Supplies \$300
- c. Account balances: Savings \$1,173.69; Checking \$3,587.64; Sub Memorial Checking \$70,567.79, Savings \$5.00 and held by national \$41,290.00.
- d. Other 2016 Charitable: \$100 Knollwood; Wounded Warriors \$100; Honor Flight \$100; AZ sub memorial \$150.
- e. Larry Warnke moved to accept; Tom Polzin seconded; vote was unanimous.
5. Committee Reports
 - a. Newsletter – Posted on Webpage.
 - b. Membership – Still pursuing dues for 2017.
 - c. Charitable Service –
 - i. Planning a trip to O'Hare USO.
 - ii. Greg Miller moved to fund \$500 for 2017 Charitable Service; Bret Zacher seconded, vote was unanimous.
 - iii. Shipmate in Charleston Base needs financial help; Greg moved to fund \$100 from 2017 Charitable Service fund; Larry Warnke seconded; During discussion, Chris Gaines suggested amending the motion to fund this separately from the 2017 Charitable Service budget; Maurice Young seconded; vote was unanimous to add the \$100 as a separate expense.
 - d. Community Outreach –
 - i. Cobia working party upcoming.
 - ii. For the memorial, have a table at the Kane County Gun Show on February 12; have sufficient volunteers.

- iii. Ted Rotzoll suggested adding more winter shows to our schedule (gun, boat, outdoor, camping, etc.).
 - iv. Ted will get info on Chauncey Saturday Radio Show to find out if we are eligible to participate.
 - e. Hospitality – January 28, 2017 is the Annual Wild Game Event. Food is well worth it. Tickets are \$15 from Larry Warnke. KSC elections are pending. Club is very busy with groups this spring. Crash Dive is on the calendar for the year.
 - f. Webmaster – Check periodically.
 - g. Storekeeper – No news.
 - h. Procedures – No news.
 - i. Eagle Scout – Ted had a good presentation on December 18. Another presentation on March 5. Discussed ways to expedite creating certificates.
 - j. Memorial –
 - i. February 12, 2017 Kane Sports Show 0730-1330; there are plenty of volunteers.
 - ii. Finalizing plans to sell pavers; full size \$500 and half-size for \$250.
 - iii. Designing a handout piece suitable for use on our Web page as well.
 - iv. Design can accommodate about 300 large pavers.
 - v. Evaluating more candlelight bowls.
6. Old (Unfinished) Business
- a. Not discussed.
7. New Business
- a. Holland Club - Chris Gaines moved to support \$1 per shipmate; Bret Zacher seconded. Vote was unanimous.
- b. Donations must be made to USSVICF for a tax letter.
- c. Election:
- i. Base commander; Ted Rotzoll moved to close nominations; Bret Zacher seconded. Clay Hill was elected by acclamation.
 - ii. Treasurer; Larry Warnke moved to close nominations; Ed Dowling seconded; Glenn Barts is elected by acclamation.
8. Good of the Order item:
- a. Thanks to all who contributed to another very tasty chili dump (Rotzoll, Barts, Hill, Miller, and Gaines).
 - b. Duty Cook
 - i. February – Maurice Young.
 - ii. March – Ed Dowling
 - iii. April – SEE YOUR NAME HERE!
 - c. Frank Voznak opened a discussion that we broaden our election process to include absentees. It may generate more interest.
 - d. Frank noted a future discussion item to improve communication among base members. Objective is to have more timely contact.
 - e. Next Meeting is February 18, 2017 at KSC.
9. Adjourn – Glenn Barts moved to adjourn; Chris Gaines seconded; vote was unanimous. Adjourned at 1325.

Lost Boats

USS Barbel (SS-316)	2/4/45
USS Shark I (SS-174)	2/11/42
USS Amberjack (SS-219)	2/16/43
USS Grayback (SS-208)	2/27/44
USS Trout (SS-202)	2/29/44

The
Economist

Torpedo junction

A new Russian weapon may give it an underwater advantage

The principle of supercavitation continues to intrigue torpedo designers

Jan 21st 2017



WHEN introduced 40 years ago, the Soviet Shkval ("Squall") torpedo was hailed as an "aircraft-carrier killer" because its speed, more than 370kph (200 knots), was four times that of any American rival. The claim was premature. Problems with its design meant Shkval turned out to be less threatening than hoped (or, from a NATO point of view, less dangerous than feared), even though it is still made and deployed. But supercavitation, the principle upon which its speed depends, has continued to intrigue torpedo designers. Now, noises coming out of the Soviet Union's

successor, Russia, are leading some in the West to worry that the country's engineers have cracked it.

Bubbles of vapour (ie, cavities) form in water wherever there is low pressure, such as on the trailing edges of propeller blades. For engineers, this is usually a problem. In the case of propellers, the cavities erode the blades' substance. Shkval's designers, however, sought, by amplifying the phenomenon, to make use of it. They gave their weapon a blunt nose fitted with a flat disc (pictured above) that creates a circular trailing edge as the torpedo moves forward. They also gave it a rocket motor to accelerate it to a speed fast enough for that edge to create a cavity consisting of a single, giant bubble which envelopes the entire torpedo except for the steering fins.

The result is that most of the torpedo experiences no hydrodynamic drag, greatly enhancing its potential velocity. To take advantage of this it is propelled, when the booster rocket runs out of oomph, by a hydrojet—a motor fuelled by a material, such as magnesium, that will burn in water.

Shkval's problems are threefold. First, it has a short range—around 15km compared with around 50km for America's principal submarine-launched torpedo, the Mk 48. Second, the hydrojet is noisy, so opponents can hear the weapon coming. Third, it cannot track its target. Most torpedoes use sonar

to home in on the ship they are intended to sink. Because Shkval travels inside a bubble, any sonar needs to be mounted on the cavitation disc, which is too small for the purpose. In addition, returning sonar pings would be drowned out by the hydrojet's noise. As a consequence, Shkval's only guidance is an autopilot which steers it towards the place where its target was located at the moment of launch, in the hope that the target has not moved.

These deficiencies have not stopped Western countries trying to build supercavitating torpedoes of their own. Diehl, a German firm, announced a programme for such a weapon, Barracuda, in 2004. In 2006 General Dynamics, a big American firm, was commissioned to look into the matter (though its brief did not include the word "torpedo", referring only to an "undersea transport") by the country's Defence Advanced Research Projects Agency.

The firms' engineers tried to overcome the guidance problem by developing a new type of cavitator. Rather than a flat disc, General Dynamics' design had a curved surface, increasing the area available for sonar reception. In addition the sonar's transmitters, mounted on the torpedo's steering fins, were separate from the receiver, and the interference caused by engine noise was reduced by special filters. In the end, though, these efforts ran into the sand. Barracuda was never completed. General Dynamics' project was shelved after a year.

American naval research into supercavitation in general ended in 2012, though which particular problems proved insurmountable has never been revealed.

Russia, though, has not given up on the idea. In October 2016 plans emerged for a new supercavitating torpedo, Khishchnik ("Predator"). Few details have been released, except that the work is being carried out by Elektropribor, a design bureau specialising in high-precision systems for submarines. Combining a General Dynamics-style sonar with a better motor could, however, result in a weapon that the world's navies would truly have to fear.

Such a motor is possible, according to Georgiy Savchenko of the Institute of Hydromechanics at Ukraine's National Academy of Sciences. His supercavitation-research group estimates that with the right fuel (perhaps lithium, which packs more energy per kilogram than magnesium) a new torpedo could have ten times the range of Shkval. It would still be noisy, but, added to its speed, such a combination of range and tracking ability would make it hard to evade. Moreover, there is no theoretical reason why Khishchnik should not travel quite a lot faster than Shkval does. In laboratory tests, supercavitating projectiles have clocked more than 5,000kph.

Kanyon diablo

The supercavitating design being developed for Khishchnik might also feed into the Kanyon project, a giant nuclear-powered torpedo

with a nuclear warhead that is intended to attack coastal targets. In what was either a deliberate leak or a piece of disinformation, this project was revealed to the world in 2015 during a televised meeting between Vladimir Putin, Russia's president, and senior officers of the country's armed forces. The camera, looking over one of these officers' shoulders, gave a picture of plans for the putative device, annotated with helpful information such as "speed of travel—185kph".

The leaked design did not appear to use supercavitation—but if Kanyon is genuine, then thoughts of adding it cannot have escaped its designers. Even if Kanyon is smoke and mirrors, though, Khishchnik seems real enough. Perhaps, this time, aircraft-carrier skippers should be worried.

American Submariner News

Shipmates,

The electronic version of the latest issue of the "American Submariner" magazine is now available through the USSVI.org website.

Log onto the USSVI.org website with your member signon and get to the Home Page'.

On the 'Home Page' click on the second bright blue button along the left edge near the middle of the page to bring up the 'American Submariner' webpage.

On the 'American Submariner' web page click on the top red button on the left edge of the page to bring up the current (new)issue of the magazine.

To make it easier to work with the magazine is broken into two sections and near the top of the current issue web page, in the center of the page there are links to each of the two sections.

Clicking on either of these two links will open a new browser tab to display the Adobe (.pdf) version of that half of the magazine.

You can also bring up any back issue (back through 2005) of the "American Submariner" for review by using the buttons along the left edge of the 'American Submariner' web page.

If you are still getting a hard copy the "American Submariner" magazine through the mail and are willing to forego it to see the electronic version of the magazine only, thus saving our organization the postage fee, please e-mail the National Office ASOptOut@ussvi.org

Al Singleman, Jr. IPNC

Cobia Working Parties

Submitted by: Ken Tupman, USS Chicago Base Commander

The Board of Directors have had ongoing discussions on various subjects for the base as part of our BOD meeting in February.

One of these discussions was about getting more interest in working on the Cobia in Manitowoc Wisconsin.

There are two types of work that is performed.

One is the scheduled working party for three days where the work is mainly cleaning and painting. This is usually in the winter around March when the museum is closed. The participants can sleep on the boat or the museum and usually arrive on Sunday evening and go home on Wednesday morning. The guy in charge of this activity is Greg

Miller of Crash Dive Base and our USS Chicago Base Contact is Steve Benicke.

The other type of working party is technical in nature like getting diesels to run or fix a particular component, etc. This is normally under the guidance of Pat Habel, Lenny helps and anybody else he can get to help. Pat has an email list of about 25 guys that he mails out to when he plans to go down to the boat. If you think you might be interested in this type of work email Pat and he will put you on his list. Pat Habel email patsubb25@aol.com.

Thank you, Kommander Ken

Electric Boat Says It Can Meet Navy Goal for Adding Subs

Jennifer Mcdermott, Associated Press, January 10

Submarine builder Electric Boat would be able to meet the expectations of an ambitious U.S. Navy shipbuilding plan, given the time and resources, company president Jeffrey Geiger said Monday.

The Navy released a 355-ship proposal last month that calls for adding 47 ships, including 18 attack submarines. That's five more ships than Republican President-elect Donald Trump proposed while on the campaign trail.

It would be the biggest shipbuilding boom since the end of the Cold War.

Geiger spoke to government and business leaders Monday for the company's annual update and said the Navy has been asking him for several weeks whether Electric Boat could still build two attack

submarines a year, or even three, when a new class of ballistic-missile submarines is under construction.

He told an Associated Press reporter afterward that the company would be able to meet the Navy's expectations but would have to expand its workforce, supplier base and facilities.

"I'm excited about the potential opportunity, and very pleased that the Virginia-class submarine is as vital to the Navy mission as it is, that it could represent that kind of an increase in the fleet," Geiger said.

The General Dynamics Corp. subsidiary builds two Virginia-class attack submarines with Newport News Shipbuilding in Virginia annually.

Electric Boat also is designing the ballistic-missile submarines. Construction on those ships isn't expected to begin any sooner than the fall of 2020. Once construction begins, the production of attack submarines will typically be one a year.

Geiger said that if Congress supports the Navy's proposal, it would take a significant expansion in the number of companies that supply submarine parts and continued investment in workforce training programs.

About 3,000 submarine suppliers operate in 47 states. A new program at the Community College of Rhode Island began Monday with its first class of Electric Boat trainees.

The Navy currently has 274 deployable battle force ships, far short of its old goal of 308 ships.

Boosting shipbuilding to meet the Navy's proposed goal could require an additional \$5 billion to \$5.5 billion in annual spending in the Navy's 30-year projection, according to an estimate by the Congressional Research Service.

Rep. Joe Courtney said the Navy needs the additional ships, but it will be challenging to pay for such a "big jump" and ships would have to be procured and built more efficiently. The Democratic congressman's district includes Electric Boat.

"I think it's going to go up, I really do," he said. "Whether you can get that high, it's a very daunting task."

Fifteen attack submarines are currently under contract, including 11 under construction.

Electric Boat employs about 14,500 people, mainly in Connecticut and Rhode Island. Employment is currently projected to grow to 18,000 by 2030, with 2,000 new hires this year to increase the headcount and account for attrition.

The company had more than \$5 billion in sales in 2016.

No Torpedoes for India's Second Scorpene Submarine

Vivek Raghuvanshi, Defense News, January 12

NEW DELHI — India has launched the second French Scorpene-class submarine, but the Khanderi will not be equipped with torpedoes because the \$200 million tender to buy them remains undecided by the Ministry of Defense (MoD) since it was created five years ago.

The MoD has put on hold the acquisition of 98 Black Shark heavyweight torpedoes, to be mounted on Scorpene submarines from WASS, a subsidiary of Italian firm Leonardo.

Plans to procure Black Shark torpedoes for the Indian Navy from WASS was canceled in May, an MoD spokesman confirmed with Defense News last year. The decision came in the wake of corruption charges involving another subsidiary of Leonardo, AgustaWestland and the Indian National Congress political party.

With the Khanderi's launch on Thursday, the sub is set to undergo rigorous trials until the end of the year. When the trials are over, the sub will be commissioned into the Indian Navy as INS Khanderi, an Indian Navy official explained.

The MoD expects the sub to be delivered to the Navy by mid-2017.

"The force strength of submarines is very low at this point. The reason for this situation is the closure of Shisumar (German HDW) class project and delay in the Scorpene project. The existing submarines are less than 25 years old. With this background, launch of the second submarine at [state-owned Mazagon Dock Limited] MDL is of great importance," retired Indian Navy Captain Shyam Kumar Singh offered.

However, Anil Jai Singh, a retired Indian Navy commodore and defense analyst, believes there is still room for improvement in India's submarine industry. "Submarine construction in India will truly come of age when we are able to design and build our own

submarines. The first two Scorpene submarines have been built in India to complete specifications provided by DCNS France. In this case, most of the submarine is imported with some indigenous content," he said.

The Khanderi is part of six Scorpene-class submarines being built by MDL under a \$3.5 billion contract signed in 2004 between India and DCNS of France.

The Scorpene-building program is behind by more than three years and its cost has escalated by more than \$1 billion. The first of the six Scorpene-class subs, Kalvari, is at sea but is yet to be officially inducted, the Indian Navy official noted.

The program's delay has been attributed by MoD officials to low-level absorption of complex technology during its early years, augmentation of MDL infrastructure and procurement of MDL-purchased material.

An Australian newspaper on Aug. 24, 2016, reported that thousands of pages of presumably secret submarine

documents were on the loose. The news threatened the operational security of India's new Scorpene-class submarines, prompting India's MoD to decide against mounting French air-independent propulsion systems on the last of the two Scorpene subs, leaving the possibility of additional orders remote.

"Considering the time frame of first submarine to be commissioned by 2018 and optimistically one every year, the current program will go on till 2023. Placement of further orders with old specifications may not be prudent at this stage," Singh said.

The strength of the Indian Navy's submarines has dwindled from a total of 21 submarines in the 1980s to 13 conventional submarines plus one homemade Arihant-class nuclear submarine and one Russian Akula-class submarine operating on lease. China, in comparison, has a strength of 65 subs, which "is a matter concern," the Indian Navy official said.

Crash Dive Base Contact Information

Commander – Clayton Hill, 195 Clover Lane, Cedarburg, WI 53012; 262-377-5332 (work number) or bisi@ameritech.net

Vice-Commander – Greg Miller, 964 Fischer Drive, Addison, IL; (630)543-7855 or fourkats4me@yahoo.com

Secretary (POC) – Chris Gaines, 513 West Downer Place, Aurora, IL 60506; 630-892-5718 or ccgaines@mindspring.com

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COB – Larry Warnke, l_warnke@msn.com

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APPLICATION FOR MEMBERSHIP

Regular Life Associate

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 & its Constitution."

With my signature below I affirm that I subscribe to the Creed of the United States Submarine Veterans, Inc., and agree to abide by the Constitution, all Bylaws, Regulations and Procedures governing the U.S. Submarine Veterans, Inc., so long as they do not conflict with my military or civil obligations. I will furnish proof of my eligibility for Regular membership, including my discharge under honorable conditions, and proof of my U.S. Navy (SS) Designation, if required by the Base or the national Membership Chairman. If I am not discharged, the discharge requirement is waived. If I am not U.S. N. submarine qualified, I am applying as an Associate and my sponsor is indicated below.

- I certify that I was designated qualified in USN Submarines aboard _____ in _____ (Yr)
(Honorary designations regardless of source do not apply under any circumstances.)
- I certify that I received a discharge under Honorable Conditions (if not currently in military service) in _____ (Yr)

Name: (Print /Type) _____ **Address:** _____

City: _____ **State:** _____ **Zip Code:** _____ - _____ **Tel:** (____) _____ - _____

Signature: _____ **Date:** ____/____/____

Your E-Mail Address _____ **Base/Chapter Desired:** _____

The Member Dues year runs from Jan 1st thru Dec 31st. Please indicate your term preference: _____
 Nat'l Dues: 5 Yr term: \$115.00; 3 Yr term: \$70.00; 1 yr term (Jan thru Sep) \$25.00; (Oct thru Dec adds the next yr): \$30.00;
 Nat'l Life: 76+ yrs = \$100.00; 66 thru 75 yrs = \$200; 56 thru 65 yrs = \$300.00; 46 thru 55 = \$400.00; Thru 45 yrs = \$ 500.00;
 Local Base/chapter dues are separate and additional. Crash Dive Base dues are \$15 annually.

How did you find USSVI? Friend, Boat Assn, Local Event/News, Internet, Other (_____)

YOUR U.S. NAVY BIOGRAPHICAL DATA

Date Of Birth (MM/DD/YY) ____/____/____ **If other military service, What Branch?** _____

Highest Rate & Rank Attained: _____ **Mil Retired (Y/N):** _____ **On Active Duty? (Y/N):** _____

YR entered Mil Service: _____ **YR left Mil Service** _____ (Active/Inactive reserve time also counts.)

Check here if your Military Service falls within these time periods: Dec 7, 1941, thru Dec 31, 1946; June 27, 1950, thru Jan 31, 1955; Aug 5, 1964, thru May 7,1975; and Aug 2, 1990 to date.

Check here if you have been awarded an Expeditionary Medal

Submarines and ships served aboard as ship's company (Use back if you need more space.)

1. _____ Hull# _____ From Yr. ____ to Yr. ____
2. _____ Hull# _____ From Yr. ____ to Yr. ____
3. _____ Hull# _____ From Yr. ____ to Yr. ____
4. _____ Hull# _____ From Yr. ____ to Yr. ____
5. _____ Hull# _____ From Yr. ____ to Yr. ____

Next of Kin: Name: _____ **Relationship:** _____ (Spouse, Partner, Son, Dau, Parent, Other)

Addr: _____ **City:** _____ **State:** ____ **Zip:** _____ **Tel:** _____

(Leave this address line blank if the same as your home address)

Upon completion, give this form, including your National and Base membership DUES to the appropriate base officer, or mail to: Crash Dive Membership Chairman Tom Polzin, 12463 Foxtail Ln, Huntley, IL 60142; Cell 847/867-8668 Fax 847/669-2444