

Arizona Sub Vets Perch Base



Midwatch

August 2001
Volume 7 - Issue 8

Arizona SubVets Perch Base Officers

Base Commander
Dave Harnish
6509 W. Devonshire
Phoenix, AZ 85033-3350
623-846-9245
dharnish@qwest.net

Base Storekeeper
Garry L. Shumann 824 N.
Rogers St.
Mesa, AZ 85201-5849
480-464-5263
garry1@home.com

Base Treasurer
Memorial Committee
Bob May
1902 E. Karen Dr.
Phoenix, AZ 85022-3915
602-867-1445

Base Secretary
Edgar Brooks
517 Eagle Crest Dr.
Prescott, AZ 86301-5424
520-778-4069
EdgarB5352@aol.com

Base Chaplain
Warner H Doyle
13600 W. Roanoke Ave.
Goodyear, AZ 85338-2236
623-935-3830
d-hdoyle@worldnet.att.net

Membership Committee
Ramon Samson
9324 W. Briarwood Cir.
Sun City, AZ 85351-1425
623-815-9247
rsamson@bnswest.net

Public Relations Chair
Ben Acosta
12914 W. Alvarado Rd.
Avondale, AZ 85323-7142
benvirg@juno.com
602-935-7752

Midwatch Editor/Publisher
John Wilson
PO Box 31056
Flagstaff, AZ 86003
520-773-4946
john.wilson@nau.edl



August Eternal Patrol Days

USS GRUNION (SS216) August 01, 1942 70 men lost.
USS COCHINO (SS345) August 04, 1949 1 man lost
USS TUSK (SS426) August 04, 1949 7 men lost
USS BULLHEAD (SS332) August 06, 1945 84 men lost.
USS FLIER (SS250) August 13, 1944 78 men lost.
USS S39 (SS144) August 15, 1942 0 men lost.
USS HARDER (SS257) August 24, 1944 78 men lost.
USS POMPANO (SS181) August 29, 1943 76 men lost.

Let's We Forget Those Still On Patrol

August's meeting will be held on the 11th in Prescott, at the American Legion Post #6. Directions can be found in "Next Meeting and Location" or at <http://perch-base.org>.

From the Wardroom:



It is hard to believe that another month has passed and it is time for another report from the Wardroom. Things seem to be happening at such a pace it is hard to keep up. The USSVI/Perch Base calendar project is off and running with Chairman **Don Wannamaker** doing a job that is above and beyond the call of duty. We now have a new position in the base of Webmaster, those shoes are being filled by **Ramon Samson**. If you have not seen this site you need to do so. The address is <http://perch-base.org> Ray tells me that he is working with **Billy Grieves** of the Pigboaters to get a page for them on our site. As of 07/14/2001, this has already happened, check it out. This is truly a great thing and something that will do nothing but to help our relationship with them. A well done is to be extended to our Secretary **Ed Brooks** for the professional job done on the new Constitution and By-Laws. Each member will be receiving a copy in the mail as soon as we have the necessary approvals of the District 8 Commander. There will be some new positions created and volunteers asked to jump in and take on these jobs. Some of the major changes that will take effect are the creation of a Board of Directors, which will include all the officers and standing chairmanships. We now are working on getting a Policies and Procedures Manual put together. When this project is completed we should be in great shape paper wise. We are still working on getting a calling tree in effect so that we can get more information out via electronic means.

If you have e-mail and Membership Chairman **Ramon Samson** has not received that information, please contact him and pass your e-mail address to him. Ramon can be reached at rsamson@bnswest.net or **623-815-9247**. Your information will only be used to get information about base activities or submarine information received via the internet that is of an information type message. We will not provide anyone's e-mail address for any other function.

While giving out Kudos it's impossible to forget three of our members that just seem to go far beyond the normal in the performance of their duties and make the job of Base Commander much easier. These Gentlemen are **Glen Herold**, Vice Commander/Storekeeper, **Ed Brookes**, Secretary, and **Ramon Samson**, Membership Chairman/Mid Watch Writer/Webmaster. Thank you to each of you for your service to Perch Base.

Associate member **Tom Tilly** will begin work on the float trailer. His modeling skills are proving invaluable in this project. We are going to have our August meeting in Prescott to give that dedicated bunch of members a break from that long drive. The cost of the lunch will be \$10.00 and this would be a great time for the wives to come and join us and to also give them an opportunity to explore some new shopping haunts. The meeting will be held on August 11 at 1200 hours at the American Legion Post in Prescott. We are also looking at the

possibility of going to Yuma this winter to have a meeting with the snow birds.

Don't forget to mark your calendar for the Veteran's Day parade being held on 11/11/2001. This should be the first time we will have our new float trailer in a parade plus we are going to have the flags of all commissioned submarines in the parade thanks to the efforts of Shipmate **Ben Acosta**.

Welcome to the new members, the wardroom is looking forward to seeing all at the upcoming meeting/events.

Dave Harnish
Commander Perch Base.

Chaplains Corner:

We heard at last July's meeting, that Shipmate **Jim "Nellie" Nelson**, had lost a brother. We have no particulars on this, but wish to extend a hand to Jim if it is needed. We pray that all is well, and all are at Peace.

Shipmate **Manny Burrel** passed on 07/21/2001. At this writing there is no other information to be had. He had been suffering for some time and is now at Peace.

Sailor ... Rest Your Oar

Minutes from August's Meeting

The regular monthly meeting of the members of the Arizona Submarine Veterans - Perch Base was convened at the American Legion Post #29; Glendale, AZ at 1300 hours, 14 July 2001. The meeting was called to order by the Base Commander - **Dave Harnish**. The members were led in the "Pledge Of Allegiance"; followed by the dedication, moment of silence for our departed shipmates, "Tolling Of The Boats" and invocation. There were 20 members attending the meeting according to the sailing list. The membership welcomed new members **Nick Pappas** and **Gerald Benham**. Reading of the minutes from the June 09 meeting was waived - since they are printed in the base newsletter "Midwatch". The motion was made, seconded and approved by voice vote that the minutes be approved as printed in the July newsletter. The Treasurer's report was read and approved by voice vote of the Board members. The Base Treasurer (**Robert May**) reported the Base's financial status as the of the first day of July, 2001. Motion was made, seconded and the financial report was accepted as read, by voice vote of the members. **Dave Harnish** asked the membership to recognize Mr. **Don Wannamaker** for preparing the sandwich buffet enjoyed by the members prior to the meeting.

~Old Business~

The Base Commander - **David Harnish** informed the membership that a proposal to hold the 2002 District 8 meeting with the Submarine Veterans, WWII Southwest Regional Caucus was rejected by the SubVets WWII organization. A possible solution would be for District 8 meeting participants to become associate members of the SubVets WWII, attend the caucus, and hold the

District 8 meetings as an aside. Efforts to have a joint national convention with USSVI and Submarine Veterans WWII in 2003 was also rejected and the effort abandoned. A discussion was held regarding ways to bring the WWII SubVets organization closer to USSVI Perch Base. A motion was made, seconded and approved by show of hands vote, to offer honorary membership in Perch Base to the current and future Presidents of the Arizona Chapter of the Submarine Veterans - WWII.

Dave Harnish reported that the organizers of the Yarnell parade had sent Perch Base a letter of appreciation and certificate of honorable mention for its participation in their spring festival parade. It was also announced that **Ben Acosta** and **Howard Doyle** had arranged a successful recruiting effort at Palo Verde Nuclear Station. Twenty-eight volunteers signed up to carry submarine flags in the Veteran's day parade. There were also plans for a second recruiting at Palo Verde on Friday 20 July.

Dave Harnish reviewed the various efforts toward the Base's planned participation in the Veteran's Day parade in Phoenix. Arrangements have been made to involve members of the Naval Reserve and Recruiting District. Parade vehicles and personnel from various activities are being arranged for. The Perch Base float will be completed and the 100 submarine flags will round out a parade formation. It was mentioned that various base members are working to arrange a guided tour of the Palo Verde Nuclear Station sometime in November. The public relations director at Palo Verde is a submariner and is lending his support to the effort. Vice Commander and Base Storekeeper **Glenn Herold** announced that the ship's store has a plentiful supply of hats, license plates, and 2002 calendars. They will soon have Perch Base plaques and Perch Base patches. **Glenn** also informed the membership that **Garry Shumann** was in the process of relieving him as Base Storekeeper. Webmaster and membership committee chairman **Ramon Samson** informed the membership that the Base Website is up and running. There is still some added features to be activated, but participation has already been significant. The floor was opened for discussion on different ways to commemorate the contribution made by shipmate **Gary Patterson**. **Bubba Loftus** agreed to write an article for the newsletter to share his accounting of **Gary's** contribution to Perch Base and its members. **Kenny Wayne** offered to produce a quantity of cast submariner's dolphins to be sold and the proceeds going to a scholarship fund in **Gary's** name.

~New Business~

Base Commander **Dave Harnish** reminded the membership that the national organization's ballot has been mailed to all members. He encourages all members to complete the ballot and return it to him as soon as possible.

~Good of the Order~

The membership was asked to again recognize the exceptional effort of shipmate **Donald Wannamaker** who has again produced the Perch Base Calendar for 2002 in record time. This year's effort is expected to produce significant revenue for the base treasury through national sales of the calendars. It was announced that the next monthly meeting will be held

on August 11th in Prescott at 1200 hours. The 50/50 drawing grossed \$72. The \$36 winnings went to **Frank Rumbaugh**.

~Adjournment~

The Base Chaplain (Howard Doyle) was asked to lead the membership in a closing prayer after which it was moved, seconded and approved by voice vote that the meeting be adjourned. The meeting was adjourned at 1430 hours.

Welcome Aboard New Crewmen:

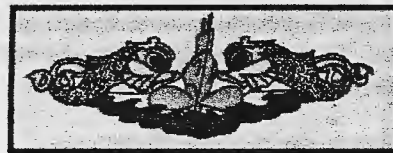
Upon a unanimous vote of the membership at July's meeting, it was suggested and passed that any USSV WWII Pigboater that wanted to join USSVI and Arizona Perch Base, would be given their first years base dues, as a gesture of "good for the order".

The first member to be awarded this is **R. Dale Martin**. **R. Dale** left the Navy after serving over 3 years as a RM2/c (SS) and qualified on **USS FLYING FISH (SS229)** in 1944. **R. Dale** lives in Phoenix with his wife Phyllis.

We have increased our membership by 4 this past month with the welcome addition of **Gerald Berham**, ET1(SS) who lives in Surprise, and Qualified on **USS STURGEON (SSN637)** in 1974.. **Gerald** is currently a member of the Naval Reserves. We have known **Gerald** for sometime as he is a member of the Reserve Color Guard, and have talked with him at the Memorial Services, and at our latest venture to Yarnell, in June.

Our third new member is **Richard A. Bernier**. **Richard** lives in Glendale with his wife Robbie, and left the Navy after 7 years as a IC(SS). Richard qualified on **USS IREX (SS482)** in 1960. He also served on **USS LAFAYETTE (SSBN616B)**, and **USS NAUTILUS (SSN571)**.

The fourth new member is **Nicholas Pappas**. **Nicholas** lives in Peoria with his wife Robyn and left the Navy as EM1(SS). His qualifying boat was the **USS KAMEHAMEHA (SSBN642B)**. Roger V Miller is Nicks sponsor, and both are employee's at Palo Verde. Arizona Perch Base membership now stands at 115. Perch Base stands largest, in the USSVI lineup.



Perch Base Booster Club 2001:

I have no clue as to how many ways "Thanks" can be said. I do know that without the help of you members that have given, not only at re-enlistment time but during the year, Arizona Perch Base would be in deep caca. We all know the cost of "existing" these days and it don't get cheaper over the years. Thank you gentlemen, Thank you very much.

Ben Acosta, Jerry N. Allston, Kenneth R. Anderson, Jerry F. Becker, Kenneth E. Becker, Joseph A. Bernard, Harold J. Bidigare, Wayne A. Braastad, Michael J. Breitner, Thomas P. Burke, Greg A. Camron, James F. Clewett, Roger J. Cousin, Earl J. Crowley III, Stephen F. Day, Warner H Doyle

Jr., Jeff Duncan, Ron "Doug" Eddy, Harry Ellis, Thomas E. Fooshee, Ray "Lee" Graybeal, Billy A. Grieves, Warren A. Grossetta, David R. Harnish, William L. Hatcher, J Tom Hellem, Glenn Herold, Lester R. Hillman, Stephen F. Hough, Davy Jones, Ron Kloch, Larry L. Krieger, Douglas M. La Rock, Robert A. Lancendorfer, Robert E. May, Hubert W. Maxey, Dennis Mc Comb, John H. Michaud, Paul V Miller, Roger M Miller, Robert E. Mitchell, Joseph R. Mullins, Jim A. Nelson, James W. Newman Sr., Joseph S. Otreba, Thomas B. Patterson, Raymond A. Perron, Royce E Pettit, Phil Phillips, W Scott Prothero, Larry M. Rankin, Frank W. Rumbaugh, Ramon Samson, Rodney Sanborn, Douglas F. Schultz, Tyler C. Smith, Robert G. Sothern, Adrain M. Stuke, Donald Wannamaker, Kenny Wayne, Edward J. Wolf, George Woods, Donald J Whitehead, Jerry D. Yowell.

Small Stores:

Garry Shumann is our new storekeeper. He has a very comprehensive array of USSVI Small Stores, consisting of hats, shirts, sweat shirts, belt buckles, beer mugs, cocktail glasses, coffee mugs, and a slew of other memorabilia. We have a new source for Vest's. Forms for ordering may be found on the Perch Base web site. Don't forget the 2002 Calendar. **Don Wannamaker** has done a super job in getting this project off the ground and words alone are not sufficient to express our gratitude. Give **Garry** a call for ordering and don't forget that order forms can be printed off the Perch Base web site.

Next Meeting and Location:

August's meeting will be in the cool air of Prescott at the American Legion Post #6. A printable map can be obtained from the web site. Take I-17 North out of Phoenix, for approximately 50 Miles. Exit at the AZ-69 N exit, Number 262 towards Cordes Jct Rd/ Prescott. Merge onto AZ-69 and go West for approximately 34 Miles. Take the US-89 S ramp for approximately 1/2 Mi Merge onto East Gurley St. and travel 0.6 Mi. to South Pleasant Street. South on Pleasant to number, 202. Would be great to see all our Prescott members show up on this one ... eh?

Scuttlebutt from the Lower Flats:

Shipmate **Kenny Wayne** from Yarnell has stepped forward and volunteered to make a number of casts of Dolphins from a Brass set he has. He thought that they may be ready by September's meeting. These casts will be made from Raku. Will be looking forward to seeing these.

I finally have a firm idea of how I am going to present the Klaxton that shipmate **Wayne Kirk Smith** presented Perch Base way back in December of 2000. It's not a easy matter to carry one of these things around and I wanted to present it in such a way as it could be used during our meetings and on the trailer.. I think I've come up with a way to do it, and am now "under construction" so to speak.

Lost Boats and Crews for August:

USS GRUNION (SS216): August 01, 1942, 70 men lost.

USS GRUNION arrived in Pearl from the states on June 20, 1942. She was given ten days of pre-patrol training and was immediately assigned to the Aleutians. Given a area just North of Kiska, she reported being attacked by a Japanese destroyer on July 15. On the same day, she reported sinking two subchasers and damaging a third. On July 19, **USS GRUNION**, **USS S-32 (SS137)**, **USS TRITON (SS201)**, and **USS TUNA (SS203)** were to patrol the approaches to Kiska and pick off any Japanese fleeing an air raid scheduled for the 22nd. The air raid was cancelled, but **USS GRUNION** reported attacking enemy ships off Sirius Point and being depth charged for her trouble. On the 30th, she reported heavy anti-sub forces in her area and was ordered into Kiska to refuel and rearm. That was her last transmission. Her fate remains a mystery.

USS COCHINO (SS345): August 04, 1949, 1 man lost 7 men lost from **USS TUSK (SS426)** in rescue action. 25 AUGUST 1949 2155:

After Torpedo Room in **USS COCHINO**:

"All hands have moved topside as ordered, except the XO and "Doc" Eason. With incredible effort, the badly burned XO gets halfway up the escape trunk and decides to quit. Then realizing Eason can't get out with him blocking the trunk, he goes with Eason's help and they're both out. **USS COCHINO** is barren. A plank has been put over from **USS TUSK**, but no one is crossing, too dangerous. LCDR. Wright moves forward to the plank and crosses. The other wounded are sent across. Just then **USS TUSK's** bow line parts and the two boats are held together only by **TUSK's** stern line. **COCHINO's** stern is rapidly flooding and settling. The entire crew of **COCHINO** is aboard **TUSK** with the exception of CDR. Benitez who doesn't want to lose his boat. He reaches down, touches the deck and finally races across to **TUSK** just as the plank disappears between the tanks of the two boats ... the entire crew is safely aboard **TUSK**.

The after line to **COCHINO** is cut and she begins to turn slowly as she stands on her tail with bow pointing skyward. "ALL ENGINES, BACK EMERGENCY!", **COCHINO** starts to slide ... **TUSK** pulls clear ... **COCHINO** disappears on her last patrol with a blast of spray.

Read complete story at <http://www.subnet.com/fleet/ss345.htm>.

USS BULLHEAD (SS332): August 06, 1945, 84 men lost.

USS BULLHEAD has the distinction of being the only U.S. Submarine in WWII to have carried a war correspondent during a war patrol. Martin Sheridan, of the Boston Globe had received permission from Admiral Nimitz to make the trip. During this patrol **USS BULLHEAD** was nearly sunk by a American B-24. When Admiral King in Washington learned of this, he forbade any future trips by war correspondents on Submarine Patrols. **USS BULLHEAD** claimed two small craft during

her second patrol, but they were not allowed since they could not be confirmed. On **USS BULLHEAD's** third patrol, a Japanese Army plane caught her in Lombok Strait on August 6, 1945 and made two direct hits. She went down with all hands.

USS FLIER (SS250): August 13, 1944, 78 men lost.

On her second patrol, while transiting the Balabac Straits, **USS FLIER** struck a mine and went under while still making 15 knots. Thirteen of her crew, including the Captain, J.D. Crowley, survived after swimming all night to a small island. Friendly natives guided them to U.S. Army Coast-watchers after a five-day stay on their first island. The **USS REDFIN (SS272)**, eventually picked up the survivors and returned them to their base.

USS S-39 (SS144): August 15, 1942, 0 men lost.

USS S-39 was in Submarine Division 201 of the Asiatic Fleet stationed at Manila when the war broke out. She immediately commenced war patrols. On December 13, she may have acquired the first sinking of the war when she hit a transport, but it could not be confirmed. **USS S-39** was assigned a rescue mission to pick up Admiral Spoorer and his staff of Royal Navy Aids along with several downed Australian airmen from tiny Chebia Island, where they had been stranded. After two futile nights of attempts, the crew learned, the Admiral and others had been captured. On her fifth patrol she ran aground East of Rossel Island in the Louisiade Archipeligo. Despite gallant efforts by her ships company, and HMAS Katoomba, which had been sent to help, she could not be moved and was pounded to pieces in the surf.

USS HARDER (SS257): August 24, 1944, 78 men lost.

USS HARDER received Presidential Unit Citations for Patrols # 1,2,3, and 4 under S.D. Dealey; and was one of only twenty-six boats to sink five or more vessels on any one patrol. She stands 16th of all boats for total confirmed vessels sunk. While operating near the mouth of Manila Bay with **USS HADDO (SS255)** and **USS HAKE (SS256)**, **USS HARDER** was laying in wait for a convoy to come out of the harbor. All three boats underwent attack by antisubmarine forces and **USS HARDER** was lost with all hands during this action. S.D.Dealey was awarded the Medal of Honor posthumously.

USS POMPANO (SS181): August 29, 1943, 76 men lost.

USS POMPANO was enroute from San Francisco to Hawaii on December 7, 1941. After stopping at Pearl for fuel, she departed on the 18th to observe the enemy's defenses of the Marshall Islands. On her seventh patrol, repeated radio calls failed to get a response and she was presumed lost with all hands — probably a mine, since no Japanese antisubmarine action was reported in her patrol area.

Important Dates in August:

- 01 1958 - **USS Nautilus (SSN571)** submerges under Arctic ice cap near Point Barrow.
- 03 1958 - **USS Nautilus (SSN571)** is first ship to reach the geographic North Pole submerged.
- 03 1970 - **USS James Madison (SSBN627)** conducts first submerged launching of Poseidon nuclear missile off Cape Kennedy.
- 12 1958 - **USS Nautilus (SSN571)** arrives Portland, England completing first submerged under ice cruise from Pacific to Atlantic Oceans.
- 17 1942 - **USS Nautilus (SS168)** and **USS Argonaut (SS166)** land 222 Marines on Makin Island, first amphibious attack made from submarines.
- 27 1944 - **USS Stingray (SS186)** lands men and supplies on Luzon, Philippines to support guerilla operations against the Japanese.
- 30 1929 - Near New London, CT, 26 officers and men test **Momsen** lung to exit submerged **USS S-4**

How Naval Science Helped Submariners Breathe Easy

The big challenge was developing air-independent propulsion, and as everyone knows, the U.S. Navy achieved this in 1955 with the nuclear-powered **USS NAUTILUS (SSN571)** and her successors. But little public attention has been drawn to the more basic problem of keeping the air in these latter-day submarines breathable. And even less is known about the way we answered a more fundamental question - how do we know when the air's any good? That second aspect exposes a difficult problem. Bad air is often odorless and colorless, as we're reminded every winter when people die of carbon monoxide poisoning from defective heaters. Years ago, miners took canaries into the pits with them to detect lethal concentrations of carbon monoxide. The small birds were more sensitive to dangerous concentrations of gas than the men themselves, and when the birds took sick, the miners knew it was time to get out. A variety of chemical sensors later found their way into mine safety equipment and industrial monitoring devices - and into the breathalyzers used by traffic cops and solicitous bartenders. But they were narrowly specialized, detecting only the presence of a small, specific range of compounds. None of these devices were a good fit with the submarine. Not only is space onboard at a premium, but the sheer variety of toxic, or at least unbreathable, substances that find their way into a submarine's enclosed spaces poses a problem of daunting complexity for atmosphere monitoring.

My first experience with the subject came when I arrived at the Naval Research Laboratory (NRL) in 1972 as a postdoctoral fellow to do basic research

in a group headed by Dr. Fred Saalfeld, now the top civilian at the Office of Naval Research. At that time Saalfeld was involved in developing the Central Atmosphere Monitoring System, CAMS-I, for submarine air analysis. From time to time, Saalfeld's group would analyze air samples taken onboard submarines. I still remember coming in over a weekend to analyze a set flown down from New London after one boat had had a fire in port. As it happened, this was the research submarine NR-1, and fortunately, there were no casualties. It was our responsibility to determine if it was safe to go back onboard without wearing protective breathing equipment. In those days, we used "old-fashioned" laboratory techniques to analyze and interpret data, and on my first actual submarine embark in 1975, riding **USS SNOOK (SSN592)** from San Diego to Bremerton, I performed a specialized series of air measurements using wet chemistry. And I experienced firsthand the odor you inevitably pick up riding one of our boats.

Submariners have always needed atmosphere monitoring instruments, and it's important that the equipment be reliable - a monitor that breaks frequently or cries "wolf" with false positives is worse than useless. The crew will only mistrust and ignore it. On the old diesel-electric submarines, there was little you could do to refurbish the atmosphere except for short term, emergency fixes using chemical scrubbing, oxygen candles, or reserve air carried in tanks. The principal method of atmosphere control was surface ventilation, which you had to do anyway to recharge the batteries, so the requirement for atmosphere monitoring was minimal. An old diesel submariner told me once that you could always tell when the oxygen level was getting low when it became difficult to light your cigarettes. That may say as much about how the world has changed since those days as needs to be said. It really changed when **USS NAUTILUS** put to sea in 1955, and it became clear that nuclear submarines would never realize their full potential without finding a way to keep the crew breathing while submerged. Suddenly a submarine could remain submerged for extended periods of time - as the Nautilus did when she transited the polar ice cap in 1958. But although nuclear-powered attack boats could in principle stay submerged indefinitely, their operational routines in the 1950s seldom required them to remain underwater for long intervals. They could and often did surface or snorkel to purify their air. Thus, in preparation for **USS NAUTILUS'** polar voyage, little more was installed than an emergency air breathing system that is still used today on all of our submarines - basically a network of compressed air lines with quick-connect points for emergency breathing masks.

All of this changed when ballistic missile submarines joined the fleet. From the deployment of **USS GEORGE WASHINGTON (SSBN598)** in the early 1960s, long-term submerged operation was the rule, and atmosphere control became correspondingly more

important. Not only did oxygen need to be supplied and carbon dioxide removed, but trace contaminants that previously could be ignored became a concern when submarines stayed submerged for long periods. Nautilus at first put to sea without effective means to remove carbon monoxide, hydrogen, and various organic chemicals - and the crew even painted while underway. But early air analyses showed the need for more comprehensive measures, and a catalytic burner was installed. This works by heating the submarine air and passing it over a catalyst that converts the contaminants to carbon dioxide and water. As valuable as these burners proved to be, there were still lessons to be learned, including the importance of keeping them properly adjusted. Fortunately, we no longer have incidents like the one depicted in a cartoon drawn by a **USS NAUTILUS** crewmember, in which formaldehyde in the air threatened to subject the crew to a slow embalming. Actually, the formaldehyde came from partial oxidation of methanol in a badly-adjusted burner, and the methanol was there because of its use as a solvent in shellac. Catalytic burners remove many undesirable compounds from the air, but they're only one of the systems that maintain the quality of a submarine's atmosphere.

Submarines produce oxygen by electrolyzing water - splitting the oxygen from the water it's bonded to. The boats also carry charcoal filters - good for absorbing large spills. And they remove carbon dioxide with a scrubber using the compound Monoethanolamine (MEA), which absorbs the CO₂ from the air. The MEA is then heated to drive out the gas, and the latter is compressed and ejected overboard. When nuclear propulsion brought essentially unlimited electrical power onboard, air conditioning came with it. But air conditioning requires refrigerants, and the early systems occasionally leaked refrigerating gases into the submarine's living spaces. These would build up over time, and, while they were in themselves nontoxic, they would decompose in the burner to produce acidic gases that were both toxic and corrosive. The refrigerants would also decompose in the heat of lighted cigarettes, giving the smoke a characteristically unpleasant taste, probably from the phosgene gas that was a product of the decomposition. Tobacco smoke is bad enough in itself, but to combine it with phosgene - a poisonous gas used militarily in World War I - goes beyond adding insult to injury.

During the 1960s, one of the most troublesome areas of atmosphere control was the atmosphere monitor itself. These instruments had no special name, but they went through six generations: from Mark I to Mark VI. To have this many versions of a nameless piece of military equipment in so short a time shows there were, in fact, serious problems, and the atmosphere monitor was always on the Submarine Force's top ten list of systems needing critical attention. Sometimes it topped the list. The Mark I through Mark IV, and the later Mark VI, all used an oxygen meter based on oxygen's distinctive magnetic susceptibility,

a hydrogen meter that exploited hydrogen's high thermal conductivity, and infrared adsorption for everything else. In contrast, the Mark V used gas chromatography. The CAMS now uses infrared for carbon monoxide and mass spectrometry for everything else. The Mark I through Mark IV hosted relatively unreliable and insensitive infrared analyzers that had trouble detecting small refrigerant leaks, which then went unnoticed and built up larger concentrations. Then, in a typical vicious cycle, they further degraded the analyzer's reliability. Since the analyzer provided poor readings, crews mistrusted it - and not without justification: A submarine atmosphere analyzer is supposed to operate within the environment it is analyzing. To get around these problems, we then developed the Mark V - which attempted to analyze all the gases with an automated gas chromatograph. With today's microprocessors, we might have made that work, but not in the 1960s, and the Mark V turned out to be a real dog.

At this point, Dr. Saalfeld convinced the Navy to consider an analyzer based on what was then perceived as an exotic laboratory technique: mass spectrometry. The Perkin Elmer Corporation had built a small analyzer as a prototype for NASA's Skylab. It was mounted in **USS HAMMERHEAD's (SSN663)** torpedo room, and the crew was instructed to record and compare its readings with those from the Mark IV analyzer. After two days at sea, the Mark IV failed, but the Perkin Elmer instrument worked fine for the entire trip. Encouraged, we had two more prototypes built and installed on **USS HAWKBILL (SSN666)** and **USS PINTADO (SSN672)** in 1972. They performed so well that the crews asked to keep them after the trial period - always a good sign. Next, a production version of this Central Atmosphere Monitoring System (CAMS) was built and tested to all the rigorous acoustic, EMI, shock and vibration requirements for submarine equipment. Finally, in 1975, twenty years after the **USS NAUTILUS** reported she was "underway on nuclear power," the Navy had a reliable submarine atmosphere analyzer. The good performance of the CAMS-I soon kept refrigerant leaks to a minimum. When a submarine crew saw CAMS indicate increasing refrigerant levels, they were confident that there really was a leak, and would find and fix it. A retired skipper told me once that early in his career he was aboard a pre-CAMS ship with a broken Mark IV analyzer and, coincidentally, a large refrigerant leak. As the refrigerant decomposed, it produced hydrochloric acid. This not only produced significant corrosion throughout the boat, but at the end of the patrol many of the crew (including himself) needed all the fillings in their teeth replaced.

One lesson we learned with the CAMS-I was to make the system drip proof. On the 637 Class submarines, the CAMS was installed near the main hatch used to load stores. Often water would come

down the hatch and splash onto the top of the CAMS, which could cause electrical problems if the system weren't properly protected. This area also saw a lot of foot traffic in port. I recall visiting **USS SUNFISH (SSN649)** when a ten-pound bag of pre-mixed cake icing with the consistency of confectioner's sugar was dropped next to the CAMS. At least it was lemon scented. CAMS-I and its successor CAMS-II remain in use today. CAMS-II's big advantage over CAMS-I is ease of reprogramming. The newest version of CAMS-II allows the system software to be changed in the field using a laptop computer. This enables us, for example, to analyze for new compounds like ozone-safe refrigerants, or to change alarm levels based on new limits in the submarine atmosphere control handbook. The success of the CAMS program is due to the skill and dedication of many people in the Navy and in industry. Some of them stayed with the program for many years, lending continuity and the positive effects of pride in ownership. Many scientists and engineers rode submarines and obtained a better appreciation for what the fleet needed and did not need. It's important to know your customer. It was great that submariners were willing to accept what then amounted to experimental scientific apparatus aboard their ships and use it.

The Submarine Force was far ahead of the rest of the Navy in that regard. Will a new analyzer soon be designed as a successor to the CAMS-II? I tend to doubt it - the existing system is a good one, and there are few military or commercial pressures driving us to replace it. There is one area, however, in which atmosphere analysis will become increasingly important. As the International Space Station comes on-line, the astronauts and cosmonauts who live and work there will be using atmosphere analyzers based on CAMS technology. With new communities and converging lines of expertise, you often see surprisingly fruitful advances. If space is indeed the deepest ocean, submarine Sailors may find they have more in common with astronauts than they do with their brothers and sisters in the surface fleet. Dr. Jeffrey Wyatt is senior member of the Corporate Staff at the Office of Naval Research (ONR). He came to ONR in 1999 after 17 years as a scientist at the Naval Research Laboratory (NRL), working in mass spectrometry and the related problem of submarine atmosphere monitoring.

Article from Undersea Warfare Magazine.

Supercavitating Weapons:

Propelling a body through water takes considerable effort, as every swimmer knows. Speeding up the pace makes the task even harder because skin friction rises with increased velocity. Swimming laps entirely underwater is even more difficult, as water produces 1,000 times more drag resistance than air does. Naval architects and marine engineers vie constantly with these age-old problems when they streamline the shapes of their hull designs

to minimize the frictional drag of water and fit their ships with powerful engines to drive them through the waves. It can come as a shock, therefore, to find out that scientists and engineers have come up with a new way to overcome viscous drag resistance and to move through water at high velocities. In general, the idea is to minimize the amount of wetted surface on the body by enclosing it in a low-density gas bubble. "When a fluid moves rapidly around a body, the pressure in the flow drops, particularly at trailing edges of the body," explains Marshall P. Tulin, director of the Ocean Engineering Laboratory at the University of California at Santa Barbara and a pioneer in the theory of supercavitating flows. "As velocity increases, a point is reached at which the pressure in the flow equals the vapor pressure of water, whereupon the fluid undergoes a phase change and becomes a gas: water vapor." In other words, with insufficient pressure to hold them together, the liquid water molecules dissociate into a gas.

"Under certain circumstances, especially at sharp edges, the flow can include attached cavities of approximately constant pressure filled with water vapor and air trailing behind. This is what we call natural cavitation," Tulin says. "The cavity takes on the shape necessary to conserve the constant pressure condition on its boundary and is determined by the body creating it, the cavity pressure and the force of gravity," he explains. Naval architects and marine engineers typically try to avoid cavitation because it can distort water flow to rob pumps, turbines, hydrofoils and propellers of operational efficiency. It can also lead to violent shock waves (from rapid bubble collapse), which cause pitting and erosion of metal surfaces. Supercavitation is an extreme version of cavitation in which a single bubble is formed that envelops the moving object almost completely. At velocities over about 50 meters per second, (typically) blunt-nosed cavitators and prow-mounted gas-injection systems produce these low-density gas pockets (what specialists call supercavities). With slender, axisymmetric bodies, supercavities take the shape of elongated ellipsoids beginning at the forebody and trailing behind, with the length dependent on the speed of the body. The resulting elliptically shaped cavities soon close up under the pressure of the surrounding water, an area characterized by complex, unsteady flows. Most of the difficulties in mathematically modeling supercavitating flows arise when considering what Tulin calls "the mess at the rear" of cavities, known as the collapse or closure region. In reality, the pressures inside gas cavities are not constant, which leads to many of the analysis problems, he says. However they're modeled, as long as the water touches only the cavitator, supercavitating devices can scoot along the interiors of the lengthy gas bubbles with minimal drag.

~U.S. Supercavitation Efforts~

Although supercavitation research in this country focused on high-speed propeller and hydrofoil

development in the 1950s, the U.S. Navy subsequently opted to pursue other underwater technologies, particularly those related to stealth operations, rather than high-velocity capabilities. As a result, experts say, the U.S. Navy currently has no supercavitating weapons and is now trying to catch up with the Russian navy. A future supercavitating torpedo based on U.S. Navy design concepts could feature a range of innovative cavitator, sensing, control and propulsion technologies. Supercavitating weapons work in the U.S. is being directed by the Office of Naval Research (ONR) in Arlington, VA. In general, the ONR's efforts are aimed at developing two classes of supercavitating technologies: projectiles and torpedoes. The first class of weapons is represented by RAMICS (for Rapid Airborne Mine Clearance System), a soon-to-be-requisitioned helicopter-borne weapon that destroys surface and near-surface marine mines by firing supercavitating rounds at them. The 20-millimeter flat-nosed projectiles, which are designed to travel stably through both air and water, are shot from a modified rapid-fire gun with advanced targeting assistance. (The fielded RAMICS projectiles are expected to be enlarged to 30-millimeter caliber.) Raytheon Naval & Maritime Integrated Systems in Portsmouth, R.I., is the chief contractor for RAMICS, and engineers at C Tech Defense Corporation in Port Angeles, Wash., developed the projectiles. The U.S. Navy is also considering deploying a surface ship-borne, deck-mounted RAMICS-type close-in weapons system that could destroy deadly wake-following torpedoes. The next step in supercavitating projectile technology will be an entirely subsurface gun system using Adaptable High-Speed Undersea Munitions (AHSUM). These would take the form of supercavitating "kinetic-kill" bullets that are fired from guns in streamlined turrets fitted to the submerged hulls of submarines, surface ships or towed mine-countermeasure sleds. The sonar-directed AHSUM system is hoped to be the underwater equivalent of the U.S. Navy's Phalanx weapons system, a radar-controlled rapid-fire gun that protects surface vessels from incoming cruise missiles.

The other supercavitating technology of interest to the ONR is a torpedo with a maximum velocity of about 200 knots. Substantial technical and system challenges stand in the way of the desired torpedo in the areas of launching, hydrodynamics, acoustics, guidance and control, and propulsion, to name a few, according to ONR program manager Kam Ng. NUWC Newport is doing the applied research and some of the basic research work as well. The effort is supported by the Applied Research Laboratory at Pennsylvania State University (ARL/Penn State), the University of Florida, Anteon Corporation and Lockheed Martin. With regard to the computational fluid dynamics (CFD) work on the torpedo being done at ARL/Penn State, "we're trying to simulate the conditions in which the torpedo would operate, which is the so-called two-phase flow regime where there's both water and gas," Ng says. "We want to know what

the water is doing, what the gas cavity is like, and how we make sure the gas cavity encloses the body at all times. Remember, once the cavity is disrupted, the wetted surface increases and the speed is going to drop off very quickly. "So far the CFD is doing a fairly good job, but it's not yet to the point that we're happy with it," he continues. "It's both a matter of computational issues and our fundamental understanding of the physics. This is not a Newtonian fluid we're working with here; it's much more complex than a single-phase flow."

Taken from the pages at: <http://www.freerepublic.com/forum/a3adc974c4c69.htm>

G'Day From the Boys Down Under:

<http://www.gunplot.net/submarines.html>

After the formation of the Royal Australian Navy, initial plans for Australian submarines were for three British "C" Class boats but only two of the improved "E" Class were authorized. At a submerged displacement of 810 tons and speed of 10 knots both submarines were commissioned at Portsmouth on 28th February 1914. They were named AE1 and AE2, and the 'A' in their name standing for Australian.

Beset with minor problems during their delivery voyage from England AE1 and AE2 arrived in Sydney on 24 May 1914, just three months before the outbreak of World War I. It was a baptism of fire that was to see both these boats lost, one in action and one without a trace. AE1 and AE2 were assigned to operations in New Guinea waters at the outbreak of the war. One month later AE1 was gone. On 14 September 1914 AE1 was on patrol with HMAS Parramatta of Cape Gazelle, New Britain. At the end of the patrol she was sighted by Parramatta apparently heading into harbor, but she never arrived. After the loss of AE1, AE2 was offered for use by the Admiralty. She sailed under the tow of HMAS Berrima from Australia to the Middle East on 31 December 1914, and arrived as the preparations for the Dardenelles (Gallipoli) campaign got underway. On the first Anzac Day, 25 April 1915, AE2 attempted to reach the Sea of Marmora through the straits for the purpose of disrupting enemy shipping. During the next five days AE2 was involved in a series of actions which saw her attacked repeatedly by enemy vessels. On the morning of 30 April 1915 she was attacked by a Turkish torpedo boat and forced to the surface. After being holed by the torpedo boat AE2 was scuttled by her crew and sank off Kara Burnu Point. All hands spent the remainder of the war as POWs. With the loss of AE2, the Australian submarine service ceased to exist for the next four years.

Then in 1919 as a gift package which included a number of destroyers, six "J" Class submarines were transferred from the Royal Navy to the R.A.N. The J boats were commissioned into the R.A.N. in March 1919 and in April sailed for Australia in company with HMAS Sydney and the submarine depot ship HMAS Platypus. They arrived in Sydney in July 1919 and being found in poor condition were immediately placed in refit. In 1920

after extensive work, five boats sailed from Sydney to the new submarine base at Geelong, Victoria. The depot ship Platypus and the turret ship HMAS Cerberus were moored there also for support. The sixth boat J7, did not complete her refit until June 1922. The only major cruise for the new submarines was to Tasmania in 1921. Apart from that the "J" Class spent very little time at sea and had very uneventful lives with the R.A.N. With the exception of J7 all the boats were decommissioned and sold out of service by 1924. J7 was used for some years as an auxiliary power plant at Flinders Naval Depot in Victoria. The remains of J3 can be seen as a breakwater in Port Phillip Bay. For the second time the R.A.N. submarine service was extinct. In 1923 there was vigorous debate on the subject of whether Britain should build replacement submarines for the "J" Class or build them in Australia. Britain was chosen. So the third attempt to establish Australia's submarine force began in April and June 1927 when HMAS Oxley, and HMAS Otway was commissioned into the Royal Australian Navy.

On their delivery voyage which began in February 1928, cracks were found in their engine columns and both were laid up in Malta for over eight months. They both arrived in Australia in February 1929, just over a year after sailing from England. Unfortunately, Australia's third attempt at maintaining a submarine service was terminated when armament limitations and the deepening economic depression forced the paying off of both boats at the end of 1929. Both boats were transferred to the Royal Navy in 1931. On 9 September 1939 the now HMS Oxley was the first allied naval casualty of World War II when she was sunk by a torpedo from another British submarine, HMS Triton. The apparent cause of this was an incorrect response to a recognition challenge. Apart from a small Dutch submarine (K9) used for training purposes during WWII, Australia would not operate submarines for the next thirty-six years. A liability rather than an asset, the K9 was used by the R.A.N. for less than a year in an antisubmarine training role. Commissioned into the navy in June 1943, she was manned by Royal navy personnel with some Australian volunteers. Her liability became obvious in that her batteries had a habit of exploding when she was dove, which was very disconcerting to the crew. She was paid off after nine months and passed back to Dutch control in 1944. Although Australia had been short of submarines in WWII, Australian submariners were not, as many British boats were commanded or crewed by Australian sailors. During the years 1949 - 1969 a total of ten "A" and "T" class were stationed in Sydney. Although never commissioned into the R.A.N., the running costs were met by Australia and New Zealand. They rendered valuable service to the R.A.N. and from this class were developed the later Oberon Class.

On the fifth attempt at establishing and Australian submarine arm the decision was taken to acquire a new force of four Oberon Class submarines to be built at Scotts on the Clyde. The first of this new

breed was HMAS Oxley, commissioned in March 1967, followed by her sisters HMAS Otway, HMAS Ovens and HMAS Onslow. HMAS Oxley's arrival in Sydney coincided with the commissioning of the submarine base HMAS Platypus established at Neutral bay, Sydney. In 1977-78 two more units, HMAS Orion and HMAS Otama, joined the squadron and all were eventually modernized in an ambitious and successful program. Now these aging boats which have given excellent service to the R.A.N. are currently being phased out to make way for the new breed of Submarine being built in South Australia, the Collins Class. From a beginning which relied heavily on support from mother England, the Australian submarine service has matured into an elite branch of the navy with a company whose pride of service is unsurpassed. When I asked permission to use this article, I received this in part of his message. Those of you that have access to the web, take a look at his pages. A very good one, to say the least.

I am a little familiar with the history of US Subs in WWII, most impressive stats and also very sad ones to boot. You held the line, at sea, in the dark early days and beyond, congratulations on a fine service.

Cheers and beers from Oz. Russ Graystone, Ex CPOFC, now, Chief Bosun, RAN. <http://www.gunplot.net/submarines.html>

Bits & Pieces:

This news is from the Defense Daily dated June 18, 2001. Advance SEAL Delivery System (ASDS) Northrop Grumman is now completing its contractor testing on the ASDS mini-sub and is slated to turn over to the Navy control of vehicle testing in about two weeks, one company executive says. The Navy is to take over testing ASDS compatibility with current submarines. The new vehicle is expected to deploy "piggy back" aboard a larger attack or ballistic missile boat. Northrop Grumman expects to deliver the first operational ASDS to the Navy between August 15-24, depending on the schedules of the various officials.

Chile Con Carne Attack submarines need better and faster SONAR and Fire Control equipment, according to the commander of one boat that ran afoul of "obsolete" technology during recent exercises with an ally. During training with Chilean Navy German-built diesel submarines, **USS Montpelier (SSN765)** discovered that bigger and nuclear is not always better. The skipper of the Montpelier tells a Navy Submarine League conference audience that the diesel boat "shot" him twice during successive exercise runs. "The third time we decided to get more patient and waited for him (the Chilean) to make a mistake," CDR. Ron LaSilva says.

Wake Up Call From the encounter with the Chileans, whom LaSilva described as professional and well-prepared, the Navy has learned again that it cannot underestimate the stealth capability of a modern diesel submarine. With advances coming in battery and motor technology that will grant future diesel boats long endurance, and with the proliferation of these ships, the littorals will become increasingly dangerous for U.S.

submarines. Some diesel subs come readily equipped with the latest in broadband sonar and computer processing capability that rivals U.S. systems. LaSilva urged continued developments in sonar processing and command and control systems for Navy boats, coupled with a healthy dose of humility and caution in future operations.

This news is from the RAN Navy news: The US admiral in charge of Exercise Tandem Thrust heaped praise on the Collins class submarine HMAS WALLER and the LPAs HMA Ships MANOORA and KANIMBLA, vessels once maligned by some in Australia. "The Collins is world class," VADM James Metzger, the commander of the US Seventh Fleet said in Sydney last week. He was speaking at a packed press conference on his command ship, the USS BLUE RIDGE, then alongside RBE. His second in command of the exercise, the RAN's COMFLOT, CDR Jim Stapleton was also in attendance and echoed VADM Metzger's remarks. "WALLER (one of three submarines committed to the exercise and under the command of LCDR Brett Sampson) was very professionally operated and was very quiet." He said the Australian diesel-powered submarine was ideal for working in littoral waters and was hard to detect. "The man in charge of the maritime component, ADML Mullard, was extremely challenged by WALLER." Asked if the opposing forces had found WALLER, VADM Metzger responded, "We could find her on the surface".

Full article can be found at RAN Navy News

New's from Around the Yards:

Electric Boat receives \$54M contract for Virginia-class design work (June 21, 2001) The U.S. Navy has awarded Electric Boat a \$54 million contract modification to complete component development work and evaluate technology-insertion opportunities relating to the Virginia-class submarine program. The contract modification provides funding for ongoing design-yard services in support of the baseline Virginia (**SSN774**) design, and technology insertion and upgrades for the follow-on ships of the class. The modification also provides for design-yard support for construction of the planned 30 Virginia-class ships. These submarines will provide the U.S. Navy with the capabilities it requires to maintain the nation's undersea superiority well into the 21st century. Currently, Electric Boat and its construction teammate, Newport News Shipbuilding, are working on a \$4.2 billion contract to build the first four ships of the class. Electric Boat will deliver the first ship, Virginia, in 2004.

A Thought for the Wives, we are Grateful:

The Difference Over the years,

I've talked a lot about military spouses....how special they are and the price they pay for freedom too. The funny thing about it, is most military spouses don't consider themselves different from other spouses. They do what they have to do, bound together not by blood or merely friendship, but with a shared

spirit whose origin is in the very essence of what love truly is. Is there truly a difference? I think there is. You have to decide for yourself. Other spouses get married and look forward to building equity in a home and putting down family roots. Military spouses get married and know they'll live in base housing or rent, and their roots must be short so they can be transplanted frequently. Other spouses decorate a home with flair and personality that will last a lifetime. Military spouses decorate a home with flare tempered with the knowledge that no two base houses have the same size windows or same size rooms. Curtains have to be flexible and multiple sets are a plus. Furniture must fit like puzzle pieces. Other spouses have living rooms that are immaculate and seldom used.

Military spouses have immaculate living room/dining room combos. The coffee table got a scratch or two moving from Germany, but it still looks pretty good. Other spouses say good-bye to their spouse for a business trip and know they won't see them for a week. They are lonely, but can survive. Military spouses say good-bye to their deploying spouse and know they won't see them for months, or for a remote, a year. They are lonely, but will survive. Other spouses, when a washer hose blows off, call Maytag and then write a check out for getting the hose reconnected. Military spouses will cut the water off and fix it themselves. Other spouses get used to saying "hello" to friends they see all the time. Military spouses get used to saying "good-bye" to friends made the last two years. Other spouses worry about whether their child will be class president next year. Military spouses worry about whether their child will be accepted in yet another new school next year and whether that school will be the worst in the city...again. Other spouses can count on spouse participation in special events...birthdays, anniversaries, concerts, football games, graduation, and even the birth of a child. Military spouses only count on each other; because they realize that the Flag has to come first if freedom is to survive. It has to be that way. Other spouses put up yellow ribbons when the troops are imperiled across the globe and take them down when the troops come home. Military spouses wear yellow ribbons around their hearts and they never go away. Other spouses worry about being late for mom's Thanksgiving dinner. Military spouses worry about getting back from Japan in time for dad's funeral. And other spouses are touched by the television program showing an elderly lady putting a card down in front of a long, black wall that has names on it. The card simply says "Happy Birthday, Sweetheart. You would have been sixty today." A military spouse is the lady with the card. And the wall is the Vietnam Memorial. I would never say military spouses are better or worse than other spouses are. But I will say there is a difference. And I will say that our country asks more of military spouses than is asked of other spouses. And I will say, without hesitation, that military spouses pay just as high a price for freedom as do their active duty husbands or wives. Perhaps the price they pay is

even higher. Dying in service to our country isn't near as hard as loving someone who has died in service to our country, and having to live without them. God bless our military spouses for all they freely give. And God bless America.

Submitted by Shipmate Frank Rumbaugh

The Submariner:

Only a submariner realizes to what extent an entire ship depends on him as an individual. To a landsman this is not understandable, and sometimes it is even difficult for us to comprehend, but it is so! A submarine at sea is a different world in herself, and in consideration of the protracted and distant operations of submarines, the Navy must place responsibility and trust in the hands of those who take such ships to sea. In each submarine there are men who, in the hour of emergency or peril at sea, can turn to each other. These men are ultimately responsible to themselves and to each other for all aspects of operation of their submarine. They are the crew. They are the ship. This is perhaps the most difficult and demanding assignment in the Navy. There is not an instant during his tour as a submariner that he can escape the grasp of responsibility. His privileges in view of his obligations are almost ludicrously small, nevertheless, it is the spur which has given the Navy its greatest mariners - the men of the Submarine Service.

It is a duty which most richly deserves the proud and time honored title of...**Submariner.**

Submitted by Shipmate Dave Harnish

Submarine Humor:

Marines vs Navy A platoon of Marines is marching down a dirt road. They just came to a curve around a hill, when a Submariner at the top of the hill pops his head up and yelled "Marines SUCK!" "Platoon!" "Halt!" "Jones!" "Carter!" "Go take care of that Sailor!" said the Marine Sergeant. Jones and Carter run up over the top of the hill. Bam! Biff! Sock! Oh Damn! Then Jones and Carter were tossed down the hill. The Submariner at the top of the hill pops his head up again and yells "Marines SUCK!" "First File!" "Go take care of that Sailor!" said the Marine Sergeant. Now we have ten Marines running up over the top of the hill. Bam! Biff! Sock! Oh Oh! One by one they were tossed back down the hill. The Sailor at the top of the hill pops his head up again and yells "Marines SUCK!" "Platoon!" "Go take care of that Sailor!" said the Marine Sergeant. Forty-five Marines go running up over the top of the hill. Bam! Biff! Sock! Oh No! One by one they were tossed back down the hill. Now the side Of the hill is covered with Marines that are not totally active. The Sailor at the top of the hill pops his head up again and yells "Marines SUCK!" "It's looks as I'm going to have to take care of that Submariner myself" said the Marine Sergeant to himself. He starts walking up the hill and about this time Jones was coming to. Jones said to the Marine Sergeant in a weak voice "Sarge, don't go up there, it's an ambush, there's two of them."

Submitted by Shipmate Tom Fooshee

**U.S. Submarine Veterans
Perch Base
6509 W. Devonshire
Phoenix, AZ 85033-3350
www.perch-base.org**

stamps! **\$0.570**
.com AUG 07 2001
US POSTAGE
FIRST-CLASS MAIL
FLAGSTAFF, AZ 86001



STAMPS.COM

062S0000460463

