



The MidWatch



THE MONTHLY NEWSLETTER OF PERCH BASE, USSVI, PHOENIX, ARIZONA

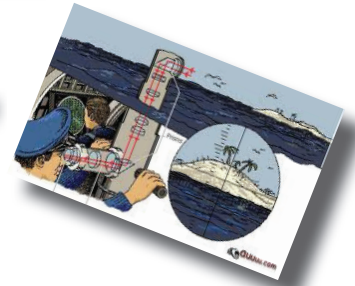
WWW.PERCH-BASE.ORG

August 2011
Volume 17 - Issue 8

**THE USSVI CREED GUIDES OUR EFFORTS AS PERCH BASE.
SEE PAGE FOUR FOR THE FULL TEXT OF OUR CREED.**

Featured Story

A BOAT'S UNDERWATER "EYES"



It's not a tube with prisms and mirrors any more! Page 11.

What Else is "Below Decks" in the MidWatch

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NEXT REGULAR MEETING
Social hour 11 a.m. - Meeting begins 12 noon
Saturday, August 17, 2011
Dillon's Restaurant at Arrowhead
20585 N. 58th Avenue

LEST WE FORGET THOSE STILL ON PATROL

AUGUST ETERNAL PATROLS



USS BULLHEAD (SS-332)

06 Aug 1945 84 Lost

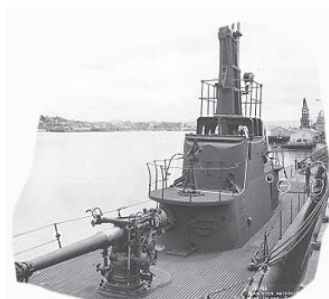
Japanese Air Attack off Bali Coast



USS FLIER (SS-250)

13 Aug 1944 78 Lost

Japanese Mine in Balabac Strait



USS BASS (SS-164)

17 Aug 1942 25 Lost

Flooding off Panama Canal, Boat survived



USS HARDER (SS-257)

24 Aug 1944 79 Lost

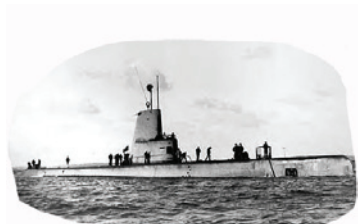
Japanese Depth Charge Attack off Luzon, P.I.



USS COCHINO (SS-345)

26 Aug 1949 1 Lost

Battery Explosion off Norway



USS TUSK (SS-426)

26 Aug 1949 6 Lost

Assisting USS COCHINO off Norway, Boat survived



USSVI CREED

Our organization's purpose is . . .

“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.

In addition to perpetuating the memory of departed shipmates, we shall provide a way for all Submariners to gather for the mutual benefit and enjoyment. Our common heritage as Submariners shall be strengthened by camaraderie. We support a strong U.S. Submarine Force.

The organization will engage in various projects and deeds that will bring about the perpetual remembrance of those shipmates who have given the supreme sacrifice. The organization will also endeavor to educate all third parties it comes in contact with about the services our submarine brothers performed and how their sacrifices made possible the freedom and lifestyle we enjoy today.”



2011 Perch Base Foundation Supporters

These are the Base members and friends who donate monies to allow for Base operation while keeping our dues low and avoid raising money through member labor as most other organizations do.

Remember, if you contribute by check, it must be made out to the “Perch Base Foundation.”

These are the 2011 Foundation Donors



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Sailing Orders



NEXT REGULAR MEETING
12 noon, Saturday, August 13, 2011
(social hour at 11 a.m.)
Dillon's Restaurant at Arrowhead
20585 N. 58th Avenue
Glendale, AZ 85308-6821

The summer doldrums have set in and we have no immediate events on the horizon. We have decided this is a good time to re-paint the float and do other maintenance

If we need help, or if anything comes up, Base members will be notified by a **Flash Traffic** message.



From the Wardroom Base Commander's Message

Shipmates:

Frontier Days in Prescott was a huge success. Shipmates from Gudgeon Base and Tucson Base were there and we had our parade entry as "Arizona Submarine Veterans". In addition, many of us who were there also attended the rodeo on Friday night after having a large gathering for dinner at the Golden Corral. In short, everyone had a great time. It is always good to see shipmates.

As of this writing we have no word on our Kap(SS)4Kid(SS) event at Children's Hospital. Hopefully we will have the information soon.

We are still looking forward to performing maintenance on the float. Details will be sent out when everything is firmed up.

Hope to see everyone at the next meeting on August 13th.

Fraternally,

Jim Denzien, Base Commander

July 2011 Minutes of the Regular Base Meeting

The regular monthly meeting of the Arizona Submarine Veterans Perch Base was convened at Dillon's Restaurant at Arrowhead, in Glendale, AZ at 1215 hours, 9 July 2011. The meeting was called to order by Jim Denzien, Base Commander.

The "Call to Order" was followed by a prayer of invocation by Walt Blomgren, the Pledge of Allegiance and the Reciting of our Creed. The tolling ceremony was conducted for all boats lost in the month of July and a moment of silence was observed for our shipmates on eternal patrol.

The minutes from the June 2011 regular meeting needed to be approved as published in the "Mid Watch" monthly newsletter. A motion was made and seconded. The motion was carried by unanimous voice vote.

Bob Warner reported on the base's financial status as of 31 May 2011. A motion was made and seconded to accept the Treasurer's Report as read. The motion carried by unanimous voice vote.

Jim Denzien introduced the guests present at today's meeting:

Tim Gregory – Will be joining Perch Base

Thomas Farley – Will be joining Perch Base

According to the Sailing List there were 32 members and guests present. The complete sailing list included:

Jim Denzien	Howard Doyle	Chuck Emmett	Bob Warner
Rick Simmons	Walt Blomgren	Richard Kunze	John Schlag
DeWayne Lober	Herb Coulter	Jerry Pittman	Bill Tippet
Rick Baxter	Jack Kimball	Robb Roberts	Peter Tardiff
Don DeMarte	Davy Jones	Ed Hawkins	Richard Bernier
Dan Moss	Mary Denzien	Ron Dutcher	Tom Clonts
Theodore W Hunt	Joe Varese	Tim Gregory	Steven Stanger
Jim Velson	Thomas Farley	Heather Diaz	Gary Slick

Base Commander's Board of Directors Meeting Report

Kap(SS)4Kid(SS) – Phoenix Children's Hospital, We are looking at a date in August for our next visit. At this time we do not have a confirmed date, Joe Varese, our event Coordinator is coordinating with them to establish a date. We expect it to be in August.

Jim then discussed the E-Mail sent and the rumors that followed the Memorial Day Ceremony at the National Cemetery. Jim stated that he would like to try to answer all of the questions members may have in regard to this and finish these discussions. As the officers of the base we feel that there are two events each year that the base should support to the fullest extent possible. The Memorial Day Ceremony, at the National Cemetery and Veterans Day. The intent of the E-Mail was to ask and determine what we as officers of the Base could do to help the members attend the events which the Base precipitates.

Veterans Day November 11, 2011 - We have parades in Phoenix which we know is Nov. 11th, Mesa, Anthem, Black Canyon City and Gilbert. We don't have a lot of information yet but will get it out as it becomes available.

Fund Raising – Ordering Jervis Tumblers for sale. Jim indicated these are often seen in stores. They are plastic tumblers. Jim showed the 24oz & 12oz sizes and stated that our base patch could be placed inside of the larger one. The smaller one with the South Florida Base patch inside was passed around. We are looking to obtaining them and selling them through our Store Keeper and at some of the events that we have.

Save our Sail – Jim made a presentation of how he would like to proceed. Though not a direct function of Perch Base, the membership of the Board of Directors come from the Base. Jim stated that he will be getting with Dan Moss and his wife, Layne, who will act as co-chairs for the foundation. They will be adding other members and having a Board meeting soon to structure and get things moving forward. Jim introduced Tom Clonts an associate member of our base and former member of the Phoenix Commission, which was involved in making the attempt to obtain the Sail of the Phoenix and get it here. We also have several other members that are former Phoenix Commission Members.

Jim mentioned the food service here, which we have made changes and attempted to make it as seamless as possible so that everyone can eat and we can conduct business. Also don't forget to pay your bill.

USSVI National Convention – Springfield, Missouri – September 5th – 11th it is being put on by Ozark Runner Base. Jim received an E-mail from a member of Gudgeon Base offering a car pool ride if any one is interested contact Jim to get the phone number.

Jim then discussed the forthcoming Base Survey. Again this is not an attempt to invade anyone's privacy. As the Bases Board of Directors we would like to know what skill sets exist within the base. Are you a welder, are you very computer literate etc. It is not completed yet but will be coming out as Flash Traffic and in the News Letter. Please get this back to us, Chuck will be pulling this together. It will be an E-Mail response no stamp required.

Float Maintenance – Currently we are in a down period, the float will be 3 years old in November, and it is starting to show wear. Any one interested in helping let Jim know. It was mentioned that the brakes sometimes lock-up. There is no date as yet, we won't get it all done in one day there will probably be a indow.

Letter to Michael Bircumshaw, National Commander – Following the retirement of Jerry Pittman when we learned that to the man the Command Master Chief's were all under the impression that personal had to be either retired or discharged to join USSVI. This is not true; the only requirement is that they are qualified in Submarines. Michael called Jim this week to inform him that the National organization is aware of that misunderstanding. They are looking into ways and means the make people aware. They not yet done anything but it is now a topic of their discussions.

Base Officers and Board of Directors Reports

Vice Commander – Howard Doyle shared experience from recent family trip which included a trip to National Submarine Museum at Groton. He stated that they had done an excellent job including everything from the Holland to the latest boats of today. He highly recommended that if you are in the area go there and take a look at it.

Secretary – John Schlag had nothing to report.

Treasurer – Bob Warner had nothing additional to report.

Membership Chairman – Rick Simmons reminded everyone that once your membership is in to get on the USSVI Website, get a password, check your profile ensure it is accurate, up to date. You can make changes; they will notify us of changes you make. It is a good place to look for other people, there is a search feature.

Chief of the Boat – Richard Kunze had nothing to report.

Communications Officer – Chuck Emmett stated that he had copies of the latest News Letter with him. Also that he investigated the idea of putting Flash Traffic on the Web Pager but dismissed it as not being in the best interest of the Base. Copies of all of both are available electronically.

Chaplain – Walt Blomgren reported that we had no one on the Binnacle list.

Event Coordinator – Joe Varese stated that everything has already been mentioned.

Base Storekeeper – DeWayne Lober announced that once again he had “Shirts, Decals, Cups and Base patches.

Old Business

Frontier Days Parade & Rodeo, Prescott, Arizona – July 2nd, the event was well attended, the weather was good and it was fun for all that attended.

Kap(SS)4Kid(SS) - Once again as soon as we get information we will publish it as Flash Traffic.

Float Maintenance – We will also notify you by Flash Traffic as plans develop. It only gets to those that are on the E-Mail list, but we can only work with what we've got.

New Business

Annual Perch Base Awards Dinner – January 28th, 2012 we have opted to have it here at Dillions. Happy Hour will be at 5PM with dinner to follow. If anyone has suggestions for a guest speaker, they are welcomed.

The Base Survey will be coming out, again not to invade anyone's privacy, to give us a little more information regarding the skill sets available within our membership.

The election of District Commanders started July 1st. We are part of Western District 1; Jack Messersmith is currently our District Commander. Jack is currently the only candidate running; Chuck will send a Flash Traffic for you to vote. There will be a space for a write-in candidate, be sure that they agree to serve as District Commander. Jim will forward the results to Jim Dunn, our Regional Director. So send these back by the end of July.

Good of the Order

Binnacle list - Walt has already stated that no one is on the binnacle list.

Don DeMarte reported that the past Commander of American Legion Carol Hamberger had passed away; she had been a great supporter of the submarine group and a tremendous lady. Also the widow of the artist that painted the USS Batfish had received a letter from Perch Base thanking her

There was discussion of how to obtain a ride to an event if needed, Let Howard, Jim Denizen or Rick Simmons know and we'll make the connection happen.

There was a question of supporting Charities Ronald McDonald House was brought up. Howard stated that we have tried to maintain charities we are associated with the Navy and the Submarine Service, For several years at Christmas we have sent money to San Diego to The Command Master Chief for the Boats that are in port for the enlisted men that are having trouble, Food boxes and things like that.

The Base received from Don DeMarte a painting of the USS BATFISH donated by the artist's wife and the Daisy Mountain Veterans Association which will be mounted and displayed here at Dillions.

Presentation on the Classes of Submarines

Chuck Emmett stated that this information is on our web site, He proceeded with a slide presentation. A very comprehensive listing of all classes of submarines from the first, USS Alligator, followed by the first true submarine the USS Holland with an internal combustion engine, electric motor, torpedo tube and deck gun. Chuck continued through all Classes of Submarines to the latest Virginia Class. The presentation was well received by all base members present.

50/50 Drawing

COB, Richard conducted the 50/50 drawing. It was won by Jim Denzien, Total \$103 = \$51.50

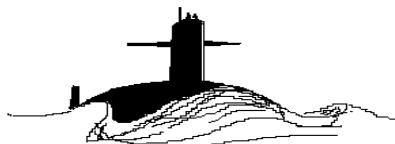
Adjournment

All outstanding business having been concluded, it was moved and seconded that the meeting be adjourned. The motion carried by unanimous voice vote and the meeting was adjourned.

The benediction was offered by Walt Blomgren.

John Schlag

Secretary, Perch Base USSVI





CHAPLAIN'S COLUMN

A Submariner's Prayer

"Eternal Father, strong to save
Whose arm hath bound the restless wave,
Who biddest the mighty ocean deep
Its own appointed limits keep.
O hear us when we cry to Thee
For those in peril on the sea.

Bless those who serve beneath the deep,
Through lonely hour their vigil keep,
May peace their mission ever be,
Protect each one we ask of Thee.
Bless those at home who wait and pray,
For their return by night or day."

Shipmate Robert E. May's wife of 67 years passed away as announced earlier in a **Flash Traffic**.

A Catholic Mass (Latin) for her will be celebrated on Thursday, August 18 at 10 a.m. in St. Clement of Rome Church, 15800 N Del Webb Boulevard, Sun City, AZ with reception following.

Her ashes will then be personally delivered to Arlington National Cemetery for eventual disposition with those of her beloved Bob.

IMPORTANT

Shipmates, you should ensure that your next of kin is aware of the information in the box, right.

In the case of my death, please immediately notify the U.S. Submarine Veterans Inc., (USSVI) at 877-542-3483 or 360-337-2978 and give the person on duty the information regarding my death, funeral, and burial arrangements, plus who they can contact for follow-up and support.

Please ask them to contact my local chapter's Base Commander with this information as well (they can look it up in their membership records).

This information can alternatively be E-Mailed to the National Office at "office@ussvi.org".

SHIPMATES RUNNING ON LESS THAN A FULL BATTERY CHARGE



Binnacle List

AS THIS ISSUE OF THE MIDWATCH IS PRODUCED, THERE ARE NO REPORTS OF ANY SHIPMATES BEING SICK OR HOSPITALIZED.



WHAT We've BEEN UP TO ...

Prescott's Rodeo Days Parade - July 2



Perch Base joined with Gudgeon Base (Prescott) and Tucson Base for a combined entry. Ourselves and Tucson both had their floats. Many members thought this may have been the largest and most enthusiastic parade crowds we have had in some time.



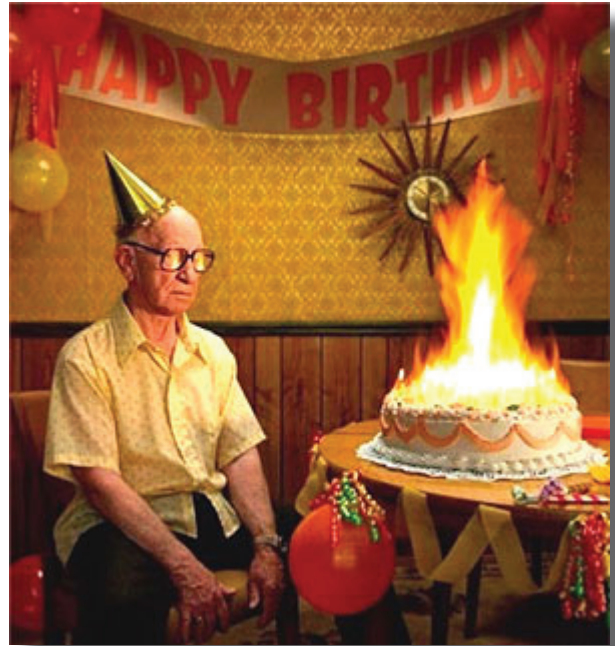
Our newsletter usually contains very little information from USSVI National. It isn't that we don't think this information is important. In fact, we think it is so important that, unlike most other Bases, we don't want to wait for a newsletter publishing date to get the information out to members. Instead, we send out **Flash Traffic** e-mails to get information to members right away.

Past **Flash Traffic** messages are saved but aren't available publically. If any Member wishes a paper copy of any past message, please contact the Base Communications Officer.



August Base Birthdays

RAY LEE GRAYBEAL	1-AUG
ANGUS H. MCPHERSON	1-AUG
HAROLD J. BIDIGARE	3-AUG
THEODOR HUNT	6-AUG
JACK E. MOORE	8-AUG
RAYMOND MARSHALL	8-AUG
ROBERT A. LANCENDORFER	12-AUG
TOM CLONTS	12-AUG
SKIP HICKS	16-AUG
JOHN G. ZAICHKIN	18-AUG
WILLIAM K. GRISSOM	19-AUG
DOUGLAS M. LA ROCK	19-AUG
GEORGE LONG	20-AUG
DANIAL E. LUELLIG	21-AUG
DONALD J. WHITEHEAD	23-AUG
JOHN MANNETTI	26-AUG



WHAT'S NEW ONLINE

Our world-class web page continues to provide Member detailed information as well as an attraction to general audiences. As indicated by the Google Analytics program, we continue to get about 12 - 15 general audience hits a day with the Glossary as the main attraction.

With this in mind, is there any special feature we should make more prominent? Let me know. I value your input.



A Boat's Underwater "Eyes"



The basic design for the modern periscope was perfected by the industrialist Sir Howard Grubb in Britain. His father founded a Dublin telescope-making firm, which Grubb eventually inherited. Renowned for his optical expertise, Grubb was commissioned to develop periscopes for the British Royal Navy's new Holland-designed submarines in the early 1900s. Improving upon Lake's omniscope design, Grubb eventually perfected his own version during World War I, which was installed on the majority of the British Royal Navy's submarines, and on several U.S. Navy boats. The Grubb periscope and subsequent variants remained the submarine's only visual aid for over fifty years, until underwater television was installed aboard the first nuclear-powered submarine, USS Nautilus (SSN-571).

From these early days through World War II, various improvements were made to periscopes, including the ability to rotate and be retracted into the hull. This allowed periscope tubes to become longer while the diameter was decreased to reduce wake. Around 1911, Dr. Frederick O. Kollmorgen proposed the introduction of two telescopes into the periscope, instead of a series of lenses. This allowed the window at the top of the periscope to become a simple piece of glass, as opposed to a prism, which in turn allowed for a much smaller head. The telescopes also made it easier to develop tubes of various lengths because of the lack of intermediary lenses. In 1916, during World War I, Kollmorgen formed the Kollmorgen Corporation, which quickly became the dominant U.S. periscope manufacturer. The two-telescope design was tested during

the war, and became standard

for periscopes into the modern day.

In the late 1930s, submarine operators convinced the Bureau of Ships to develop a new type of periscope that eventually became the "needle nose" Type 1 attack design. This featured a tube that tapered at its head to reduce the surface wake. Recognizing that by this time aircraft were a major threat to submarines, Kollmorgen in 1940 offered a modified Type 1 periscope, dubbed the Type 2. The Type 2's field of view extended to 90.5 degrees of elevation, which enabled the attack periscope to cover the entire sky. The Type 3 designation was used for earlier large-head search periscopes, but this was replaced in World War II by the Type 4 night periscope, which featured a much fatter head (for greater light-gathering power) and a shorter tube (to reduce loss of light inside). A major innovation during this period was the advent of quality periscope photography. Throughout

the course of World War II, most submarines sailed with two instruments – an attack periscope and a search/night periscope. The Type 2 periscope could only operate during daylight, but it was known for superb optics and minimal wake. Improvements were made for greater depth, improved optics and optical coatings, and photo capabilities, and it remained in use through the 1990s.

By the 1950s, evolutionary improvements to the Type 4 design resulted in the Type 8 periscope. Frequent modifications during the decades since have made it one of the primary "hull-penetrating" periscopes in the fleet today, used on all USS Los Angeles (SSN-688)-, USS Seawolf (SSN-21)-, and USS Ohio (SSBN-726)-class boats. The Type 8 periscope features multiple levels of optical magnification, a day-and-night viewing capability, and an antenna system for EHF Low Data Rate (LDR) satellite communications.

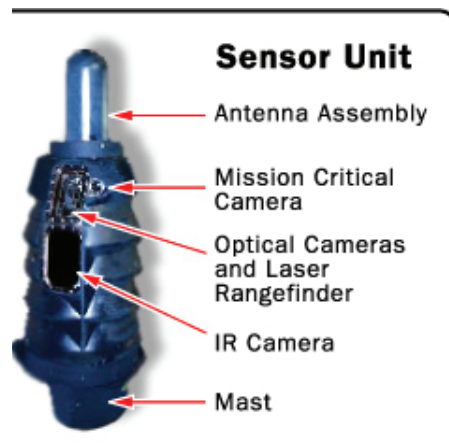
Also in the 1950s, a special stabilized periscope, the Type 11 "star-tracker," was developed specifically for ballistic missile submarines to facilitate the more accurate navigation needed for missile launches. It was designed to take azimuth sightings of stars to update the planned Ships Inertial Navigation System (SINS), and it was the first periscope developed specifically for the nuclear-powered age.



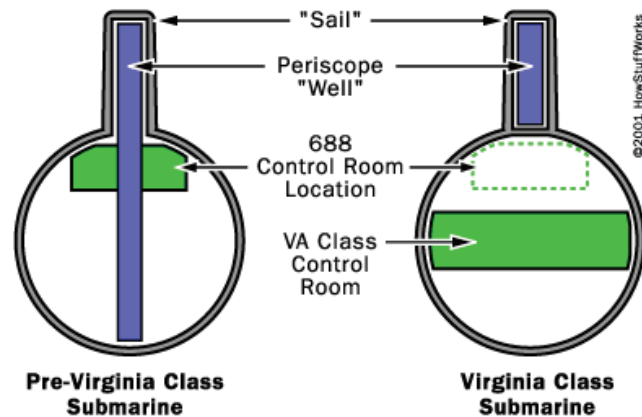
An officer aboard USS Bullhead (SS-332) "dancing with the gray lady." This photo was taken during a Pacific war patrol in the spring of 1945.

Kollmorgen's Photonics Mast, the next generation in submarine optics. The infrared camera is located in the lower rectangular housing, while the optical cameras and laser range finder are located directly above. To the right is the mission critical camera, and the mast head is topped by the antenna assembly.

With the advent of the Los Angeles-class fast attack submarine design in the late 1960s, the Navy developed a new attack periscope, the Type 18, which offered 18-times magnification, as opposed to its precursor's eight. Kollmorgen again won the contract to design and build the periscopes, partly because their design allowed using a camera without removing the periscope's face-plate. This design eventually permitted the use of television cameras, whose images can be displayed throughout the submarine and recorded. The Type 18 periscope is one of the primary hull-penetrating periscopes in the fleet today, used on all Los Angeles- and Seawolf-class submarines. Important features of the Type 18 include multiple magnification levels, single-axis stabilization, digital photography, low-light image intensification, color television, and day-and-night viewing capabilities. The Type 18 periscope is currently undergoing upgrades for a video package known as SUBIS (Submarine Imaging Subsystem), a set of analog video and digital still cameras that record the view from the periscope and provide image enhancement software for image analysis.



Although the Type 18 represents the current state-of-the-art in U.S. submarine periscopes, the Navy's new USS Virginia (SSN-774)-class submarine will be getting a completely new set of eyes. Virginia's AN/BVS-1 Photonics Mast has replaced the traditional optical lenses and prisms of conventional periscopes with electronic imaging equipment.



Each Virginia-class submarine will have two photonics masts that do not require physical penetration of the ship's hull, but instead "telescope" out of the sail. Importantly, this allows Virginia's Control Room to be moved from the cramped first deck to the more spacious second deck. Additionally, there will be no "gray lady" to dance with – or take up valuable control-room space – since the customary periscope in its below-deck well gives way to a fiber optic system that carries images from the photonics masts to two workstations and a commander's control console, each equipped with two flat-panel displays and a keyboard, trackball, and joystick. The masts are equipped with three cameras – color, high-resolution black-and-white, and infrared – in addition to a mission-critical control camera in a separate, pressure-proof and shock-hardened housing

and a laser range finder that will provide accurate ranges to targets and aids to navigation. All of these sensors are housed in the mast's rotating head.

CAPT David Portner, the Program Manager for the Imaging and Electronic Warfare Program Office, notes that "the Photonics Mast is one of the revolutionary systems aboard Virginia. Its digital imagery design eliminates the need for a major hull penetration required for optical periscopes. Not only does it keep the CO from having to focus entirely on the top-side scene, but it has allowed the ship designers to break the hard link between the sail and the Command and Control System Module (CCSM). In doing so, Virginia's sail has been moved forward for improved hydrodynamics and its CCSM relocated down one deck and aft, affording this critical space more room and an improved layout. The non-penetrating design also increases hull integrity and simplifies maintenance."

In a hundred years, submarines have progressed from having to porpoise at the surface to see outside, through crude viewing devices fixed in height and direction, to today's hull-penetrating, multi-purpose, camera-equipped scopes, which allow the boats to get a clear view of the outside world from up to 60 feet below the surface, while revealing almost nothing of themselves. And yet, today's periscopes are based on the same fundamental principles of prisms, lenses, and telescopes that their predecessors exploited a century ago. But radical change is on the way. With the first of the new Virginia-class submarines already in the water, the submarine's capability for viewing the world above the surface is taking off in the first fundamentally new direction since the days of John Holland and Simon Lake.





Eternal Patrol August 29, 1949

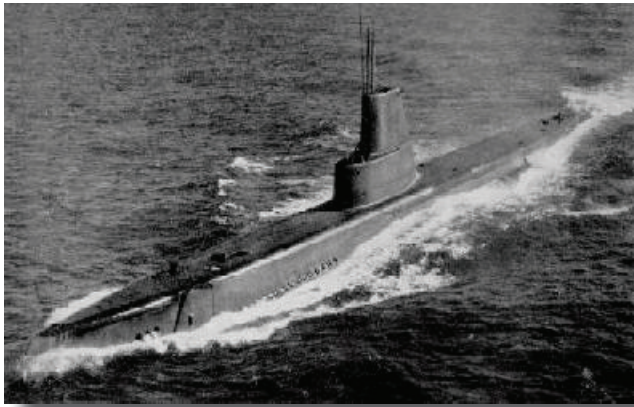
Editors Note: Less we forget, each month, one boat on eternal patrol will be highlighted in this newsletter. Sailors, rest your oars.

The Final Patrol

Lord, this departed shipmate with dolphins on his chest
Is part of an outfit known as the best.
Make him welcome and take him by the hand.
You'll find without a doubt he was the best in all the land.
So, heavenly Father add his name to the roll
Of our departed shipmates still on patrol
Let them know that we who survive
Will always keep their memories alive.



USS Cochino (SS-345) 29 August 1949 1 man lost



On the morning of 25 August 1949, during a training cruise north of the Arctic Circle, the submarine Cochino (SS-345), in company with Tusk (SS-426), attempted to submerge to snorkel depth in the Barents Sea, but the crashing waves played havoc with these efforts. At 1048, a muffled thud rocked Cochino and news of a fire in the after battery compartment quickly passed through the boat.

A second explosion soon followed and CDR Rafael Benitez, the commanding officer, ordered all of the crew not on watch or fighting fires topside. During this orderly evacuation, however, Seaman J. E. Morgan fell overboard. The 48° water and the swells created by the 20 to 25 mph winds rapidly exhausted the sailor, so Chief Torpedoman's Mate

Hubert H. Rauch dove into the chilly sea to keep him afloat before Culinary Specialist Clarence Balthrop pulled him to safety.

At 1123, another explosion badly burned LCDR Richard M. Wright, the executive officer, and left him temporarily in a state of shock, as he moved to sever the connection between the after and forward batteries on board Cochino to stem the generation of dangerous hydrogen gas. Thanks in part to a safety line run by LT (j.g.) Charles Cushman, Jr., by 1208, 60 men huddled, cold and wet, on the bridge and deck of the submarine. Almost all of them had not had time to dress properly for the stormy weather.

It was no better for those who remained below, as men began to pass out from the gas and toxic smoke. At 1230, Tusk attempted to come alongside, but the swells and wind made this nearly impossible, but she did manage to send

USS Cochino (SS-345), originally a Balao-class, was a GUPPY II conversion at the time of her accident. This conversion included the following:

Externally:

- Deck guns and associated containers were removed.
- Entire bridge/shears structure was streamlined to reduce drag.
- The periscope and radar mast support structure was enclosed
- The faired structure which now contained the Conning Tower and mast support was now called the "Sail."
- The top of the sail was bulged out to the side to make room for SV-radar screen.
- Capstans and deck cleats were made retractable and deck rail stanchion supports were inset in the deck. All deck railings were removed when the boat rigged for dive.
- The Fleet Boat bow was removed and a rounded bow replaced it. The "GUPPY Bow."

Internally:

- Ammunition magazine was removed from under the galley and the chill and freeze boxes were moved to the after battery upper level.
- Battery power was increased with installation of four 126 cell batteries. One and one-half of the batteries were put in the forward well in the lower level of the forward battery. One-half of a battery was put into the forward end of the pump room. Two complete batteries were placed in the after battery well.
- The battery cells (GUPPY Battery) had more, thinner plates and would generate higher amps for a longer time. However, this battery had a shorter life span, longer charging time, and required cooling water to be circulated through the battery terminals and termination bars.
- Sonar was increased to include the BQR-2 or 2A with hydrophones mounted under the forefoot in a chin mount and inboard electronics housed in the forward torpedo room.
- Two or four high speed motor and reduction gear configuration were replaced by slow speed motors.
- The batteries could be connected in series or parallel and the combination possible from this arrangement gave a wide speed range.
- All open front switchboards were replaced with enclosed units.
- 120 volt 60 Hz AC and 120 volt 400 Hz electrical systems were introduced for lighting and electronics.

The addition of three new masts, snorkel induction, snorkel exhaust and ESM mast, required more room in the upper portion of the sail. The structure was changed to support the new masts.

All boats converted during the GUPPY II program which had high speed drive motors with reduction gear had these replaced with low speed direct drive motors of 2500 hp per shaft.

needed medical supplies to Cochino by raft.

CDR Benitez decided that he needed get word of the dire conditions on board to Tusk and the Commander, Submarine Development Group Two. Aware of the perils that awaited him, ENS John Shelton agreed to make the attempt as did a civilian engineer on board, Mr. Robert Philo. After receiving confirmation of Philo's desire to make the journey, CDR Benitez ordered the men lowered into the angry sea, but their raft immediately overturned. Sailors from Tusk pulled Shelton and Philo alongside as they desperately clung to the raft, but the waves that swept across the submarine prevented them being brought on board.

Seaman Norman Walker jumped into water to help both men onto Tusk, but not before the waves slammed Philo's head against the hull. By this time, fifteen men from that submarine stood on the deck handling lines and attempting to resuscitate Philo, when an unusually large wave broke one of the lifelines and swept eleven members of the Tusk crew and the still unconscious Philo overboard

In addition to Philo, the sea claimed the lives of six of Tusk's crew including Electrician's Mate John Guttermuth whose inflatable life jacket had burst upon hitting the water which left only his boots inflated as he attempted to save the unconscious Fireman Robert F. Brunner, Jr. He fought desperately to keep his head above water, but eventually drowned in the frigid sea with his boots still visible above the water. A kinder fate awaited LT (j.g.) Philip Pennington when LCDR George Cook dove over the side to pluck him from the unruly waves.



Of two life rafts thrown to those who been swept overboard, one was recovered empty, but the other contained Torpedoman's Mate Raymond Reardon who suffered gravely from exposure to the elements. Engineman Henry McFarland entered the water but could not reach the raft then Seaman Raymond Shugar overcame the raging waters long enough to attach a line to Reardon who was subsequently rescued.

By 1800, Cochino had regained power and signaled Tusk that she could make ten knots but had no steering. It appeared the crippled boat might make it back to Norway. However, at 2306 she suffered a fatal blow in the form of yet another battery explosion. Tusk loosed her ready torpedoes then transferred the 76 officers and men from the stricken submarine. CDR Benitez, the last to leave Cochino, departed only minutes before the boat slipped beneath the waves. These selfless acts of heroism provide an example of the dedication and comraderie that animates our submariners. Only their bravery and professionalism kept the tragic toll from being far higher.



- John Philip Holland built several submarines before the USS Holland, which became the first undersea craft commissioned by the U.S. Navy. The Holland was accepted on April 11, 1900 for a price of \$150,000. Today's nuclear powered submarines cost in excess of \$30,000,000 exclusive of the power plant.
- The first boat known to have been navigated under water was built in 1620 by a Dutchman, Cornelius Van Drebbel. Van Drebbel is said to have developed a chemical which would purify the air and allow the crew to stay submerged for extended periods.
- Alexander the Great (356 to 323 B.C.) ruler of Macedonian and conqueror of the known world in his time, is the first person known to have descended into the sea in a vessel of any kind.
- Over three hundred years ago, Mother Shipton, famous English prophetess, predicted the coming of the submarine when writing, "under water men shall walk, shall ride, shall sleep, shall talk."
- Records of attempts to utilize submarine warfare go back to the earliest writings in history. Herodotus (460 B.C.), Aristotle (332 B.C.) and Pliny, the elder, (77 A.D.) mention determined attempts to build submersibles.
- Interests in submarines extends to royalty and presidents. The King of England and the King and Queen of Spain are among those who have made submerged cruises in submarines. As a result of a trip in an early United States submarine, President "Teddy" Roosevelt ordered extra compensation for personnel serving in the "Silent Service." President Harry Truman made a 440 foot dive in a captured German submarine. The first President to cruise aboard a nuclear submarine was President Eisenhower who rode the USS SEAWOLF out of Newport, Rhode Island on September 26, 1957.

Old Tech Isn't The Answer

By W. J. Holland, *Defense News*, June 26, 2011

The June 13 commentary (in *Defense News*) by Gary Schmitt and Richard Cleary, "U.S. Navy Needs Diesel Submarines," contains a number of factual mistakes and, in the view of naval strategists, several errors of judgment.

The first and most significant error is to consider the ship to be powered by diesel engines. In an operational situation, these submarines rely on a battery with all the difficulties and concerns attendant to that type of power source. As anyone who has had an important phone conversation end in midstream because a cell phone battery ran out of power can attest, battery capacity is a major concern when operating equipment powered by such a source.

Submarines operating on a battery at low speeds are quiet but cannot avoid the eventual need to charge the battery. Air independent propulsion does not provide propulsion - these devices support the housekeeping. If the submarine needs to go somewhere other than where it is, the battery or the engine must be used. Proceeding at any appreciable sustained speed must be done on the snorkel (by the engines), or if the battery is used, it must be followed by a charging evolution, again using the engines.

When the engines are running, the battery-powered submarine sensors become limited and its stealth is compromised.

Schmitt and Cleary err when they suggest that the difference in size makes the smaller battery-powered submarine more maneuverable in narrow and shallow waters than a submarine that is nuclear powered. This judgment reflects their failure to understand the physics involved. The size of the submarine is of less importance than the forces exerted by the control surfaces that in turn are related to speed through the water.

All submarines operate around a keel depth of 50 to 65 feet, depending upon sea state and periscope/mast extension. In shallow waters, e.g. 100 feet, the 12-foot difference in draft between a battery powered boat (Kilo = 20 feet) and a big nuclear-powered attack boat (Virginia = 32 feet) adds little to the challenge of maintaining ordered keel depth.

Having power to give the rudder and the planes the lift needed is the real key to operating in shallow waters, not the physical size of the boat. In this situation, the superior power of the nuclear submarine enables the ship to be much more maneuverable. The superiority in handling and sea-keeping of nuclear-powered versus battery-driven submarines will be attested to by anyone who ever has served as the diving officer of both.

Being able to hide on the ocean floor is an idea that tries to turn a defect, short endurance, into an advantage. A sub "hides" when submerged but, when bottomed, becomes blind and mostly deaf.

Whenever detection is suspected, the appropriate tactic for the submarine is to clear the datum, meaning to leave the area in which the sub was detected, as expeditiously as possible. For a nuclear-powered submarine, this is a matter of minutes, for a battery-powered submarine, hours.

Bottoming provides anti-submarine warfare (ASW) forces a stationary target - solving a hard part of their problem. Bottoming is a last and desperate resort to be adapted only when the battery capacity is no longer sufficient to provide propulsion power.

Schmitt and Cleary's inference that battery-powered submarines are in some way "better platforms for many of the tasks the Navy faces today" simply flies in the face of all evidence from the real world.

In their list of missions, "close-in intelligence, surveillance and reconnaissance, special operations and blockade and mining," there is nothing a battery powered submarine can do which cannot be done as well or better than by a nuclear-powered submarine. Their prediction of future exploitation of unmanned underwater vehicles will require stowage space and power sources on the parent submarines, power that is plentiful in nuclear plants but precious in diesel-electric ones.

If the United States needs more submarines to provide practice for ASW training, buying new battery boats doesn't make sense when there already exists a plethora of operational submarines, our own and from friendly nations.

Hampered by short legs and low speeds of advance, today's conventionally powered submarines' effectiveness and utility are limited to narrow seas or coastal waters. These attributes hamstringing their utility for the United States where the deployment horizon is far beyond the Gulf of Mexico.

Their small size limits their weapon capacity and thus their potential for strategic employment. Their small crews, standing port and starboard watches plus regular "General Quarters/All hands to action stations" for weeks, become as limiting on these small submarines' endurance as their fuel supply or battery capacity.

The crews of modern submarines are expensive assets. Not employing this valuable asset with the best tools possible runs counter to every principle in good industrial and technological practice.

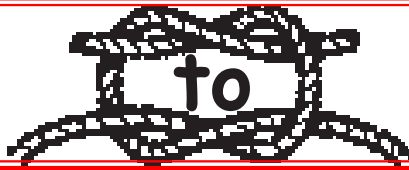
Investing in old technology occasionally may have merit when funds are plentiful, but when investment capital is at a premium, as it is now, that capital ought to be invested in technologies and equipment that promise rewards over the next 50 years, not questionable returns over the next five. Suggestions to buy battery-powered boats belong with suggestions to try airships - interesting, perhaps, but their day is done.

W.J. Holland, a retired U.S. submarine officer and occasional consultant. He is former director of strategic and theater nuclear warfare on the staff of the chief of naval operations.



- Dollar for dollar and man for man, the submarine is the country's most economical weapon. Comprising only 1.6 percent of the Navy's World War II personnel, the submarine service accounted for 55 percent of all enemy shipping destroyed.
- Leonardo da Vinci, the Florentine Renaissance inventor and artist, developed plans for an underwater warship but kept them secret. He was afraid that it would make war even more frightful than it already was.
- Many instances of submarines being 'caught' by fishing vessels are on record. The NAUTILUS, world's first nuclear powered vessel, was caught in a fish net and towed the fishing vessel several miles before the situation was cleared up. There is one instance of a submarine being captured by an abandoned balloon, and on another occasion a submarine rescued a blimp and towed it to safety.
- A church in Kyoto, Japan calls its congregation to worship with a bell from a submarine. The bell, from the submarine USS RAY was purchased for the church, and was transported to Yokosuka, Japan by another submarine, the USS RONQUIL.
- For entertainment on U.S. submarines movies, television, ice cream machines and stereo music players are available. The USS SEAWOLF also had an electronic organ. There have been instances of boxing matches held onboard, and the crew of one submarine had a kite flying contest from an anchored submarine.
- Modern submarines can travel faster submerged than they can on the surface. They can fully submerge in less than a minute.
- Robert Fulton, inventor of the steamboat, was an avid submarine enthusiast. He built several submersible warships, one of which was known as the Nautilus.
- The rig for dive in a modern submarine requires the crew conduct more than 225 individual and operational checks.
- The submarine was not generally recognized as a legitimate instrument of warfare until the Civil War.
- Only the cream of Navy manpower is considered acceptable for submarine service. Volunteer applicants are given exhaustive physical and psychological screening before being accepted for training. Those who make the grade are trained in the Submarine School at New London and aboard operating submarines. After graduation from the Submarine School and actual service in submarines, those who pass all tests may wear the Dolphins, insignia of the submarine service.
- Both nuclear and modern diesel powered submarine are now equipped with a breathing device known as a snorkel, which permits the vessel to draw fresh air from the surface while running submerged.
- One of the first women to submerge in a submarine is believed to have been Clara Barton, founder of the American Red Cross.
- Submarines have been invented which have been propelled by cars, sails, treadles, hand operated screws, clockwork, springs, steam stored in tubes, chemical engines, compressed air, stored gases, electric motors, and nuclear power.
- In clear water, a submerged submarine can be spotted from the air at depths up to 100 feet.
- The self-propelled torpedo, which gets its name from the eel TORPEDO ELECTRICUS, was invented by Robert Whitehead in 1868, a number of years before a practical submarine was developed.
- Insignia of the Navy's submarine service is a submarine flanked by two dolphins. Dolphins, or porpoises, the traditional attendants to Poseidon, Greek God of the Sea and patron deity of sailors, are symbolic of a calm sea, and are sometimes called the 'sailors' friend. In addition to the Dolphins, those World War II submariners who participated in successful combat patrols may wear the coveted Submarine Combat Insignia.
- The first submarine which actually sank another enemy vessel under combat conditions was the CSS HUNLEY built during the Civil War. The Union frigate HOUSATONIC on blockade station off Charleston, S. C. was the victim. The incident occurred on February 17, 1864.

Shipmate



Shipmate

Now, THIS AIN'T NO SH*T . . .

We're still looking for stories! All of us have heard the one about the difference between a fairy tale and a sea story. The fairy tale starts, "Once upon a time," and a sea story starts, "Now this ain't no sh*t!"

Well, that's what we are looking for; sea stories. And they only need to be as true as a sea story ALWAYS is!

So send something in. Here are the rules (or not, whatever):

1. We can use your name or not: your choice just let me know.
2. Grammar and spelling DO NOT COUNT. I will edit and change just enough to make it somewhat readable!
3. Remember, this is from "boat" sailors to "boat" sailors. BUT, since this publication may fall into skimmer hands (or worse, decent civilians!) I may have to substitute punctuation marks in place of letters in certain words, as in the title.
4. There is absolutely no limit on how many you can send in. I will publish AT LEAST one each month as we get them.

So send them to:

Chuck Emmett

communications@perch-base.org

or

7011 West Risner Road
Glendale, AZ 85308.



**SHIPMATE TO SHIPMATE
STORIES THAT ARE
"ABSOLUTLY, POSITIVELY, THE TRUTH!"**

It was the late 60's and the USS Tullibee SSN597 was assigned to do an ASW op with a diesel boat off the east coast between the mainland and Bermuda. Tullibee headed for Bermuda a few days early to give us a chance for some rare "foreign" port liberty and also some warm water to christen all the newly qualified and/or promoted crewmembers, you know the drill.

As usual there was no shore power available so all the nukes went into "Tullibee Power & Light" mode which was port and starboard watch section, one day on, one day off. As luck would have it a hurricane was cranking up around the Virgin Islands and veered north as we made port. The track was to take it right up along the eastern seaboard right through our scheduled operating area so the op was postponed so the diesel boat could stay in port until the storm passed. This meant we HAD to stay in Bermuda until the storm passed, so a 2 day port call turned into a week. The only downside was that we had to be ready to get underway each day until we got the word, usually about 13:00, from SUBLANT that the op was not going to happen that day. So for a week we pretty much had the good life, the beach, tours in town, the bars, etc.

One night I'm standing upper level watch, remember us nukes are still running the engineering plant just not the propulsion part. As I'm shooting the shit with the EOW I keep hearing the hydraulic pumps cycle. At first it didn't register that we weren't supposed to be using the hydraulics for anything in port. After looking for leaks in the engineering spaces we called the below decks watch to see if he knew what was up. All he said was "look up the after hatch". I climbed up and found the "problem".

It seems that the Captain had returned from an evening on indulging at the local O-Club and returned with most of a case of beer. Knowing he couldn't bring it on the boat he was sitting on a bollard finishing it off. Anyone else returning to the boat was recruited to help him finish it. As he was sitting there on that balmy night he thought it would be fun to take a dip so he climbed up on the fairwater planes and dove in. He thought that was great and being, at least in his mind, a jock he started challenging everyone else drinking with him to dive in as well. As the game progressed more and more challenging dives were made. After someone does a flip off the planes the old man feels he's losing his own challenge, that's when it hits him, the fairing on the top of the ECM mast was pretty flat and he had the

bright idea to dive from it. He climbs up and calls down to the below decks watch to “raise the ECM” and dives off. Now it’s on and everyone is challenged to dive from the raised ECM mast. Up and down it’s going, getting more use than a northern run. This continues until the XO returns. Not being much of a drinker he has the clearest head on the dock and realizes its only a matter of time before one of the drunks slips as the mast is being raised and makes a whole bunch of paperwork for him. He pulls the skipper aside and talks some sense into him. The remaining beer is chugged and the party wraps up and the hydraulic plant goes quiet again.

Submitted by Rick Simmons



- Traditionally, United States submarines have been named after fish and other marine creatures. One exception was the Navy's first submarine HOLLAND which was named after its inventor, John Philip Holland. Today, ballistic missile submarines are named for famous American patriots, with the newest class, the OHIO class, named after states. The LOS ANGELES class of attack submarines are named for United States cities.
- Records for enemy shipping sunk by U.S. submarines during World War II are held by two boats built by Electric Boat. The USS FLASHER sank 100,231 tons of Japanese shipping, while the USS TAUTOG holds the record for the most ships - 26.
- Per cubic inch, there is more science packed into a submarine than into any other warship. Submariners say 'There is room for everything aboard a submarine except a mistake.'
- In 1921, a United States submarine, the R-14, having run out of fuel at sea, rigged sails from blankets, hammocks, curtain rods and the ramrod of a 3-inch gun, and sailed 100 miles to port at a speed of two knots.
- More decorations for valor have been awarded, per man, to the submarine service than any other Navy Branch.
- Habitability is heavily stressed in the construction of modern submarines. Specially designed color schemes, mechanical conveniences, air conditioning, and the best chow in the Navy are supplied to make the vessels more livable. A full time staff is maintained by Electric Boat Division to work out 'human engineering' problems.
- A typical modern submarine may require as many as 2,000 working drawings for the more than 7,000,000 items used in its construction. Blueprints from these drawings if placed end to end would make a strip 250 miles long.
- The first periscope used by the United States Navy was not built for a submarine. The ironclad monitor OSAGE utilized a periscope to discover a Confederate cavalry unit taking cover behind the high banks of the Red River in Arkansas.
- In World War II the Germans lost 782 submarines, the Japanese lost 130, and the United States lost only 52 submarines. Twenty-three of the Japanese subs lost were victims of the American Submarine Service.
- Submarine tenders, or 'mother ships' of the U.S. Navy usually bear the names of characters of mythology, the names of submarine inventors, or the names of persons who have made contributions to the Submarine Service.
- A submarine, the TURTLE, was employed by the American revolutionary army to attack the British. It was built by David Bushnell at Saybrook, Connecticut, just a few miles from the present site of Electric Boat Division of the General Dynamics Corporation, and the U.S. naval Submarine Base.
- George Washington Endorsed the use of the first American submarine, David Bushnell's TURTLE, during the Revolution. Following the vessel's attack on a British man-of-war, he discussed the potential use of submarines in a letter to Thomas Jefferson.
- USS GEORGE WASHINGTON, the world's first ballistic missile nuclear powered submarine, constructed in record time, set a record of its own by remaining submerged 67 days on its initial Polaris missile deterrent patrol in the Atlantic.
- Nautilus has long been a popular name for a submarine. Some of the more famous of these are Robert Fulton's NAUTILUS (1800), Jules Verne's fictional Nautilus, and the NAUTILUS of Sir Hubert Wilkins in which he attempted a voyage to the North Pole under the ice (1931). There have also been three U.S. submarines of that name, including the world's first nuclear powered submarine built by the Electric Boat Division.
- Long considered a versatile and deadly instrument of war, the submarine has broadened her capabilities with the adoption of nuclear power. Today the submarine serves as a ballistic missile platform, early warning station, killer of surface and underwater vessels, scout, coastal raider troop transport, supply ship, mine layer, and seaplane tender.
- The United States submarine USS TRITON was fitted with twin reactors and was considered the longest submarine ever built until the advent of the OHIO class. The TRITON was designed for a surface displacement of 5,900 tons. Large submarines of other countries have been the Japanese I-400 (5,220 tons), and the French SURCOUF (2,880 tons).
- The USS NAUTILUS was the first submarine with a satisfactory single plant that can be used for main propulsion both surfaced and submerged.

Return To:

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Glendale, AZ 85308
E-Mail: communications@perch-base.org

<http://www.perch-base.org>



NEXT REGULAR MEETING
12 noon, Saturday, August 13, 2011
Dillon's Restaurant at Arrowhead
20585 N. 58th Avenue
Glendale, AZ 85308-6821