

# ALLHANDS



in this issue:

NAVY FUEL ON A MOUNTAIN  
Squeezing Oil From Stone

**APRIL 1975**



# ALL HANDS

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Front cover: USS Spruance (DD 963), newest class destroyer, is silhouetted on a cutaway view of actual oil shale. Photo by PH1 Richard Pendergist.

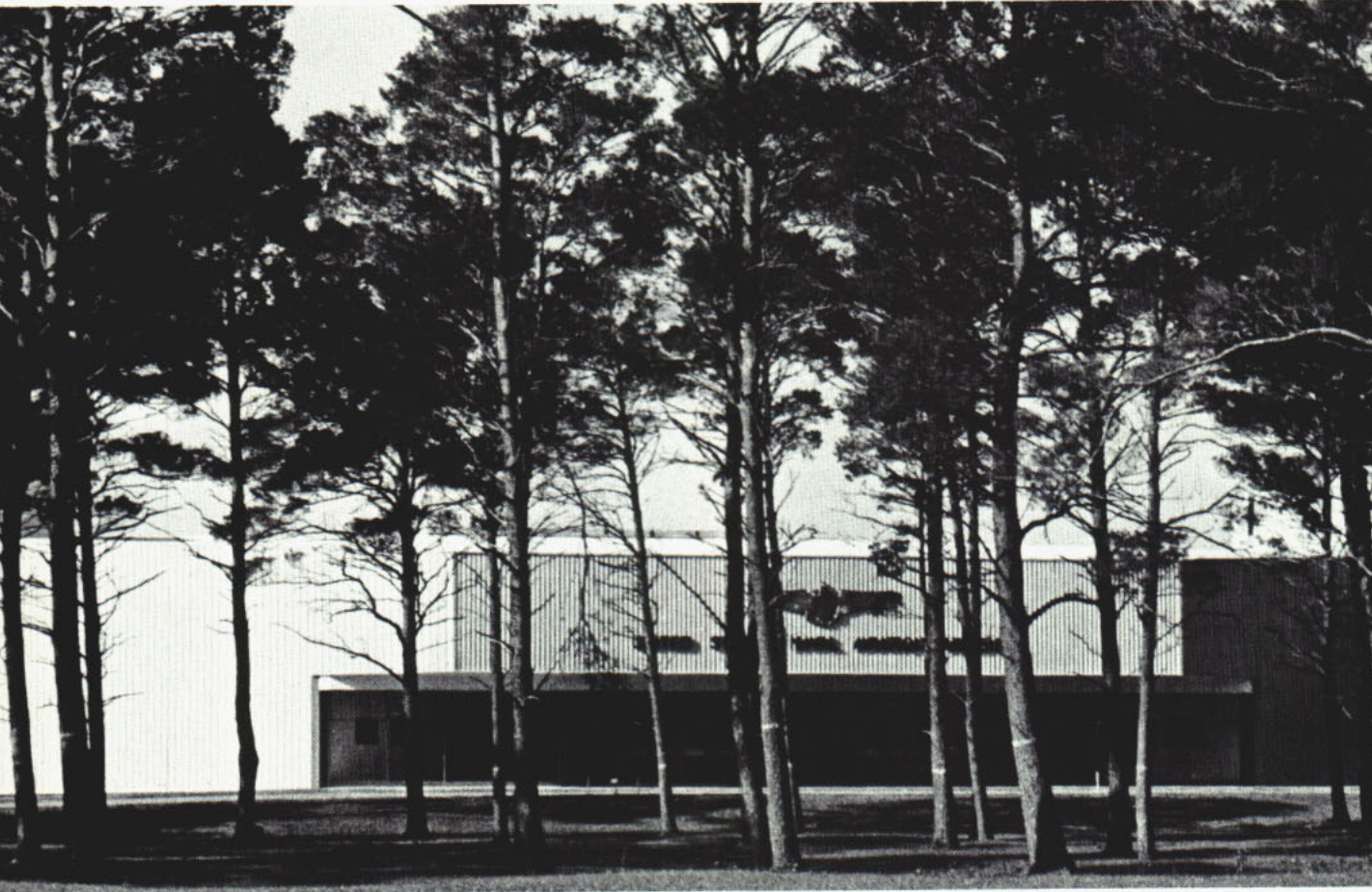
Back cover: Official logo for Navy's 200th birthday year. Art by DM2 Lloyd Marshall. The insignia itself is symbolic of the proud traditions of 200 years. The 13 stars of the Navy's Birthday insignia represent the original colonies whose Continental Congress formed the Navy. Fifty links on the chain represent the modern states, and the anchor recalls the strength and bravery of mankind inspired by the sea.

Inside front: This remarkable photograph of an F-14A Tomcat fighter aircraft in flight was captured by PHAA Flynn Adams, USN.

# WELCOME ABOARD

## *The New*

# NAVAL AVIATION



Sunday, 13 April, promises to be a gala day and provides another milestone event in the history of naval aviation—the U. S. Navy will receive a brand-new \$1.8 million Naval Aviation Museum, completely paid for and ready for visitors.

On that date, the new museum will be dedicated and officially opened before an audience of civilian and military leaders. Included will be dozens of naval aviators who, since 1911, have contributed to the events and artifacts recorded or on display within the museum's walls.

Accepting the keys to the museum for the U. S. Navy will be J. William Middendorf II, Secretary of the Navy. Presenting the keys will be retired Vice Admiral Robert B. Pirie, Chairman of the Board of the Naval Aviation Museum Association, Inc., the civilian organization which spearheaded and conducted the drive for funding of the structure.

Designed by New York architect Paul K. Y. Chen, the museum at opening will contain only 70,000 square feet of the 260,000 square feet planned for eventual construction. Three additional increments of the build-

# MUSEUM



ing are planned for construction, as funding becomes available.

Actually, the museum has been open informally since November and thousands of visitors have already had a sneak preview. Still, there was an expedited program underway during the last few months to complete the lighted wall displays, including the four main corner features on the ground floor dedicated to early aviation pioneers; famous leaders of naval aviation; the early aircraft carriers; and the Navy's modern role in the space age.

Other main wall space tells the story of naval aviation from its infancy and birth on 8 May 1911, through the first World War, the 1920s, World War II, the Korean conflict, Vietnam, and the space age. A *Stearman*, an N-9H, and an MF-boat stand in mute yet authoritative silence while the walls proudly project the glories of decades past.

One thing is quite obvious when viewing the structure—a lot of planning went into it. According to retired Captain Grover Walker, the Museum Director, the idea from the very beginning was to develop a structure which would facilitate orderly expansion until it reaches its ultimate size of approximately 260,000 square feet.

Displaying a chart with plastic overlays, Captain Walker demonstrated how each stage will be added in such a manner as to maintain the architectural scheme. The plan is to continue building as the funds become available.

Therefore, each phase will be free of mortgages and financial burdens when completed and turned over to the Navy. Admittedly, in these inflationary times, that's a gigantic undertaking, but it's a determined and set course for those involved.

Much of the building is dedicated to open floor space—in size about the area of the Naval Academy's field house in Annapolis, Md.—which can probably be used effectively to display some 20 aircraft at one time. There is a second floor or balcony-mezzanine which has been set aside to honor naval aviation's Medal of Honor winners, individual squadrons, and display memorial plaques and the like. This section provides an unobstructed, overall view of the museum's main floor and the exhibited aircraft. These planes are dominated by the huge, rebuilt NC-4, the first of the world's aircraft to cross the Atlantic—and a Navy aircraft at that. (Two other NC flying boats accompanied the NC-4 a portion of the way but did not complete the historic journey.)

The remaining tiled ground-floor space, to the right and left of the glass entrance doors, is given over to office spaces, auditorium and a gift shop.

Suspended from the overhead—beneath the center skylight—is a replica of the A-1, the Navy's first aircraft. Directly under this *Triad*, in effective contrast, is the Skylab command module in which the all-Navy crew of Captain Pete Conrad, Captain Dick Weitz and Captain Joe Kerwin traveled to and from the Skylab in 1973.

The Naval Aviation Museum's real birthday is 14 Dec 1962, when it was established at the Naval Air Station, Pensacola. It was set up to provide a continuing Navy-wide collection of aviation material—planes, flight gear, photos and the like—having historical, educational or inspirational significance. The museum's mission then and now is to "select, collect, preserve and

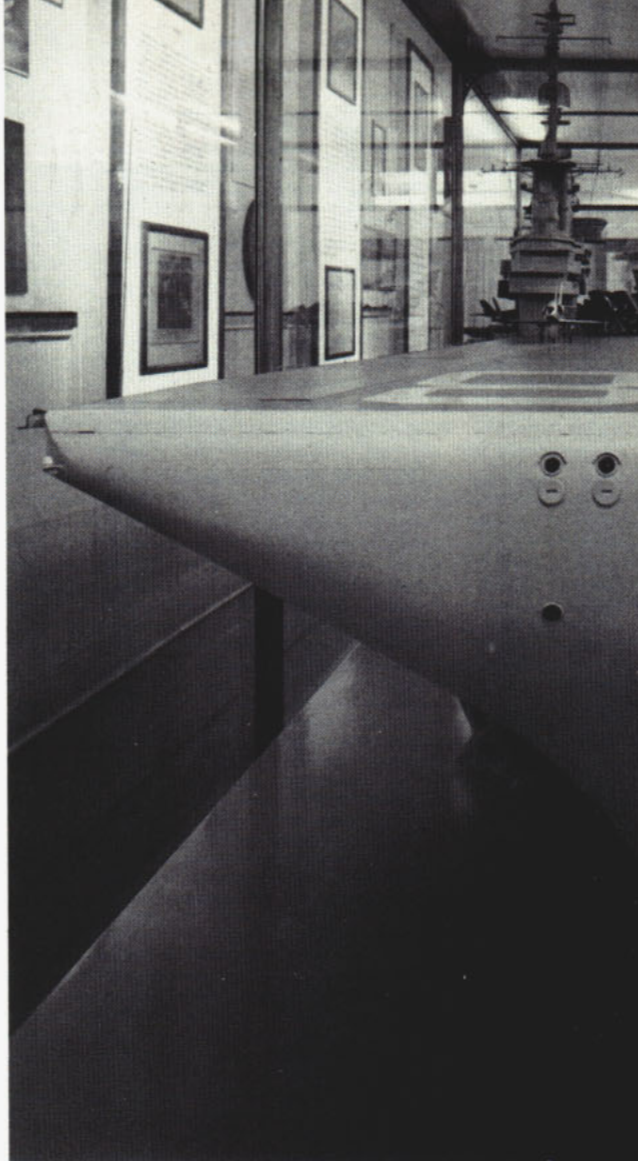
display" appropriate memorabilia representative of the development, growth and historic heritage of United States naval aviation.

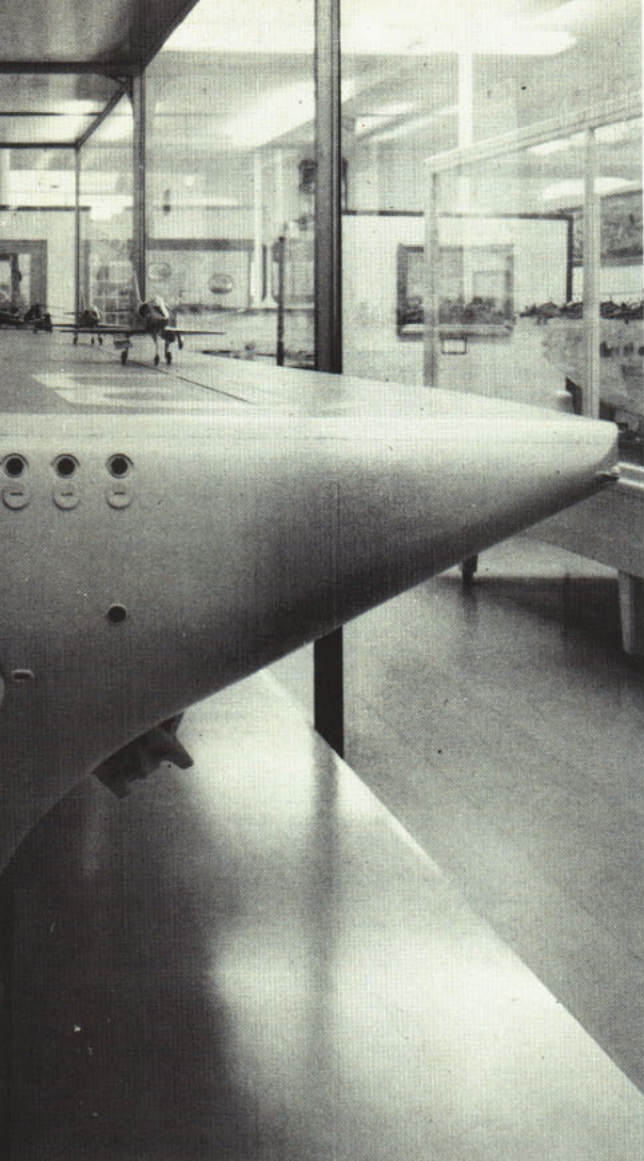
The old museum building, also aboard the Pensacola Naval Air Station, was built during World War II. It was dedicated in June 1963 and was temporary even from its beginnings. The structure soon became inadequate both in size and facilities and it only measured some 8500 square feet (less than one-eighth of the new museum's Phase I floor space). The small structure was rapidly filled.

The new museum, begun in November 1972, will carry the original mission to its zenith—it is, and will increasingly become, a shrine of sorts but, more importantly, a repository of aviation artifacts of primary interest to today's and future generations of Navy people.

Fundamentally, the museum is concerned with its historical and educational significance. Historically, it defines and traces the technological progress associated with notable events, achievements and the association and accomplishments of various individuals. Educationally, the museum signifies a potential for giving the observer a better understanding of vital events and the part those events played in the shaping of naval aviation. It's one thing to see photos and paintings of old aircraft; it's another to stand close to them, realize their size, their bulk, sometimes their fragility and—at the same time—envison the strength of character of those early aviators who flew those machines "by the seat of their pants."

That's where inspiration comes in—along with the tradition, accomplishments and the exploits, even the lives, of those early pioneers of the air.





Money is at the heart of most endeavors of this type. No government tax money is involved, only private and corporate donations have been used to turn the new museum from a dream on paper to a blueprint, then into the final structure. Private donations will continue to be the very lifeblood of the project.

Visitors by the thousands pour into the area each year and new superhighways and service roads make the station easily accessible. The government station on Pensacola Bay—dating back to 1824 when a Navy Yard was created there—is a must for every tourist visiting western Florida. The station is on the Gulf of Mexico and is 50 miles southeast of Mobile, Ala.

Impetus for the modern Naval Aviation Museum was brought about by the late Admiral Arthur W. Radford, an illustrious aviator and the first naval officer to serve as Chairman of the Joint Chiefs of Staff. He was joined by others in forming the Naval Aviation Museum Association, Inc., including retired Vice Admiral Robert B. Pirie, among many others, primarily aviation-minded citizens. It was becoming quite obvious that the old museum was bursting at the seams and there were still many, many famous aircraft which should be acquired. Several aircraft were in the inventory of the Smithsonian Institution, particularly in storage at its Silver Hill, Md., facility, but even the National Air and Space Museum is constantly plagued by space limitation problems. There were also many aircraft held by private individuals who were willing to give the Navy custody of them for exhibition purposes. Aircraft, either old or new, take up a lot of space—probably only railroad engines and associated equipment take up as much space as do static airplanes.

The call went out for public subscription in 1966 to

Left: Model of USS Shangri La and embarked aircraft. Below from left to right: A-1 Triad. NC-4, first aircraft flown across Atlantic. Flight suits and aviators' equipment display. Early fighter.





erect a new and permanent home for the Navy's aircraft and help obtain aircraft from private collections for display. Charter memberships were issued to individuals donating \$1000 or more, organizational memberships have a minimum of \$500, life memberships cost \$100, and "In memoriam" memberships honoring deceased persons also have a \$100 minimum. Annual memberships can be had for \$10. All memberships are engraved on plaques or shields, except annual memberships which are entered only in the museum's log.

Present plans call for putting the more valuable—or fragile, certain extinct or one-of-a-kind—aircraft and replicas inside the building, protected from the elements. The more modern aircraft will be displayed on the grounds, ringing the building complex in a pattern yet to be decided upon. These will be placed on view as time permits.

On another part of the Naval Air Station, near the rework facility, is another plane of 1950s vintage, waiting to take her place alongside the museum's other aircraft. It's a wingless P-5M seaplane covered with thick, black preservative and, up until the last minutes of her journey to Pensacola, she was considered to be in great shape. Then, during the final unloading from the ship which carried her, the contractor let her slip while on the crane and a three-foot fall onto the dock banged the after end almost beyond recognition. The museum may perhaps repair the stern or the damaged section may be cut off and the seaplane could then become a walk-thru exhibit, especially of interest to children.

According to an OpNav Instruction (5750.10B of 5 Nov 1974), the museum's director makes all accessions in the name of the Curator for the Department of the Navy, ensuring inclusion in departmental records and



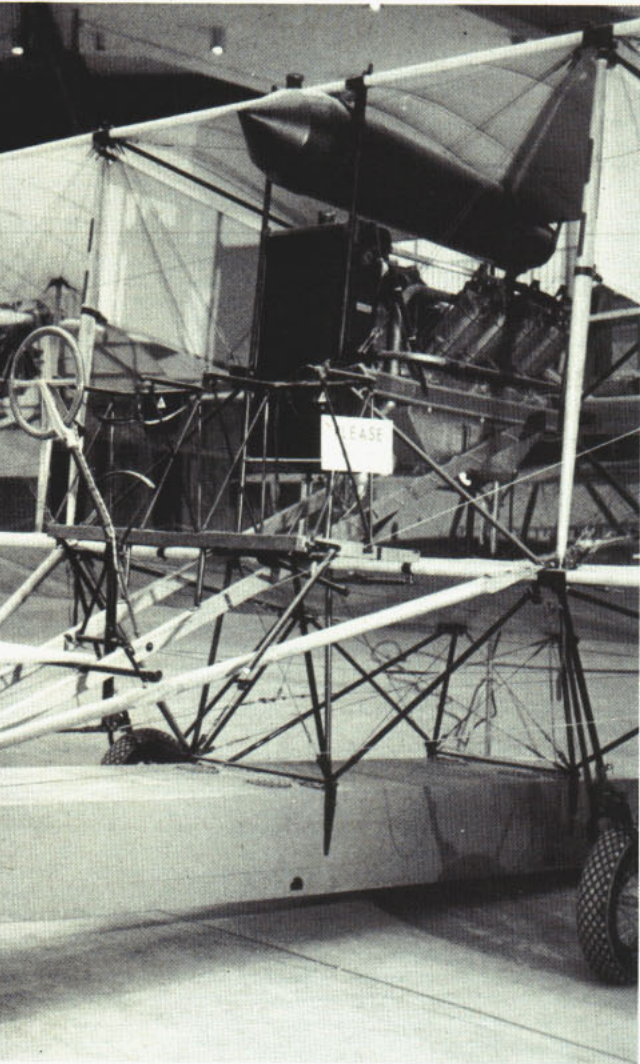
providing a central accountability. Primarily, the basis for determining suitability of materials for the museum is determined by the extent to which acquisition of a particular item will assist the facility in portraying the growth and traditions of naval aviation.

The kind of material continually desired by the museum consists of such items as: aircraft, including their parts and their pieces; models of aircraft and ships; engines and engine parts; instruments; ordnance, armament and air weapons; radios and electronic equipment; flight gear, navigation aids; landing and launching aids; and ship and squadron insignia.

In the area of personal memorabilia are photographs and photo albums, wing insignia, medals, uniforms or parts of uniforms, flight clothing and strictly personal papers.

Materials considered by commands or individuals suitable for transfer to the Naval Aviation Museum should be reported to the Director, Naval Aviation Museum, NAS, Pensacola, Fla. 32508. The director will



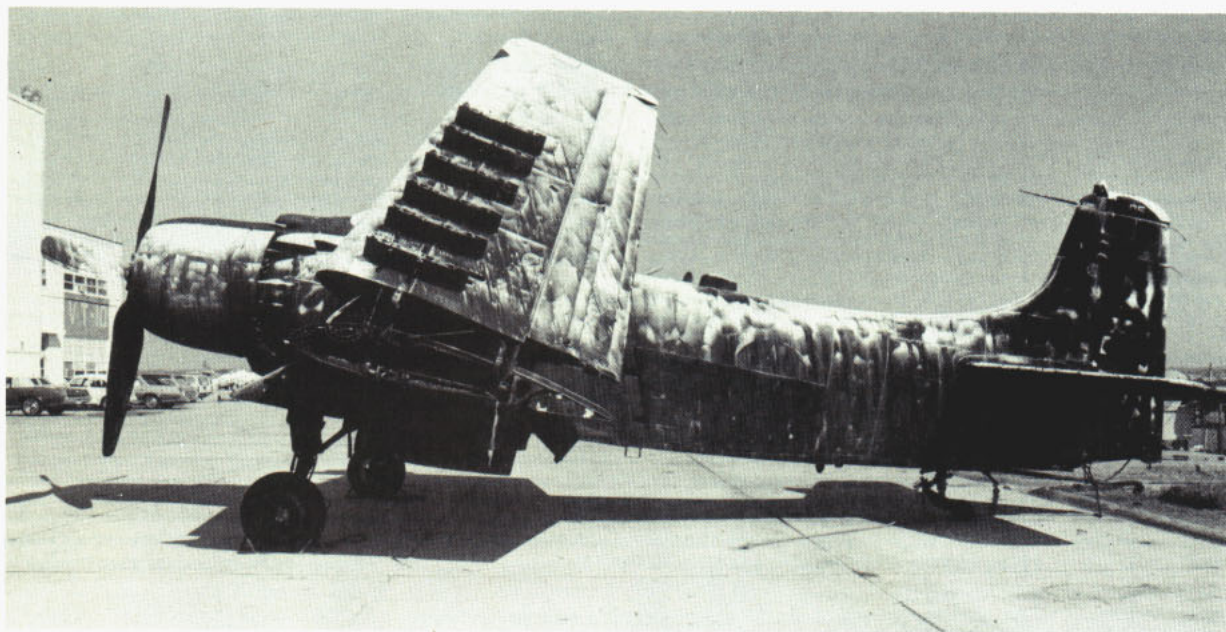


determine whether the material is desirable and, if so, will notify the holder as to its disposition. In cases where items cannot be easily identified or associated with a special event or person, yet appear to have some value, they should also be reported by photograph on the grounds that a description may reveal some significance which will lead to its preservation.

In 1914, the first contingent of naval aviators—nine officers, 23 enlisted men and seven aircraft—arrived at the Pensacola Navy Yard to begin a new chapter in a book, "Pirates to Pilots." The Naval Aviation Museum has captured pages from that book and the tale is waiting to be read by any interested visitor to the brand-new building. All you need to visit the museum is the same thing those early air pioneers had lots of—initiative.

—J. F. Coleman

Facing page top: Skylab II Command Module. Left: Young Navy people have the opportunity to study aviation history at close range in the museum. Below: A-1 Skyraider awaits restoration.



# Here's What You'll Find At Naval Aviation Museum

More than 50 aircraft ranging from the famed A-1 *Triad*, first of the Navy's long line to an *Apollo* space capsule, are among those either on exhibit or planned for exhibit in the new Naval Aviation Museum scheduled to be dedicated 13 April in Pensacola, Fla.

Here's a rundown of aircraft in the collection:

- A-1 *Triad* built by Curtiss, 1911-12, an exact reproduction of the Navy's first aircraft; on loan from the National Air and Space Museum, Silver Hill, Md.

- N-9H, a rebuilt seaplane trainer of 1917-1922 era; built by Burgess, it is the only one of its kind known in existence; acquired from NASM.

- MF-Boat, built by the Naval Aircraft Factory, is a modified version used as a World War I trainer in 1918; obtained from Mr. George S. Waltman of Great Neck, N. Y.

- NC-4, a reproduction of the long-range patrol flying boat of the 1918-1922 era; built by Curtiss, it is on loan from NASM.

- F4B-4 carrier- and land-based fighter, 1929-1938, is the only one of its kind; obtained from NASM.

- RR-4 "Tri-Motor" (Tin Goose) built by Ford, 1932, is a general transport capable of carrying two crewmen and 15 passengers; donated by Mr. and Mrs. Dexter Coffin of Palm Beach, Fla.

- FF-1 carrier- and land-based fighter of the 1933-1936 era is believed to be the only one of its kind in existence; donated by Grumman Aircraft Corp.

- PBV-5 *Catalina* patrol flying boat built by Consolidated, 1936-1949; on loan from NASM.

- SBD *Dauntless* (formerly A-24) is a carrier-based scout plane and dive bomber of the 1938-1945 era; built by Douglas and acquired from City of Portland, Ore.

- N3N-3 *Yellow Peril*, famous primary trainer used for 21 years beginning in 1938; built by the Naval Aircraft Factory, it was the last biplane in U. S. Navy service; obtained from the Naval Air Material Center.

- OS2U-3 *Kingfisher* was built by Vought; historic observation-scout plane used between 1940 and 1946; obtained from the Uruguayan Navy.

- PB2Y-3 *Coronado* patrol bomber flying boat built by Consolidated from 1940 to 1945; donated by Hughes Helicopters.

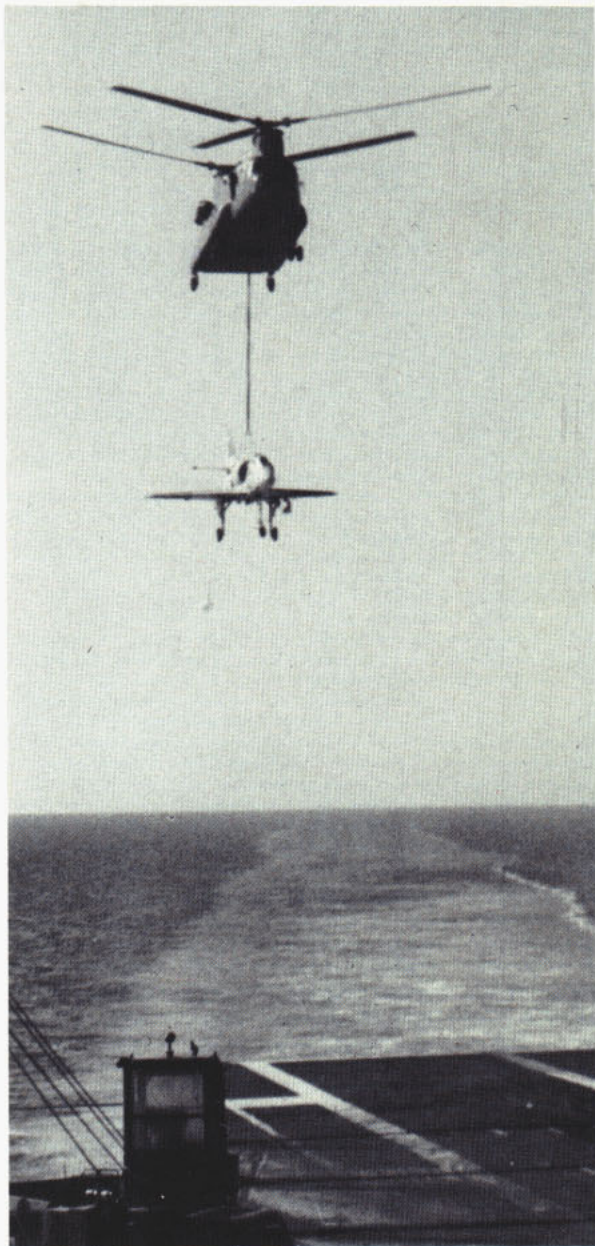
- N2S-4, another *Yellow Peril*, famous World War II Stearman-built biplane trainer first placed in operation in 1941; donated by Dr. L. A. Youngs of Lakeland, Fla.

- RC-45J *Expeditor* (formerly JRB) built by Beech is the last operational C-45 type with more than 30 years' service; obtained from Naval Air Technical Training Unit, NAS Pensacola, Fla., circa 1941.

- C-47J, world-famous *Skytrain*, formerly R4D-6, is a Douglas-built cargo transport, circa 1941; obtained

from the Naval Air Rework Facility, NAS Pensacola, Fla.

- C-54Q (formerly R5D-3), a personnel, logistic and



**Unique Carrier Landing:** A McDonnell Douglas A-4B jet is cable-hoisted on board USS Lexington (CVT 16) by helicopter from Fort Hood, Tex. This recent landing took place almost 19 years after the A-4B attack aircraft made its maiden flight on 26 Mar 1956. The transfer took place off the Texas coast where the Pensacola-based carrier was being used for carrier qualifications by student naval aviators training in the area. Lexington carried the A-4B back to Pensacola for eventual placement in the new Naval Aviation Museum along with other aircraft which have played significant roles in the 64-year history of naval aviation.

staff support aircraft first built in 1941 by Douglas; obtained from NAS Pensacola.

- TBM-3E *Avenger*, torpedo-bomber, 1942-1954; built by General Motors and obtained from NAS Jacksonville, Fla.

- SB2C-5, World War II *Helldiver*, is a Curtiss-built, carrier-based scout-bomber used from 1942 to 1949; on loan from NASM.

- F4U-ID, World War II *Corsair*, is a Vought-built, carrier-based fighter in operation from 1942 to 1955; on loan from NASM.

- F6F-5 fighter of WWII built by Grumman from 1943 to 1953; obtained from Aerial Classics, Atlanta, Ga.; it is displayed with markings of the Navy's top-scoring ace, CDR Dave McCampbell.

- EC-121K *Super Connie* Lockheed-built electronic countermeasures aircraft, circa 1943, obtained from Training Squadron 86 (VT-86).

- J2F-6 *Duck* is a utility amphibian produced by Grumman in 1943 and licensed to Columbia.

- SNJ-5B *Texan* basic trainer was first operational in 1943; built by North American, donated by Mr. Paul Pribble of Downey, Calif.

- F8F-2P *Bearcat* medium-altitude carrier interceptor of the 1945-1953 era was the Navy's last prop fighter; built by Grumman, obtained from the Naval Training Center, Bainbridge, Md.

- A-1H *Skyraider* (formerly AD-6) built by Douglas; an attack or utility aircraft of the 1946-1968 era: this plane, received from Attack Squadron 25 (VA-25), made last Navy A-1H *Skyraider* combat strike over Vietnam in 1968.

- EA-1F *Skyraider* (formerly AD-5Q) Douglas-built carrier- or land-based attack or utility aircraft equipped for electronic countermeasures was obtained from Davis-Monthan AFB, Tucson, Ariz., 1946.

- FJ-1 *Fury* built by North American as a carrier-based jet fighter of the 1947-1949 era; on loan from NASM.

- D-558-1 used for high-speed experimental research only, this Douglas-built aircraft set world speed records in 1947; obtained from California State Polytechnic College.

- HU-16D *Albatross* (formerly UF-2), utility aircraft for amphibious search and rescue was first built by Grumman in 1947, is still operational; obtained from the Naval Air Rework Facility, NAS Pensacola.

- HO3S-2 observation and utility helicopter in operation from 1947 to 1954 was built by Sikorsky.

- P2V-1 *Neptune* patrol-antisubmarine search plane built by Lockheed in 1947; on loan from NASM.

- AM-1 *Mauler* single-seat, attack carrier-based bomber of the 1948-1950 era; built by Martin and obtained from the Aberdeen Proving Ground, Aberdeen, Md.

- HRP-1 *Flying Banana* is the world's first transport helicopter; built by Piasecki Helicopter Corp., with a service life from 1948 to 1953; donated by Mr. F. N. Piasecki.

- TH-13M *Sioux* (formerly HTL-6) training and general purpose helicopter of 1948-1968 era; built by Bell and obtained from NAS Ellyson Field, Fla.

- UH-13P *Sioux* (formerly HUL-1) training and general purpose helicopter of the 1948-1973 era; built by

Bell and obtained from the Naval Coastal Systems Laboratory, Panama City, Fla.

- F-2D *Banshee* (formerly F2H-4) carrier-based fighter from 1949 to 1959, built by McDonnell; obtained from the Naval Air Technical Training Unit, NAS Jacksonville.

- F9F-2 *Panther* carrier-based day fighter from 1949 to 1958 built by Grumman; obtained from NAS Pensacola.

- F4U-5N *Corsair* carrier-based night fighter of the Korean conflict, circa. 1950; built by Chance-Vought; obtained from the Naval Training Center, Bainbridge, Md.

- XF-3D *Skyknight*, Navy's first all-weather jet fighter delivered in 1951 during Korean conflict; built by Douglas and received from NAS Norfolk.

- OH-19E *Chickasaw* (formerly HRS-3) is a Sikorsky-built general utility helicopter of the 1951-1969 era; obtained from the Marine Corps Air Station, Beaufort, S. C.

- UH-25C *Retriever* (formerly HUP-3) search, rescue and utility helicopter of 1951-1964 era; built by Piasecki and obtained from the Naval Air Facility, Litchfield Park, Ariz.

- SP-5B *Marlin* (formerly P5M-2S) patrol flying boat built by Martin for service from 1952 to 1967; obtained from NAS Norfolk.

- TS-2A *Tracker* (formerly S2F-1T) antisubmarine search and attack training aircraft built in 1952 by Grumman; obtained from NARF Pensacola.

- F9F-6 *Cougar* carrier-based jet fighter built by Grumman for 1952-1960 era; on loan from NASM.

- F-1E *Fury* (formerly FJ-4) carrier-based jet fighter of 1954-1962 era; built by North American; obtained from NAS Glynco, Ga.

- F-6A *Skyray* (formerly F4D-1) carrier-based, all-weather interceptor in use from 1956 to 1964; built by Douglas; received from NAS Patuxent River, Md.

- OH-43D (formerly HOK-1) crash rescue helicopter built by Kaman for service from 1956 to 1965; obtained from Davis-Monthan AFB, Tucson, Ariz.

- A-4A *Skyhawk* (formerly A4D-1) carrier-based attack-bomber in service from 1956 to present; built by Douglas, received from NATTC Memphis.

- F-3B *Demon* (formerly F3H-2) carrier-borne fighter used from 1956 to 1964; built by McDonnell, received from NATTC Memphis.

- F-8A *Crusader* high-performance, carrier-based day fighter introduced in 1957 and still operational; built by Chance-Vought; received from NARF Pensacola.

- TF-11A *Tiger* (formerly F11F-1) high-performance, swept wing fighter used from 1957 to 1961, built by Grumman; this aircraft was flown by the Blue Angels team leader.

- HRP-2, another *Flying Banana*, rescue and transport helicopter. The first HR2 built by Piasecki, it was donated by him.

- TD-2C1, radio-controlled target drone, built by Culver Aircraft Corporation. It was donated by NAS Norfolk.

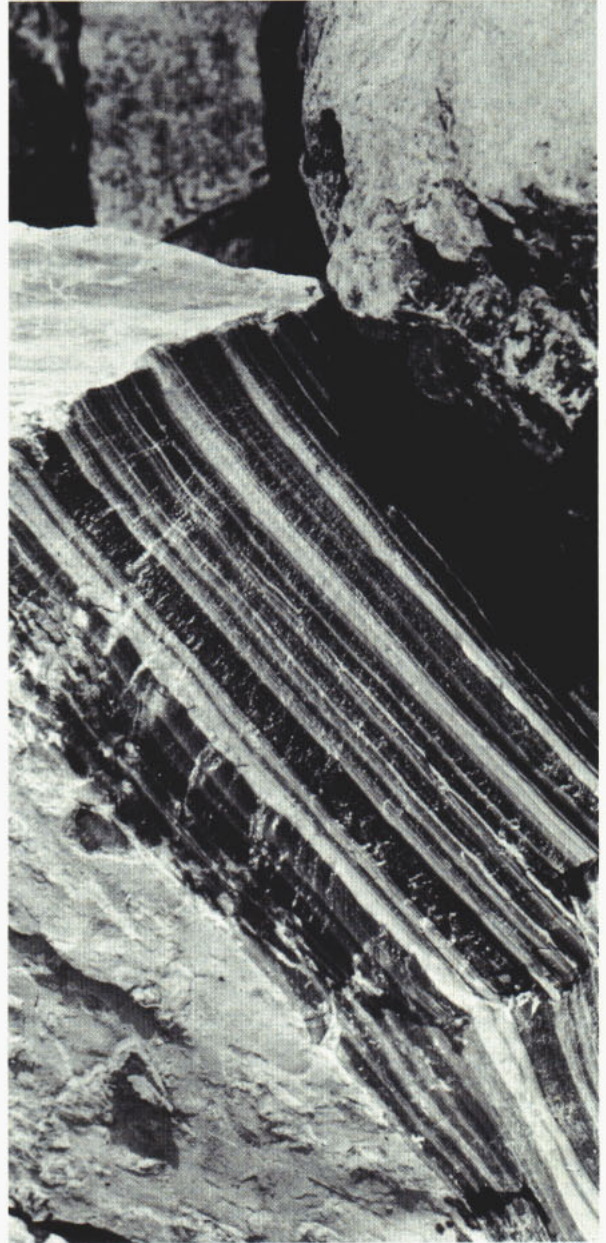
- UH34-D *Seahorse*, utility helicopter built by Sikorsky and donated by NARF Pensacola.

- YRON-1, a one-man helicopter built by Gyrodyne and donated by Navy representative at Gyrodyne.

## Navy Fuel on a Mountain

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# Squeezing Oil From Stone



Above: Sample of petroleum-bearing oil shale. Facing page: Hose is over and pumping begins as an aircraft carrier takes on fuel from a fleet oiler during operations in the Pacific.

The heavy fueling rig swung in the breeze created by the speed of the ships and the word was passed to begin pumping. Two Navy ships, an oiler and a destroyer, were involved in an evolution vital to the never-ending process of keeping the Fleet operating. That evolution? Refueling at sea.

To the boatswain's mates, line handlers and others involved in this critical exercise it doesn't matter really where the oil comes from or how it's processed. The important thing to them is that all of it gets into fuel tanks and not on decks. To Navymen, Anvil Points, Colo., is merely a picturesque name, unless one of them happens to be from there, the Oil Shale Capital of the World. That one might tell them that in the hills surrounding his homestead lies the Naval Oil Shale Reserves. *Estimates indicate that enough petroleum is locked within that arid terrain to keep the ships and the rest of the Navy operating for the next 200 years.*

In an area covering the tri-state corners of Colorado, Utah, and Wyoming is the world's largest known deposit of oil shale. Lying therein is a reported 1.8 to 2.2 trillion barrels of potential crude oil or "kerogen."

Producing oil from stone is not a new process. As a matter of fact the word "petroleum" stems from the Greek "rock oil." In the year 1350, the Austrians used shale oil for medicinal purposes and, in 1694, England granted a patent "to distill oyle from a kind of stone."

But history tells us the real beginning of shale goes back more than 50 million years, a scant few million years after the demise of the dinosaur. During this period there existed two freshwater lakes which covered the same area as today's tri-state expanse of Colo-

rado, Utah and Wyoming. Here some 40 million years later the Rocky Mountains formed. During the 10-million year period when the mountains were forming, the lakes became stagnant and as the mountains grew, dead plants and animals along with volcanic ash and other sediments settled to the bottom of the prehistoric lakes. When the lakes disappeared completely, deposits of organic materials were left in some areas and were subsequently overlain by sands and sediments. Much of that organic material left in the earth ultimately became the substance man has since labeled "kerogen."

The Ute Indians, in what is now the United States, knew of the "rock that burns," but their efforts to use the stone for heating or cooking proved futile due to the amount of stone needed and the smoke and smell which it emitted.

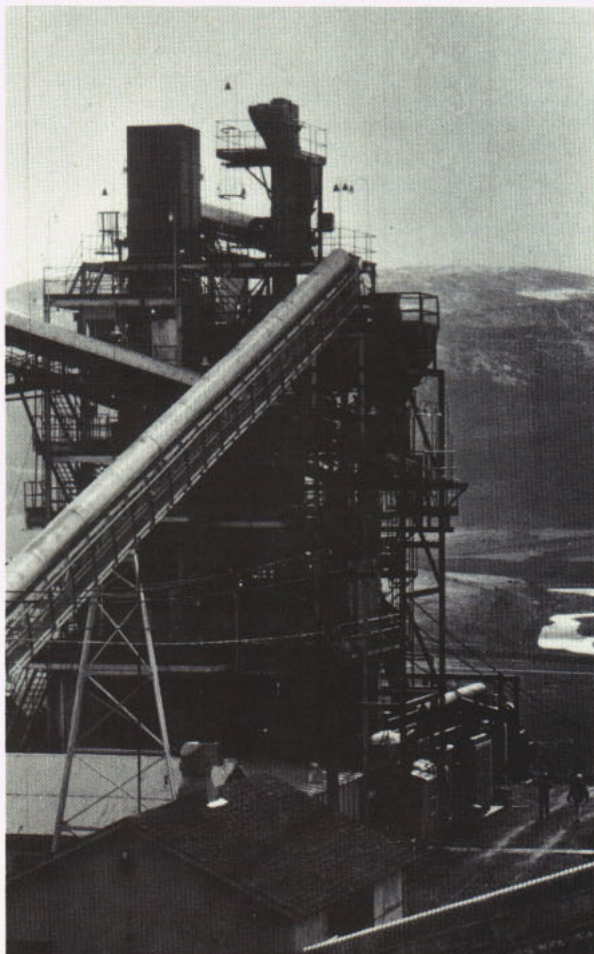
In the 1850s interest in oil shale grew as did the possibilities of an "oil shale boom" until the advent of the first oil well. The shale by then was being used for lamp oil, lubricants and some patent medicines. Oil was first discovered by Colonel E. L. Drake in Titusville, Pa. That first oil well was to set the stage for diminishing interest in oil shale for decades to come.

Now today, in an era of uncertainty concerning world energy resources, with rising prices and dwindling resources, the production of shale oil has become a valuable area of exploitation. Many geologists believe that kerogen is actually an undeveloped oil. They believe that like other fossil fuels, kerogen began with microscopic plants and animals buried in shallow waters. In the case of kerogen, however, nature didn't





**Above: Access road and entrance to oil shale mines. Below: Retort with Colorado River in the background. Facing page top: Artist's conception of oil shale retort. Bottom: Deer from America's largest herd roam freely and safely on the Navy oil shale reserve near Rifle, Colo.**



complete the evolution; left out were the heat and pressure which would have resulted in its conversion to oil.

Today's modern technology has allowed mankind to take up where nature left off. Man can now add the heat and force the oil from the stone.

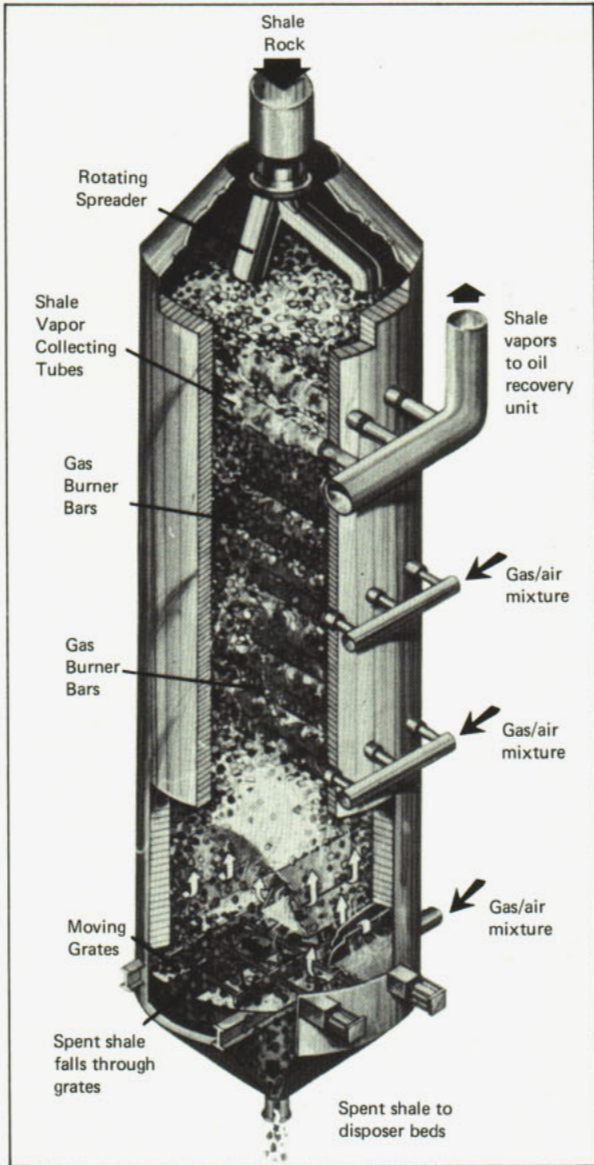
To extract kerogen from shale, one needs a "retort" or a capsule designed to contain and heat the rock. The retort uses a distilling process.

In the retorting process currently being used by the companies doing the research on the naval oil reserves, the shale is extracted from horizontal mines and crushed into fragments one-half to three inches in diameter. It is then fed into the top of a retort, subjected to intense heat (over 900 F degrees) while the oil vapors are drawn off and fed through a condenser. Kerogen is then routed to the storage tanks where it is kept warm to prevent solidification.

Back in 1944, the Synthetic Fuel Act authorized the Secretary of the Interior, through the Bureau of Mines, to conduct laboratory research and development work and to construct and operate experimental demonstration plants in order to produce synthetic fuels. Also in 1944, an oil shale demonstration plant was built on the Naval Oil Shale Reserve near Rifle, Colo., and was used as part of that program.

Today private firms are conducting research to determine the suitability of synthetic fuels for Navy and civilian applications. With the continuing world energy crisis—and with no immediate relief in sight—shale oil could well prove to be a boon to the U. S. Navy as it continues to carry out its worldwide mission at sea.

Perhaps, too, the development of shale oil will provide the nation with a new breath of life as it searches



may be derived from it?

Here are some facts:

- The majority of the nation's oil shale deposits lie in government-owned lands. The Secretary of the Navy has a responsibility to serve as custodian of some of the nation's best oil shale reserves, which gives the Navy a unique interest in this alternative source of fuel.

- The basic law establishing the Naval Petroleum and Oil Shale Reserves requires that the Secretary of the Navy, directly or by contract, lease, or otherwise, shall explore, prospect, conserve, develop, use and operate the naval petroleum and oil shale reserves at his discretion, subject to approval by the President.

- The Naval Petroleum and Oil Shale Reserves consist of three oil shale reserves (in addition to four petroleum reserves). The three oil shale reserves, located in Colorado and Utah, were established by Congress between 1916 and 1924.

- The Naval Oil Shale Reserves located in Garfield County, Colo., are comprised of about 55,000 acres and are estimated to contain about 12 billion barrels of shale oil from shale containing 15 gallons or more per ton. The Utah reserve is located in Carbon and Uintah counties and consists of about 90,000 acres with an estimated 3.8 billion barrels of recoverable shale oil from shale containing 15 gallons or more per ton. One of the responsibilities of the Director of the Navy Petroleum and Oil Shale Reserves is to encourage, with collaboration of the Department of the Interior, the advancement of technical knowledge with regard to oil shale.

- The Navy has negotiated with the Department of the Interior for test and evaluation quantities of shale oils at no cost for all DOD testing programs. (The Synthetic Fuel Act of 1944 authorized the Secretary of the Interior, through the Bureau of Mines, to conduct laboratory research and development work and to construct and operate demonstration plants to produce



for new energy sources to cope with the gigantic demands the future has yet to bring.

### Navy Oil Shale: Here Are the Facts

Oil shale ranks second to coal as the most abundant source of nonpetroleum fossil fuel in the United States.

Oil shale produces an organic compound named *kerogen* which is a form of crude oil. It is found in abundance in Colorado, Utah, and Wyoming. Estimates on the amount of crude oil potential range from 1.8 to 2.2 trillion barrels, enough to offer a long-term solution to this country's fuel shortage.

That's why there has been so much interest in the subject of oil shale in recent months.

But what connection does the Navy have with oil shale, other than as a potential user of the fuel that



synthetic liquid fuels from coal and oil shale, as well as from agricultural and forestry products and other substances.)

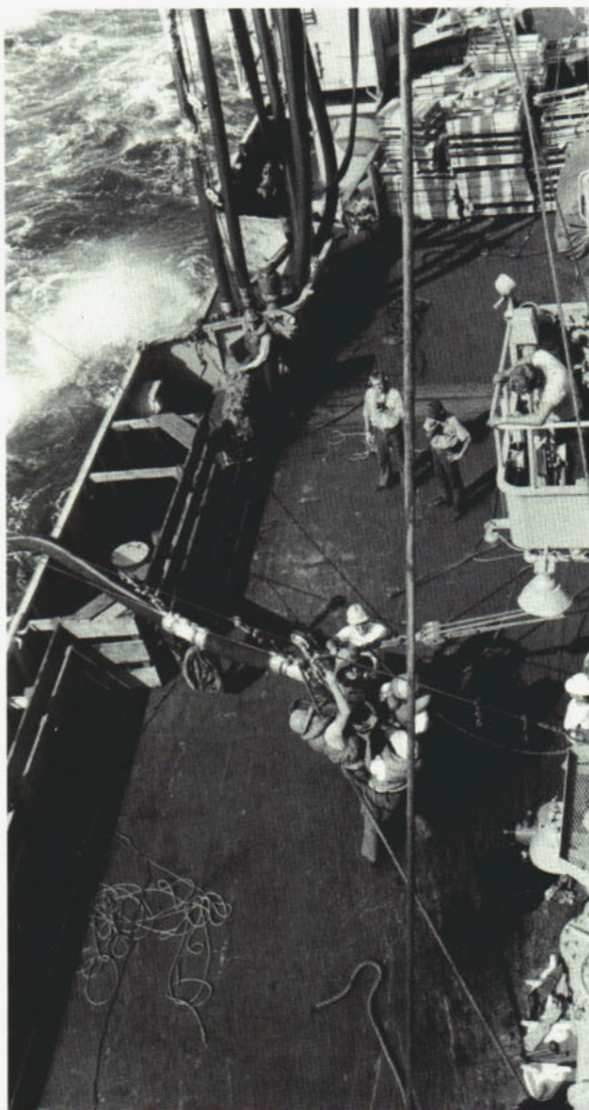
- The U. S. Navy controls some of the richest U. S. oil-shale deposits, in the Naval Oil Shale Reserves (NOSR) near Anvil Points, Colo. Synthetic fuels from oil shale are currently being tested to determine their suitability for Navy and DOD applications. A private research and development firm has been testing oil-shale processes using Navy oil shale under a lease (negotiated by the Department of the Interior) at Anvil Points. The Navy is negotiating with the organization for test-and-evaluation quantities of shale oil, for DOD testing programs.

- A major consideration in the production of oil from shale is its effect on the environment, but one of the greatest problems faced by the nation today is the energy crisis. In the research that is now being carried out, it should be noted that environmental standards must and are being taken into consideration in the development of oil shale.

- One method of extraction of oil shale is by "room and pillar mining." Room and pillar mining is the mining technique envisioned in most shale development plans involving underground mining—and underground mining is in most modern shale development plans. In essence, it means mining out a room and leaving a supporting pillar. In a given room, 60 to 75 percent of the shale will be mined out and 25 to 40 percent will be left in place as a pillar to hold up the roof. In other words the "roof" and the slopes of the mountains are retained (see photos).







Facing Page top: Jim Gigeaux of Paraho Corp. at a revegetation site with retort in the background. Bottom: Inside an oil shale mine. Above: Synthetic crude oil known as kerogen. Lower right: Looking outside entrance of an oil shale mine. Upper right: All hands pull together to hook up a fuel line during refueling operations between USS Camden (AOE 2) and a fleet oiler in South China Sea.

• After the shale is mined, it is crushed and fed into a retort. From the retort comes the crude shale oil and its by-products. It is the by-products which could create another environmental problem. Research is being conducted on possible utilization of the spent shale after the fuel has been removed, for such purposes as building materials or "enriched" soil.

The energy crisis and its effect on the U. S. economy have resulted in a call for national energy self-sufficiency. Rising prices and dwindling petroleum resources make the development of synthetic sources a valuable area of exploration for the Navy.

The fact is that oil shale is capable of providing the first commercial quantities of U. S. synthetic fuels. The development of a proven and available technology base is the aim of the experimental work now going on.

Thus further extraction experimentation may provide technology for the production of synthetic crude oil for the nation—and the Navy—to draw upon should the need arise.



—Story and photos by Richard A. Pendergist, USN

# SYNTHETIC FUEL PROGRAM

*Editor's Note: The Navy serves as the focal point for synthetic fuel research, development, and testing in the Department of Defense. The Navy represents DOD on the interagency task force for synthetic fuels. Here is a knowledgeable report on synthetic fuels prepared by an expert in the Naval Material Command, Commander Paul Petzrick, (CEC) USN.*

"Liquid hydrocarbon" fuels—which the average person thinks of primarily as petroleum—have powered the U. S. Navy for most of this century. The reason is that they are convenient, efficient, and, up until recently, plentiful and relatively inexpensive. Most importantly, "natural crude" was readily available within U. S. national boundaries.

Navy planners must now seek alternative sources of energy if the Navy is to continue to carry out its missions. One major alternative that is being considered is the use of "synthetic fossil fuel" derived from coal, oil shale or tar sands.

Coal, of course, is one of the first fossil fuels used by man. It has been burned directly for centuries. But did you know that a fuel gas was made from coal almost 200 years ago? And that coal liquids were derived approximately 50 years ago by techniques known as pyrolysis or hydroliquefaction?

In World War II, a major part of the German armed forces was fueled with liquid coal. At that time, Germany had several synthetic fuel plants, with a combined output of about 100,000 barrels a day.

Since World War II, the use of coal as a synthetic fuel has dwindled because, in general, the cost has been too high. However, research in this area has continued:

- Since 1960 the U. S. Office of Coal Research (OCR) and various private energy companies have devoted much time and effort to perfect this synthetic fuel technology.

- Many new processes utilizing coal as synthetic fuel are now in the pilot-plant stage and could be producing liquid fuel on a commercial level within a few years.

- Of all sources of liquid fuel for the Navy, coal is a leading candidate because of its wide geographic distribution.

The use of *oil shale* for liquid fuels, discussed in the article on the preceding pages, also predates the use of natural crude oil. The earliest patent on oil shale processing was issued almost three centuries ago, in 1694. Commercial-scale oil shale industries existed in such countries as Australia, France, Sweden and Scotland until the 1950s, and oil shale is currently being

processed on a commercial level in Manchuria (China) and Estonia (U.S.S.R.).

- One of the most significant applications of shale-derived products is one that has been little recognized by the average person: *Shale oil was extensively used to power the Japanese navy during World War II.*

The availability of low-cost natural crude products made the processing of shale oil uneconomical, as has been the case with liquid coal; hence, the commercial-scale industry virtually disappeared. However, research and development efforts have been conducted in the U. S. since World War II.

A third significant source of synthetic crude is *tar sands*—a mixture of sand, water, and an organic bituminous material. Tar sands are found in the U. S., but developmental work has been concentrated in Canada. Canadian efforts to recover oil from tar sands began as early as 1897, although virtually all of the early development projects failed. Recently a Canadian oil company constructed a 45,000-barrel-per-day plant. This plant became operational in 1967 and has increased its daily production.

Until recently, the processing of tar sands into fuel products has been too costly. However, with the changing world energy situation, several new tar sands plants are being designed and could be in operation by 1982, depending upon economic factors.

Although processes for extracting liquid fuel from coal, oil shale, and tar sands have existed for many years, only during the last two decades have government and industry in this country begun intensive research efforts to develop new and more efficient processes, to improve the efficiency of current processes, and to lower the cost of the processing facilities. Success in these efforts, together with increasing natural crude prices, have now made all three synthetic fuel sources more competitive. The most recent development efforts have been directed toward building pilot plants to test the improved technologies before proceeding to build full-scale commercial plants.

**Liquid Coal.** In converting coal to liquid fuel, one of four processes is generally used.

- **Synthesis gas process.** This is a relatively simple method of converting coal to liquid, but is generally more expensive than other processes. It offers an increased control over the types of product manufactured, and would be preferred if some of the by-products could be used by industry as "feedstock," that is, to produce other chemical products.

- **Pyrolysis techniques.** This was reported on in the ALL HANDS article "Liquid Coal," (March 1974, page

4). The technique has been used to distill coal into coke, fuel gases, and liquid fuels on a commercial level for many years. Various techniques have been pursued by the U. S. Office of Coal Research and by private companies. One of the processes, COED, is typical and represents the most advanced state of the art. The COED process, however, is not currently economical. A fact in its favor is that fuel gas is a co-product, and if fuel gas were priced nearer to its true energy value, then the experts say the COED process could be used to produce fuels economically. This process, as well as those listed below, produces highly aromatic fuels which are more suitable as boiler or spark ignition engine fuels than as diesel or gas turbine fuels.

- **Catalytic hydrogenation.** This appears to be one of the most promising of the coal processes. It seems to offer higher overall thermal efficiency and probably lower costs. This is the process the Germans used most extensively during World War II.

In the early German processing, pulverized coal and hydrogen were allowed to react, in the presence of a catalyst, at particular pressures and temperatures. By varying the conditions and the choice of catalyst, it was possible to obtain liquid products that varied from a very heavy fuel oil to high-volatile aviation fuel and hydrocarbon gases.

In general, this process will yield about three to four barrels of products per ton of coal. Both private industry and the U. S. government are sponsoring "direct hydrogenation" projects, but most of the projects are just now moving into the pilot plant stage. Based on the present rate of progress, commercial-scale production will probably not be achieved for at least five years.

- **Solvent refining.** This process of converting coal, known as SRC, is a special-purpose technology that provides a uniform fuel (with a low sulfur content) for use mostly by utilities. Basically, it calls for mixing pulverized coal, hydrogen and an organic solvent (derived from coal), under pressure and temperature in a reactor. The coal is dissolved, most of the sulfur is filtered out, and the product is distilled to recover (a) the solvent, (b) a small amount of liquid product, and (c) a hydrocarbon fuel with a 350° melting point. The hydrocarbon fuel can be further treated for use as a hot liquid boiler fuel, or solidified for use in a solid-fuel boiler. To adapt this fuel for naval use would probably require refinement of the process.

**Oil Shale.** Oil shale conversion to liquid fuel is discussed in the preceding article. Several oil shale development projects have been conducted in the United States since World War II. All of these projects are trying to demonstrate the feasibility of the fuel oil recovery technology, using a pilot plant, with the aim of improving efficiency and cost effectiveness. Several commercial-scale projects are being planned, with the first significant production scheduled for 1978-80.

The prospects of recovery of shale oil have received considerable attention recently. Technology is still lim-

ited, however, and is not expected to have a significant impact for many years.

**Tar Sands.** A Canadian oil company has been operating a commercial-scale tar sands processing plant in Canada since 1967. That plant produces about 50,000 barrels per day of tars and "synthetic crude."

In this process, the mined tar sands are mixed with water and heated in rotating drums, the bitumen (tar) and sand are then separated by gravity, and the water is then removed from the bitumen in a centrifuge. The bitumen yields a distillate, which is further hydrotreated. The resulting crude is a clear, sulfur-free, versatile liquid which can then be processed into conventional products by normal refinery procedures.

In the United States, efforts to recover oil from tar sands have been limited to a project of the Department of Interior's Bureau of Mines and two small development projects in Utah.

The Navy has been closely involved in all areas of synthetic fuel research and development. Some of the highlights of Navy synthetic fuel programs are:

- Synthetic fuel from coal has been used to power USS *Johnston* (DD 821) on a successful sea trial. *Johnston* steamed from the Philadelphia Naval Base on the 1974 sea trial, and was the first ship in the history of this country to power its engines with coal-derived liquid fuel. The synthetic fuel was obtained from coal by a pyrolysis process.

- The Naval Ship Research and Development Center (Annapolis) has tested a sample of synthetic crude from coal and found it to be chemically and physically similar to No. 6 fuel oil.

- Coal-derived fuel is being tested in a 4000-hp gas turbine power plant of the type in *Spruance* class (DD 963) destroyers.

- An agreement has been made to supply 10,000 barrels of synthetic fuel to the Navy from the Navy Oil Shale Reserves early this year. From this synthetic crude, approximately 6000 barrels of refined fuel (mostly DPM and JP-5) will be used for testing.

- A gas turbine engine for the TH57 helicopter has been subjected to a 60-hour performance test, using JP-5 fuel refined from synthetic crude derived from tar sands.

- JP-5 fuel produced from oil shale (and tar sands) will be used in static tests soon to be conducted in the TF34 aircraft engine that powers the *Viking* S3-A aircraft.

There is a continuing interest in synthetic fuels in the Navy. The Navy has a representative on the source selection board for the first large demonstration plant to produce coal liquids through a program initiated in the Office of Coal Research. The Navy serves as the focal point for synthetic fuel research, development, and testing in the Department of Defense and represents DOD on the interagency task force for synthetic fuels.

—CDR Paul Petzrick, (CEC) USN.



The period 4 May to 6 June, commemorating the Navy-Marine sea-air battles of the Coral Sea and Midway, is the time for the annual call for donations to the Navy Relief Society (NRS).

Founded in 1904, the Navy Relief Society is the naval service's own organization for the relief of distress among Navy and Marine Corps personnel and their families. The annual call for contributions is designed to achieve two goals: (1) to educate eligible recipients about the availability of NRS assistance; and (2) to obtain necessary funds to continue NRS services.

Until recent years, the annual NRS drive had incorporated a general announcement of the services available to Navy and Marine Corps people. Ever-increasing demands on the society's funds, however, have prompted an earnest plea for assistance. In 1974, for example, NRS experienced its largest loan year in history. More than 6.5 million dollars was lent, interest-free, and over \$1.1 million provided gratuitously to needy personnel. To meet this increased requirement, the society had to sell over \$1.6 million in reserve fund assets.

This reserve fund has been built up by careful investment to the point where its income covers all administrative and overhead costs of the society and helps cushion the deficit caused by direct relief expenditures. The original principal of this fund was raised by civilian friends of the Navy and the Marine Corps in the early days of World War II and presented to NRS in 1942. The interest and dividends from this fund provide more

than \$1.7 million a year, thus ensuring that all individual contributions go entirely to help Navymen, Marines or their families.

Nevertheless, drainage of reserve fund assets weakens the society's position and increases a need for reinforcements. Officials quickly point out that NRS is not in any immediate danger, but they also emphasize that greater response to the call for contributions can only improve the society's ability to assist needy people and expand services.

The society did have tough sledding in early years. At the time of its formation, Navy and Marine Corps officers, their wives and prominent civilians who comprised the original membership each contributed \$25 at the time of joining and made annual contributions thereafter.

For many years, the society received a portion of the gate receipts of Army-Navy football games. This source of revenue eventually became a major portion of the income. Admiral George Dewey, an early president of the society, commented in a letter dated 1 Jan 1910, that cancellation of the previous year's game at Philadelphia deprived the Navy Relief Fund of about \$7000. He also mentioned generous contributions from the fleet in the amount of \$2000 and asked for membership subscriptions to help keep the society afloat.

This was an era in which anyone who was down on his luck was down indeed. The society's files of aid given to Navymen and their families in the years preceding World War I record hardships that are difficult

for most people to conceive today.

It was an era of rugged individualism in which the public at large gave very little thought to municipal care for the unfortunate. Benefits for veterans and their families were virtually nonexistent and rights and benefits, such as today's Navy and Marine Corps offer personnel and their families, were few and far between.

An early opportunity for NRS to alleviate hardships of Navy families came a few weeks after its incorporation in 1904 with a payment of \$1695 to families of Navymen who died when the battleship *Maine* was destroyed in 1898 in Havana Harbor. The society provided basic maintenance for Navy widows and orphans and some were sent to vocational schools to make them self-supporting. For those who needed a temporary helping hand, NRS bought food for the hungry and fuel for cooking and for warmth.

As time passed, the society's needs for income increased and contributions were solicited from All Hands.

Navy Day carnivals were held at which donations were accepted and at which ships were dressed and illuminated. Guests were taken aboard and shown methods of Navy messing and berthing; how hammocks and seabags were stowed; how food was prepared and dishes were washed in the galley; and how the incapacitated were cared for in sick bay. Gun crews drilled and there were exhibitions which included street riot drills, wall-scaling and sham battles. At one carnival, there were four bands which provided a continuous flow of music all day and, at night, the carnival scene was lighted with searchlights and lanterns.

World War I increased the demands placed upon NRS, and it responded to the needs as it had since its founding in 1904. By this time, however, the society's financial capabilities were improving.

Since World War I, benefits for Navy and Marine families have been increasing and the nation has become more conscious of its debt to the men who fight to preserve its liberties. However, Navymen and Marines, like everyone else, still have emergencies for which they are unprepared.

Unfortunately, despite the benefits provided by law, there are still cases of hardship as, for example, when a father dies without providing for his survivors. Since 1907, NRS has received casualty reports of Navymen and Marines, both active and retired personnel. After a Navy or Marine Corps death becomes known, the society writes or calls the widow to offer assistance.

An outstanding example of the society's prompt aid to widows and orphans occurred in 1923, when 11 destroyers ran onto rocks and shoals off Point Honda on the California coast. Thousands of dollars were raised by the people of San Diego and other nearby communities and turned over to NRS for disbursement. Immediately after the disaster, NRS ascertained the financial condition of the dependents of those who died in the disaster and was able to distribute the funds to alleviate financial distress.

There have been numerous instances in which the society has helped families of Navymen who have gone to sea or Marines sent to quell problems without providing allotments for their families. Sometimes allotments have been made, but not received. The society stepped in with cash to keep wives and children "afloat" until money started coming again.

These, of course, are only a few examples of NRS assistance. The society's annual reports are filled with instances in which Navymen, Marines and their families

**Below: Available to those who need them, free layettes are prepared for new babies by volunteers.**



have been given assistance, ranging from moral support to substantial interest-free financial assistance and gratuities to help them over the rough road to self-sufficiency.

With 125 Navy Relief offices throughout the world, it's difficult for Navymen and Marines to be located outside shouting distance of help. Thus, when there is a genuine need, assistance can be obtained.

Typical reasons for which financial aid may be granted to an active or retired serviceman and his dependents, or a widow, minor orphan children, or truly dependent parents are:

- Basic maintenance due to delay or nonreceipt of emergency allotment or pending receipt of government benefits or other emergency situation which makes family resources temporarily inadequate but not extending directly or indirectly to regular supplementation.

- Travel in special cases of illness or death.

- Funeral expenses (\$500 limit for basic funeral).

- Vocational training for widows and orphans in approved public and private schools where needed to make a living.

- Special care and training of handicapped children including temporary placement pending admission to an institution.

- Keeping children in public school.

- Special assistance to widows and dependent mothers over 65.

- Medical expenses not covered by Uniformed Services Health Benefits Program or Medicare—Social Service Amendments such as spectacles and eye examinations, prosthetic devices other than artificial limbs and eyes, hearing aids and orthopedic shoes, and well-baby care, such as immunizations and checkups.

- Medical expenses under the Uniformed Services Health Benefits Program limited to the patient's required contribution.

- Dental expenses for dependents for work leading to serviceable dental capability rather than ideal dental restorations.

Funds of the society are NOT available as a matter of convenience in situations such as the following:

- To assist in maintaining a standard of living incommensurate with the pay and allowances of the man.

- To finance business ventures, to purchase a home, or similar permanent investments.

- To finance vacations, leave or liberty (except when leave is for emergencies such as critical illness, a death or equivalent urgent situations).

- To pay debts contracted prior to entry into the service.

- To pay income or other taxes, interest or mortgages.

- To purchase, or pay debts created for, nonessentials, such as automobiles, television sets, and similar conveniences.

- To pay court fines or to furnish bail for servicemen.

- To finance marriage, divorce or adoptions (except in rare and critical situations).

- To provide regular supplementing of income for basic maintenance.

In addition, the society is unable to finance cases involving truly chronic illnesses or situations which require long-term commitments. It may, however,



within certain limitations, assist in so-called chronic illnesses where reasonable and definite improvement may be expected within a predictable time, or for a temporary period pending permanent care by the use of other resources.

While the foregoing are typical of the more frequent situations in which aid can or cannot normally be rendered, they are by no means complete, and all cases presented are given full and sympathetic consideration. Attempt is made to resolve them on the side of liberality rather than parsimony. Necessity as compared to convenience is a deciding factor.

Thus far, most of the NRS assistance discussed has centered around financial aid, which may consist of a loan without interest, an outright gift, or a combination of the two, depending upon all the circumstances in a given case. Most times, financial assistance takes the form of a loan whenever repayment within a reasonable period is possible without undue burden. The repayment of loans enables the society to help others faced with similar situations. Repayment should be by allotment as this is the most convenient; however, the



Above: A smart shopper can often find useful, inexpensive items for the home and family at the Navy Relief Society's thrift shops.

society accepts cash or allotment in order to continue to be able to render service. In 1974, preliminary figures indicate a loss of over one million dollars, i.e., disbursements vs. receipts. Non-repayments of loans account for a large part of this loss which must be met by selling assets from the reserve fund thereby reducing future income.

NRS also provides many other types of assistance. These include:

- Layettes, made by volunteers, for new babies, for those who need them.
- Thrift shops, where articles of clothing and essentials may be purchased at rock-bottom prices.
- Children's waiting rooms at naval medical facilities.
- Counseling on financial management and referrals to community resources with special attention to the young serviceman and service family.
- Visiting nurses who visit mothers, newborn infants and the elderly in need of medical attention at home.

- An educational fund which provides opportunities for higher education to dependent children who might otherwise be unable to pursue their education beyond high school.

- Sponsor programs, such as Live Better for Less, Helping Hands, Toys for Tots, Motor Corps, and similar activities.

The work of the society is carried on by the headquarters office located in Arlington, Va., by 55 auxiliaries, by 53 branches and 17 offices of these auxiliaries. Some 6500 trained volunteers and 194 paid employees man the society offices.

Servicemen and their dependents and the dependents of deceased personnel living in the immediate vicinity of an auxiliary or branch should present their requests for assistance in person to the local office.

Eligible servicemen living in the Ninth Naval District—Colorado, Illinois, Indiana, North Dakota, South Dakota, Wisconsin, Wyoming, Iowa, Nebraska, Kansas, Michigan, Minnesota and Missouri—should apply to the Great Lakes Auxiliary, either directly or through the local Red Cross chapter.

Eligible personnel living in New York State, Connecticut and the rest of the Third Naval District, except in the immediate vicinity of the Connecticut Auxiliary and the 12 counties of Northern New Jersey, should apply to the New York Auxiliary, either directly or through the local Red Cross chapter.

All others should make application direct or through the local American Red Cross chapter or field director to Headquarters, Navy Relief Society, Suite 1228, 801 N. Randolph St., Arlington, Va. 22203, telephone area code 202, OX2-4904.

In emergencies when a Navy Relief Society or an American Red Cross office is not readily available, assistance can be provided through the facilities of the relief societies of the Coast Guard, Army or Air Force by reciprocal agreement.

The approximate average direct services given by the society annually are as follows:

Gratuities and loans converted to	
gratuities .....	\$1,450,000
Visiting nurse service .....	389,000
Layettes, nurseries and special programs	322,000
Loans written off as uncollectable .....	327,000

\$2,488,000

The Navy Relief Society is the naval service's own private, charitable organization. It provides emergency assistance in time of need for Navy and Marine Corps active duty and retired personnel, their dependents, surviving widows and children. There is no field of human trouble in which the society has not helped.

Once each year, during the 4 May to 6 June annual relief drive, there is the opportunity to publicize to each new officer and man, and to remind every member of the Navy-Marine Corps team, that Navy Relief stands ready throughout the world for instant help to a needy serviceman or his family. The annual call gives every one an opportunity to contribute toward a better life for those shipmates, past, present and future, who may be less fortunate than we.

—JO1 Ken Testorff

## Homeport Change...

# Smooth Sailing For USS Piedmont Families

The 800-man destroyer tender USS *Piedmont* (AD 17) arrived in Naples recently to begin duty with the U. S. Sixth Fleet. She docked amid music from a Navy band, USO hostesses, and sign-waving wives and children. Although the ship was new to Naples, most of the families had been there for months.

How that happened is a tribute to the Navy's can-do attitude. Entering an unfamiliar country can be an unnerving experience at best. To come with armloads of baggage and kids, minus a husband, could turn into a nightmare.

Luckily for the wives, Navy officials foresaw that possibility and acted by setting up the Dependents' Assistance Team (DAT) in Naples to ease *Piedmont's* arrival problems. The team was formed from *Piedmont* personnel in Naples waiting to join the ship. The purpose of DAT was to make things easier for the wives.

The first two groups of wives arrived in Rome on 5 September and 23 October. Each group was met by a bus, refreshments and as much good advice about



Naples as could be packed into the three-hour trip to their new home. When the bus arrived in Naples, the wives found hotel reservations waiting for them. They were welcomed and given briefings by personnel from the Naval Support Activity (NSA), Environmental Preventive Medicine Unit Seven, the Naval Hospital and DAT.

Language and art and culture classes, tours and information booklets were provided by the Human Resources Management Unit (HRMU) there. Earlier in the year the unit had sent groups to brief the men of *Piedmont*. The HRMU also provided the offices in which DAT was established.

According to Lieutenant (jg) Charles D. Mabry of DAT, "The team was set up to help in three basic areas."

The first area mentioned by Mabry was cutting "red tape in getting sojourners' permits, Temporary Lodging Allowance (TLA), ration cards, car registration, drivers' licenses, and household goods."



Mabry included house-hunting in the second area and helping with moving in the third.

The wife of Captain John T. Parker, commanding officer of *Piedmont*, acted as ombudswoman for the wives. Anne Parker remarked that the team "was set up so we wouldn't inundate NSA with our needs. It worked out just great."

When asked why the wives arrived so much ahead of the ship, Mabry answered, "The ship originally was due in August but was delayed because of problems during the yard period. Many of the families had sold their homes and gone to stay with relatives. But you can only stay with relatives for so long."

Mrs. Parker put the wives into several groups. "The first group came knowing the ship would be late. They came mainly because many of them felt it important that the children start school at the beginning of the school year."

She said the second group, the October arrivals, learned two weeks before the flight to Italy that the ship would be delayed again.

"They were faced with the decision whether to go without their husbands or to wait until the husbands would be in Naples. It was a decision that two adults had to make."

About half the wives made the flight; the third group arrived in December after the ship had reached Naples.

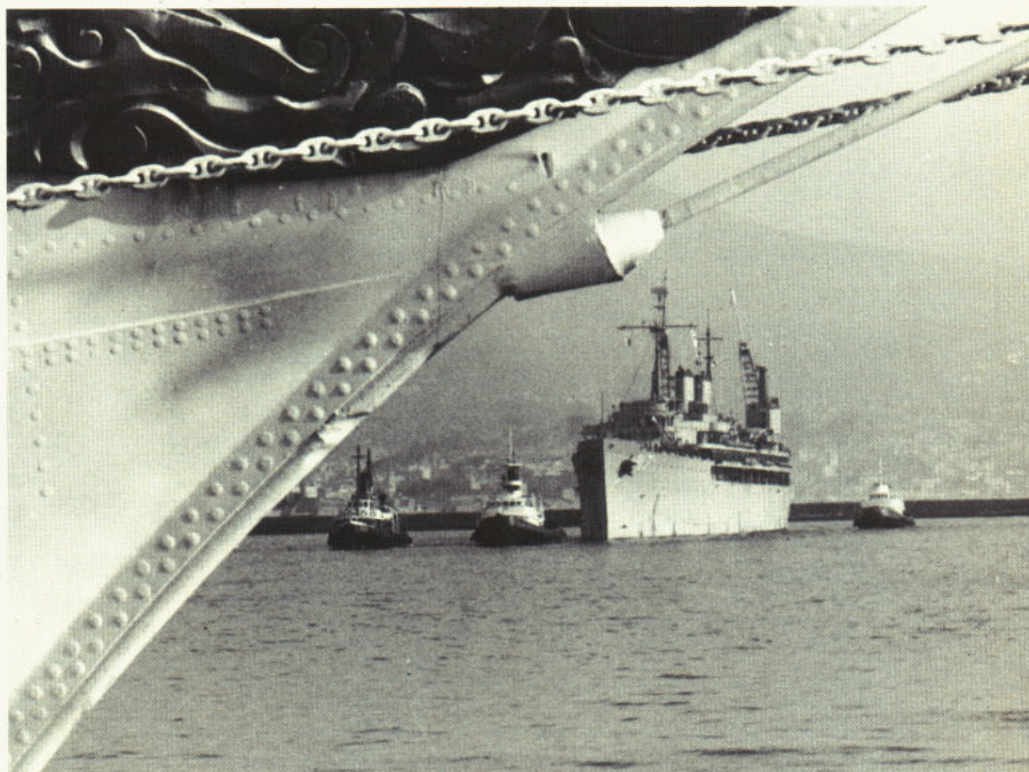
The wives faced several problems after arrival. Mabry stressed, "The fact that TLA is paid directly to the husbands made it hard on the wives who arrived low on cash. But we got fast help from Navy Relief and money also was wired from the ship." (See pg. 18.)

Looking back on the last few months, Mrs. Parker remarked, "We never dreamed we'd get as much help as we did."

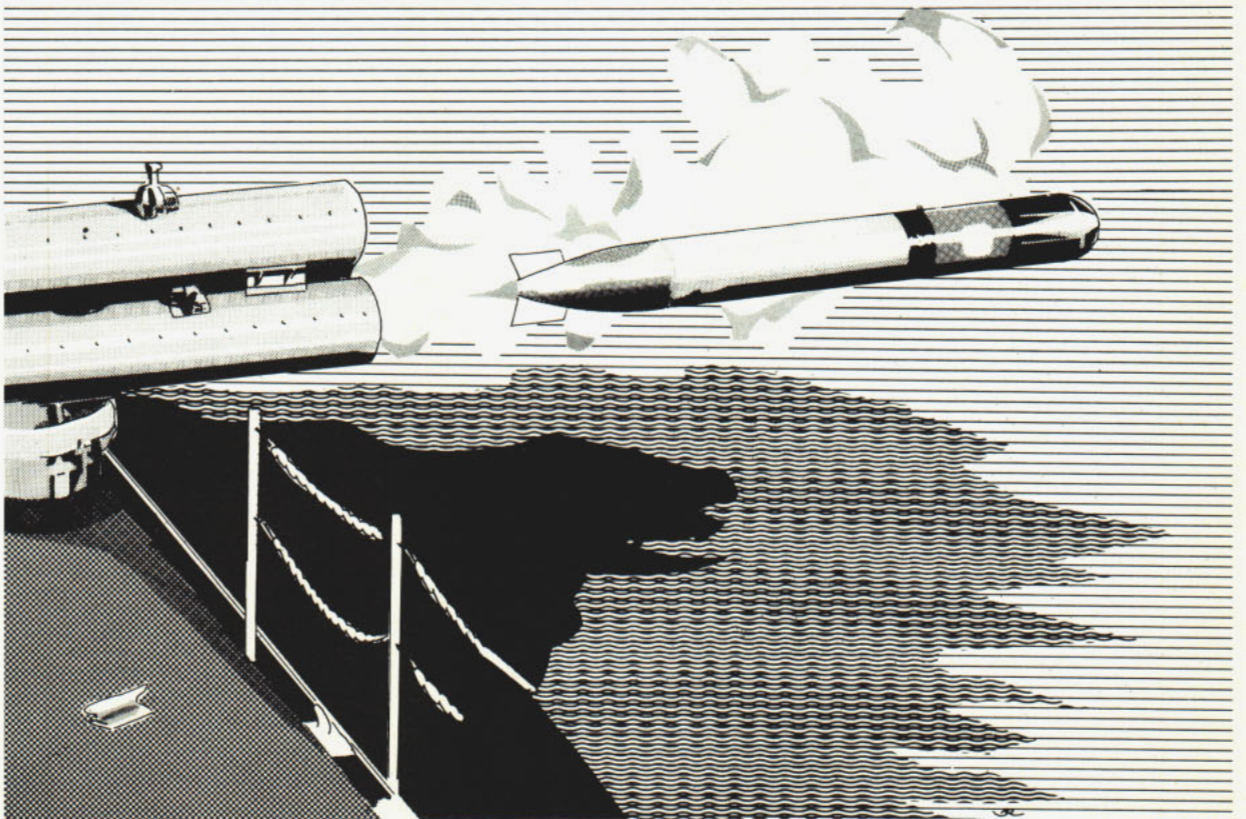
She summed up the situation with a rundown on some of the problems—"Things like coping with moving into strange apartments, the tremendous responsibility of signing your husband's money away, making your new home safe, depending on someone with a car to help you move your cabinets and furniture and getting transformers for everything! Now, what do I know about a transformer?" She may not have, but the Dependents' Assistance Team did, and that's what DAT's about.

Before the ship's arrival the wives met to prepare signs and banners. The sentiment expressed by youngsters waving the signs and the happy mothers greeting their husbands at the rails of *Piedmont* was, "Welcome Home."

Facing page: A welcome sight for the *Piedmont* crew was their families, waiting at the pier. Right: An Argentine naval training ship, *Libertad*, frames USS *Piedmont*, assisted by tugs, arriving in Naples.



# ON THE SCIENTIFIC FRONT



## COMPUTERIZED TORPEDO FIRING

One way to test a torpedo is to fire it. But, that costs a lot of money, both for the torpedo and for the ships, equipment and people involved. Besides, if the torpedo is lost, most, and possibly all, of the desired data is lost.

Solution: put the torpedo through a simulated run at the Naval Undersea Center in San Diego.

Simulated testing is nothing new in the Navy. It's been going on at the NUC Simulation Facility since 1951 when the facility was established. But, what is new is the manner in which the simulation is being performed faster than the eye can blink.

Today, high-speed scientific computer systems—a dual processor and digital computer systems—are used to gather more detailed simulation than ever before possible, according to L. Z. Maudlin, head of the NUC computer sciences and simulation division.

These two new systems were added to the computer and a group of analog computers already in the facility. The dual processor is capable of two computations every 300 nanoseconds (300 billionths of a second), which amounts to about six million computations a second. In layman's language, that means virtually every conceivable measure of effect felt by a torpedo on a simulated run to its target can be programmed through the computer to simulate conditions under which it might be operating, such as pressure and water temperature. And it can do it in a flash.

Maudlin explains that the facility operates on a three-point philosophy:

"First, we simulate the physics of what happens in the water. Second, we use as much of the actual hardware as possible so that we can discover any deficiencies. Third, we use the engineer (designer of the torpedo) as a partner in the analysis."

The center can then question information during the program rather than waiting until all data is gathered.

The facility initially did evaluation work only. Now, with its new capabilities, the simulation computer complex will be used to assist Submarine Development Group Two in its vital tactical work next year.

A total of 60 NUC personnel man the computer facility, 25 of them employed in running the dual processor high-speed system and although the data gained from a simulated run can never really be as accurate and comprehensive as the water run, it can significantly enhance the engineer's ability to understand what is happening under controlled laboratory conditions at a much smaller cost. (→)



Facing Page: Artist's conception of shipboard torpedo firing. Top: Electronics Engineer Don Robinson punches in a program for a simulated run of the Mark 48 torpedo. Above: Naval Undersea Center's sophisticated computer center is used for support of scientific programs, management data processing, and real-time simulation, which has been used in developing every new torpedo since 1951.

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## ROCKET-POWERED HELICOPTER

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It's as easy to operate as a motorcycle, it's pollution-free, and it's a one-man, rocket-powered helicopter that has been recently delivered to the U. S. Navy.

It's called the Minicopter, the first of three to be delivered to the Navy, and is designed to fold into a compact package so that it may be paraded in enemy territory. Weighing less than the average man, the Minicopter is capable of lifting three times its own weight. With the addition of a small engine and push propeller, the next two will be capable of missions of up to 250 miles.

The Minicopter is powered by miniature half-pound rocket engines faired into each of the two blade tips. They convert hydrogen peroxide fuel into steam and oxygen—thus causing no air pollution and making less noise than conventional helicopters.

A single flight control handle called the "mono-trol" converts control of the helicopter from the complex use of both hands and feet to a simple, one-hand operation. The level of pilot training required is expected to be not much more than that which is required to learn to ride a motorcycle.

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## NEW WAY TO EXTEND BATTERY LIFE

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Scientists of the Naval Underwater Systems Center (NUSC) have discovered a way to improve electrodes and thus extend the life of zinc-silver oxide cells (batteries). This is an important find since this type battery can hold a greater charge than other rechargeable batteries, but is much more expensive than most.

The NUSC study was concerned with electrodes and their individual contribution to the battery cell. Of the two electrodes, the zinc electrode is much less stable than is the silver oxide electrode.

The zinc electrode tends to react with the highly alkaline battery electrolyte (40 per cent potassium hydroxide solution) and, as the battery is discharged to provide electrical energy, it is changed to zinc oxide, which is highly soluble in the alkaline electrolyte. The zinc battery plate suffers considerable damage during repeated cycles of discharges and recharges.

In trying to solve the problem, scientists at the Materials Laboratory at NUSC discovered a way to fabricate zinc electrodes which are not so easily damaged. The NUSC plates are made by mixing a small amount of neoprene latex (a synthetic in liquid form which dries to a rubbery substance) with zinc dust. This mixture is spread and pressed onto a silver screen-like grid, then dried, and the electrode plate is complete.

The improved electrode has provided a way to extend the cycle life of zinc-silver oxide cells. Testing in full-sized torpedo propulsion cells has demonstrated that the plates show essentially no damage after repeated discharges and recharges. This additional cycle life can be translated directly into higher reliability of batteries, plus dollars saved.



Above: Pilot Jerry Alexander test flies an Aerospace General Company mini-copter near the Pentagon. Facing Page: This deep-sea anchor, successfully tested in depths to 12,200 feet, is designed to provide a practical, reliable and efficient mooring for deep-ocean systems, surface and subsurface structures.

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## HIGH QUALITY FIREFIGHTING WATER

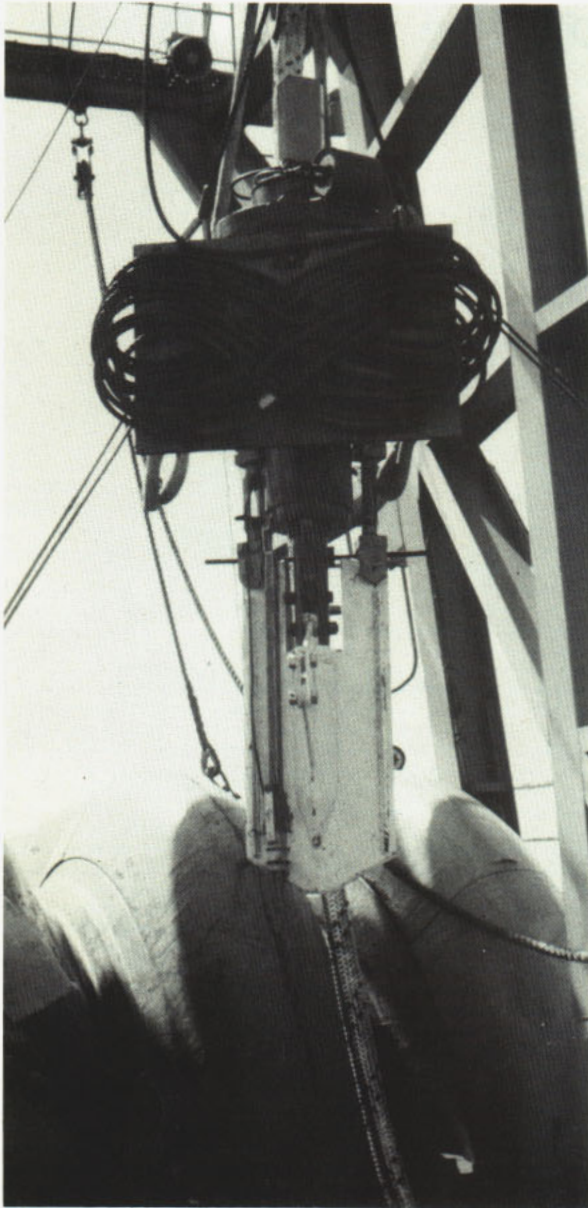
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The effectiveness of water for firefighting can now be improved thanks to a spinoff of polymer research conducted at the Naval Undersea Center (NUC) under the sponsorship of the Office of Naval Research.

The problem has been that a water jet leaving a fire hose nozzle is broken up by air friction and scattered into droplets which flare out to form a cone-shaped spray. This reduces its extinguishing ability. During tests aimed at reducing turbulent friction of water in fire hoses, polymer was injected into the water and researchers discovered that the polymer also reduced water jet dispersion.

Further investigations using high speed cameras to photograph water being sprayed from a nozzle were then made. They showed that a jet structure is initially made up of a smooth, even flow, but a series of eruptions then occurs on the surface of the jet, and spray droplets begin breaking off as an oscillating wave region is formed. Introduction of polymer at concentrations of 10 parts per million (ppm) showed a substantial reduction in formation of spray droplets. At concentrations of 50 ppm and above, spray formation ceased. At 200 ppm the polymer forms filaments which actually link all the drops together. Polymer, then, makes the water more coherent and more effective in fighting fires.

A previous NUC polymer research spinoff was achieved in 1972 when it was discovered that polymer solutions reduced turbulence of blood flow and thus the work of the heart during transfusions and in cases of persons suffering from atherosclerosis.



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### DEEP-SEA ANCHOR

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In the latest of a continuing series of deep-ocean anchoring tests, the deep-water anchor developed by the Civil Engineering Laboratory (CEL) at Port Hueneme, Calif., has been successfully tested three times at depths between 8000 and 12,200 feet.

At the 12,200-foot depth, the propellant-actuated anchor, fired into the ocean floor by an explosive charge, held 48,000 pounds, more than twice its design capacity. It is designed to hold 20,000 pounds indefinitely in all types of seafloors from soft clay to hard rock.

Two of the recent tests were in soft clay at 8000 feet off the East Coast. The test at 12,200 feet was in stiffer, deep-ocean (hemipelagic) clay.

For these tests a sediment fluke, one and a half feet by three feet, was fired harpoon-style into the seafloor, using a propellant charge of 3.2 pounds of Navy Pyro at a maximum speed of 400 miles per hour or 590 feet per second. The key to the anchor's launch system is a sawed-off surplus Army 90mm gun barrel (combined with steel pipe to minimize recoil action), an arming device, and electronics to fire the propellant.

CEL project engineer Robert J. Taylor said that, although the anchor is considered functional, additional reliability data is required beyond that gathered in the more than 20 deep-sea trials conducted so far. During this year, additional data will be obtained from tests in a variety of sea-floor materials.

According to Taylor, the overall objective of the deep-water project is to develop a practical, reliable and efficient anchor to moor deep-ocean systems, surface and subsurface structures. The anchor may also be adapted to moor various platforms, such as instrumentation devices, buoys, weather stations and research vessels.

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### CONCRETE FOR DEEP-SEA BUILDING

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**Problem:** Find a building material for deep-ocean construction which is inexpensive, corrosion-resistant, reacts well to compression and can be fabricated at thicknesses which provide buoyancy control. The possible solution: concrete. But how does concrete react in seawater?

To find the answer to this question, the Navy's Civil Engineering Laboratory (CEL), Port Hueneme, Calif., began a 10-year research project in 1971. Eighteen concrete spheres were placed into the ocean at depths of from 2000 to 5000 feet. (See ALL HANDS, April 1972, p. 30.) Each sphere weighs more than 4000 pounds, has an outside diameter of 66 inches and has four-inch-thick walls. This is the first time such a large scale test has been programmed over a prolonged period of time.

Inspections made recently have revealed some interesting data. The structures contained less water than was originally expected. The average seepage into eight epoxy-coated spheres was about six gallons each, and for the remaining spheres, which were uncoated, about 12 gallons each. Pressure chamber tests had indicated twice this permeability for the spheres. Inspection also showed that seawater seepage decreased with time.

Not all of the spheres have escaped failure. Of the 15 inspected within the first 30 months of the project, two had imploded (one at 4330 feet, the other at 3725 feet) and a third had developed a slow leak and had sunk to the ocean floor. The seven deepest spheres are also expected to fail eventually because ocean pressures at those depths approach the long-term failure pressures of the spheres. The sustained loads will cause them to implode under static fatigue.

The CEL is the only laboratory conducting research of pressure-resistant concrete structures for deep-ocean construction and considers the material ideal. Some engineers believe that within 15 years large concrete structures with diameters up to 100 feet will be built on the ocean bottom. (→)

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## SPACEMEN TO TRY X-RAY EXPERIMENT

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After the historical linkup between the *Apollo-Soyuz* spacecraft set for 15 July, Russian and American spacemen aboard the satellite-laboratory will conduct a series of experiments and observations. Among them is an X-ray experiment developed by a team of scientists at the Naval Research Laboratory (NRL) in Washington, D. C., which has the spacemen scheduled to produce a detailed map of celestial X-ray emissions in a region of space where no satellite observations have yet been made.

Developers Dr. Seth Shulman and Gilbert Fritz, of the Laboratory's Space Science Division, say the map will make it possible for scientists to pinpoint and examine new X-ray sources and compare them with known sources, such as radio loops and supernova (extremely bright star) remnants. Further studies may reveal the origin of the emission to be either within or outside of the Milky Way galaxy, of which our solar system is a part.

The NRL X-ray detector will also be used to observe the earth, in addition to scanning space. These terrestrial observations should enable the astronauts to detect atmospheric X-ray emissions connected with the earth's auroral activity (northern lights) and particle precipitation—during times when the earth's magnetic field is disturbed by particles ejected from the sun toward the earth.

The NRL research team reports that these studies may provide a wealth of new information on the emission mechanisms which produce some of the most exciting phenomena in high energy astrophysics. Previously, these X-ray studies have been flown only briefly on small sounding rockets. However, this X-ray experiment is expected to last up to 10 days.

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## IS THE RADIO WORKING?

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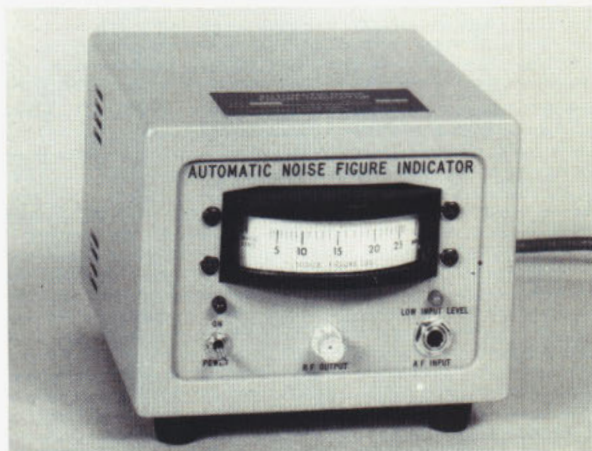
The skipper needs to know if the radio is working—especially during deployments and Fleet exercises. The technique of finding out has been for a technician to lug a bulky signal generator to various parts of the ship in order to measure sensitivity of the many receivers. Once the gear is in place, actual measurements are a time-consuming process.

In response to this need for a quick, simple means of determining radio receiver sensitivity, the Naval Electronics Laboratory Center (NELC), San Diego, has developed, and is now testing in the Fleet, the Automatic Noise Figure Indicator (ANFI). This small, hand-held, off-line test instrument automatically and continuously measures and displays the noise figure of most common Navy radio receivers.

To use the ANFI, a technician needs only connect it to the receiver to be tested and read the meter. Technical knowledge for its use is minimal and the test, which requires an hour or more to be made with present equipment, can be completed in two minutes. Addi-

tionally, the cost of the ANFI is one-third of the cost of present equipment and it requires a minimum of support and maintenance.

With the ANFI a skipper can determine quickly and reliably the operational status of his communication receivers.



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## A GOOD WAY TO PRODUCE NITROFORM

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A method of converting a pollutant by-product into a highly valuable chemical has been developed by scientists at the White Oak Laboratory of the Naval Surface Weapons Center in Silver Spring, Md. The product, nitroform, is required for high-energy missile propellants. The scientists developed nitroform while studying an air pollutant, tetranitromethane (TNM), during an antipollution project. They found that TNM, when isolated from exhaust gases emitted during the manufacture of TNT, can be recovered as a watery solution of nitroform, highly suitable for use in preparing high-energy propellants, and greatly in demand.

Processing units installed at plants involved in the manufacture of TNT, the scientists say, could produce several million pounds of the product each year and at the same time satisfy pollution controls.

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## HEALTH RESEARCH CENTER EXPANDED

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The Navy Medical Neuropsychiatric Research Unit in San Diego, Calif., has been redesignated the Naval Health Research Center with expanded responsibilities for investigating problems of physical and emotional fitness for service in the U. S. Navy. Only emotional or psychiatric problems were previously investigated.

The center is under the command of Captain David R. Ten Eyck, Medical Corps, and is part of the Naval Medical Research and Development Command. It will coordinate research activities in six divisions: environmental and social medicine; psychophysiology research; biological sciences research; stress medicine research; health occupations research; and prisoner of war studies.

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## MOVIE STAR'S EX-YACHT GOES NAVY

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The Naval Postgraduate School's oceanographic ship *Acania* is a familiar sight around Monterey Bay for the ship is now used as a tool for instructing the school's students. In the early 1930s she was the diesel-powered yacht of a well-known movie star (the late Constance Bennett, of the famous stage and screen family).

For most of her life, however, the 126-foot, teak-decked *Acania* has been put to more utilitarian pursuits than those for which she was built. During World War II she saw action with the Coast Guard and was acquired in 1957 by the Stanford Research Institution. In 1969, she was turned over to the government and, in 1971, assigned to the Naval Postgraduate School.

She now "provides a platform in direct support of the oceanographic teaching and research efforts at NPS."

*Acania* is manned by a crew of six and her cruises vary in length from two hours to two weeks. The students on board have studied the physics, biology, chemistry, geology and marine ecology of Monterey Bay to about 400 miles into the Pacific.

NPS researchers often work jointly on projects with scientists from the Office of Naval Research, Stanford University, Scripps Institution of Oceanography, Cornell University and other organizations. Civilian organizations such as the Association of Monterey Bay Area Governments also support *Acania* in her studies of the effects of pollution in the bay and on its plants and animals.

The Bay provides a particularly fertile area for *Acania*'s research because of its great variety of marine life and its huge underwater canyon. *Acania* regularly is used in sampling bay water to determine circulation patterns. Her researchers also measure levels of methane and carbon monoxide gases dissolved in seawater

in the shallow part of the bay. Other projects involve ocean acoustics, interaction of ocean atmosphere and ocean currents, meteorological research and fog prediction studies.

The name *Acania* is a variation on a Spanish word meaning "to be of excellent quality or great worth." The students and faculty of the Naval Postgraduate School think she is just that.

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## NRL LAB PROBES GREEN FLAME MYSTERY

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A team of Naval Research Laboratory chemists in Washington, D. C., conducting combustion research, has discovered the existence of a "green flame" phenomenon closely associated with the blue and hot flames. It is considered an important key to understanding the transition from the blue flame to hot flame, in research aimed at finding ways to counteract spontaneous ignition problems.

The scientists said that the "green flame" evolves from the blue flame when the oxygen-to-fuel ratio is slightly increased. Although the temperature of the green flame is not appreciably higher than that of the blue flame which has a range of from 400 to 800 degrees Centigrade, they added, the chemical processes occurring resemble hot flame reactions which register more than 1000 degrees Centigrade.

They gave the following example: Ions and ultraviolet emission from "excited" carbon dioxide have been observed in the green flames. These phenomena are common in hot flames, but are not observed in the cool or blue flames. The chemists have dubbed their new discovery the "transition flame."

Reactions show that atomic-oxygen processes, characteristic of hot flame, first become important at lower temperatures in the green flame zone.



# PUTTING GOLD TO GOOD USE

At a time when many people are considering speculating in the gold market (and a lot more have given up the idea as being too risky as the price of gold fluctuates every day), there's at least one place where the value remains constant, Yokosuka Naval Base's dental prosthetics laboratory.

At Yokosuka an average of about three ounces of the precious yellow metal is turned into crowns, bridges, inlays or other oral restorations each month. In this form, the gold is more than a monetary substance. It is also a priceless aid to dental health.

"It is the best material for the job," said Dental Technician 1st Brian Hershey. "Gold is one of the most corrosion-resistant metals, so it stands up in the constantly wet environment of the mouth. It is also one of the most easily shaped, so it's ideal for the work

we do in the prosthetic lab."

The five dental technicians who work in the laboratory, attached to the prosthetics department of the Naval Regional Medical Center Japan Dental Service, use a complex process to mold about 40 gold oral appliances a month. The gold comes to the lab in mini-ingots called pennyweights. Each pennyweight is a thin sheet about half the size of a regular postage stamp and weighs exactly 1/20th of an ounce.

Though sizes vary greatly, the average appliance requires about two pennyweights.

Stringent controls are placed on the use of gold. Each month an inventory board, made up of three doctors who are not connected with the metal's use or distribution, convenes to check stocks and records. All gold must be accounted for to the last grain—a grain is equal





Below from left to right: A gold pennyweight on a fingertip. Gold foil, used for certain types of restorative fillings, is compared to a penny. An artificial tooth of exact dimensions specified by a dentist. Right: Dental Technician 1st Brian Hershey weighs a piece of gold using the laboratory's precision weights and scales.

to 1/24th of a pennyweight, or 1/480th of an ounce.

Even though gold is ideal for dental work, its cost is sometimes prohibitive even for health purposes. At Yokosuka, and elsewhere, lower cost substitutes are becoming more often used as funds become more scarce. One substitute is a chromium cobalt alloy, which is far less costly than gold and equally corrosion-resistant. This alloy is harder to mold but it is stronger. The alloy is therefore more suited for building larger appliances for structural besides economic reasons.

If gold prices continue to climb and if individuals in the U. S. begin amassing private stocks, gold dental devices may become a thing of the past. But for now, patients whose cases require it, can play the gold market from a dentist's chair at Yokosuka.



—Story and photos by JOSN Tim Carney



# WOMEN WITH NAVY WINGS

## First For LT Barbara Ann Rainey

In early 1973, then Secretary of the Navy John Warner announced that aviation training for women would begin that spring. The initial group consisted of four women officers on active duty and four women who would soon be entering Officer Candidate School.

Of this number, six went on to become naval aviators and wear their Navy wings today. They are:

- Lieutenant Barbara Ann Rainey, a native of Bethesda, Md., and a graduate of Whittier College, Calif. Before becoming an aviator, she served on the staff of the Supreme Allied Command, Atlantic, in Norfolk, Va. She is currently at VR-30, homeported in Alameda, Calif.

- Ensign Anna Marie Fuqua, of Williamsport, Pa. She is a graduate of the University of California at Santa Barbara, speaks fluent Spanish and holds a private pilot's license. She is currently attached to HC-6, homeported in Norfolk, Va.

- Ensign Joellen Drag, of Castro Valley, Calif. She has a political science degree from California State University at Hayward and is now assigned to HC-3, homeported in Coronado, Calif.

- Lieutenant Judith Ann Neuffer of Wooster, Ohio, and a graduate of Ohio State University. Before earning her wings and assignment to VW-4, homeported at Jacksonville, Fla., LTJG Neuffer served with the Combat Direction Systems Support Activity in San Diego, Calif.

- Lieutenant (jg) Jane Skiles, of Ames, Iowa. A graduate of Iowa State University, she was selected for flight training while attending Officer Candidate School in Newport, R. I. Her current assignment is VR-24, homeported in Rota, Spain.

- Ensign Rosemary B. Conatser, of San Diego, Calif. She is a graduate of Purdue University with a degree in aeronautics and, upon entering the Navy, she held commercial and flight instructor certificates, instrument rating, multiengine rating, flight instrument instructor rating and 620 hours of flying time. ENS Conatser is now assigned to VC-2, homeported in Oceana, Va.

Reinforcements are already undergoing flight training at Pensacola. These include: Ensign Linda E. Vaught, Ensign Mary L. Jorgensen, Ensign Mary C. Giza and Ensign Catherine Mills Gehri.

Following rigorous courses in aerodynamics, engines, swimming, survival training, physical education and, of course, actual flying, these women, too, will be ready to bolster the ranks of their predecessors.

Following these are yet four more women who want to earn their places in the sky. They are Donna L.

Spruill, Pamela A. Hicks, Jill E. Brown and Jean F. McCaig. Upon completion of their current course of study at Officer Candidate School, they, too, will move into the flight training program at Pensacola.

Having overcome the initial shock stemming from woman's entry into "the man's world," Navymen in general are welcoming the idea of sharing their work, their problems and goals with the women in the Navy. The aviation field is but one example of what is happening all over the Navy.

Women are playing a greater role, and their responsibilities are increasing in areas heretofore unknown to them. Here are samples of women in naval aviation.



In these days of female pioneers, Lieutenant Barbara Allen Rainey has earned the distinction of being the Navy's First Woman of Aviation.

Less than a year after completing Flight School at Corpus Christi, Tex., and becoming the Navy's first female aviator, LT Rainey has set another precedent by becoming the first of her sex in the Navy to qualify as a jet pilot.

She is attached to Fleet Tactical Support Squadron Thirty (VR 30) at Naval Air Station, Alameda, Calif., and will be flying the T-39 jets by which that squadron transports ferry pilots and also uses for special VIP flights.

When LT Rainey first arrived at her present duty station she chose to fly the C-1s and the sleek, six-passenger, two-pilot T-39s. Comparing the T-39s to the large C-9s which VR-30 also flies, LT Rainey says, "It's the difference between a limousine and a sports car. I much prefer the sports car feeling I get flying these beautiful planes."

Qualifying as a third pilot of the T-39s required her attending the Rockwell Corp. Flight Safety School in St. Louis, Mo. After that she had to complete the VR-30 flight syllabus, which consisted of six familiarization flights.

LT Rainey was commissioned an ensign in 1970. Before volunteering for flight training she was a communications watch officer on the staff of the Supreme Allied Commander, Atlantic, in Norfolk, Va.

At Corpus Christi she completed flight training with a total of 230 flight hours. During the instruction, all of her flights were flown satisfactorily and without the requirement for any extra instruction to complete the course. She has also been "field carrier-qualified" and completed the necessary requirements to have gone on to the training carrier and actually qualified aboard ship.

LT Rainey has been a doer all her life. The daughter of a retired commander, she was a member of her high school's band and was president of the school's Girls' Recreation Association besides being named as outstanding athlete. She was also a member of the student body council, the National Honor Society, California Scholarship Federation and other student organizations.

While attending Long Beach College, she was on the dean's honor roll during all four semesters and graduated with highest honors. She was an honorary member of Phi Beta Kappa, played intercollegiate sports and was active in the college recreation association.

At Whittier College she was a member of the Thalian Society and actively participated in intercollegiate sports. She received her bachelor's in physical education from Whittier in 1970.

She is married to Lieutenant (jg) John C. Rainey, a 1972 Naval Academy graduate, who is currently assigned to VP-46, Naval Air Station, Moffett Field, Calif.; they live in Fremont.

LT Barbara Allen Rainey, a woman who seeks challenges, has one remaining goal that no female aviator has yet to achieve—she hopes that the day will come when she can land on the deck of a Navy carrier.

—By JO3 Will Larsen

Facing page: LT Rainey, first Navy woman jet pilot, in cockpit of T-39. Below: LT Rainey views the world from pilot's seat.



## WOMEN WITH NAVY WINGS

# LT Judith Ann Neuffer

Until recently, it took men to handle one particularly tough breed of female—the hurricane.

But for the past 10 months Navy Lieutenant Judith Ann Neuffer has been demonstrating that “men only” is no longer the rule when it comes to hurricane hunters. As the first female with the Navy’s Hurricane Hunter Squadron at Jacksonville, Fla., she’s met the challenge of flying in, out, over, under and through the world’s most destructive storms.

The famed hurricane-hunting squadron is on its way into history, since the Navy announced it will be disbanded. The scheduled date is at the end of this month, when the squadron’s aviators will bid farewell to one another and head on to new duty. But the memories of this kind of flying will remain with LT Neuffer as an experience of a lifetime. What has it been like?

“I was a little apprehensive at first,” said Judy, the first woman to fly through a hurricane, “but for the most part I spent my time concentrating on what I was doing.”

The five-foot, seven-inch brunette brought the four-engine P-3 *Orion* aircraft through the storm without mishap but with her nerves slightly frazzled. “All I could see was a white wall of clouds,” she said of her first hurricane flight. But now she agrees with her skipper, Commander Richard W. F. Sirch. “We like to say it’s been a ‘routine experience’ for us,” he said.

Judy came to “the toughest noncombat flying job in the world”—according to her skipper—by way of Wooster, Ohio, Ohio State University and the Navy’s rigorous flight training program.



**Above:** LT Neuffer and LT Fred Krift stand beside WP-3A Orion. **Below:** LT Neuffer inspects aircraft during preflight check.

As one of the first group of eight women to be admitted to Navy flight training, she reported to the Hurricane Hunters after completing tough physical conditioning and intensive inflight instruction in various aircraft.

Although Judy has proven her ability to fly with the elite Hurricane Hunters, she still has problems outside the squadron convincing people that she is, in fact, a female Navy pilot.

“Nobody thinks I’m a pilot,” she said of her experiences, stepping down from the plane after a flight. “They look at my green uniform and black boots and think I’m a nurse along for the ride.”

Judy credits her lifelong desire to fly to her family. Her father, a veteran fighter pilot of World War II, taught her how to fly a Piper Cub at the age of 16. From then until she entered Navy flight training, her life revolved around airports and the people and machines that populate them.

When Judy and her fellow officers take off to inspect their last potential hurricane in the Caribbean, they do so knowing that wind speeds in excess of 150 miles per hour, blinding waves and rain, downdrafts and turbulent eddies may be encountered.

But for Judy, the flight will be routine. “Some day I’ll be an aircraft commander,” she says with conviction. The men who fly with her agree.

After all, anyone who takes on a hurricane is probably willing to take on just about anything.



# ENS Anna Marie Fuqua

can get involved in ASW work. Until then, she busies herself with her scheduling and training job in HC-6. The squadron, headed by Commander John W. Osberg, is a unit of Tactical Support Wing One.

—By LTJG G. L. Kaden, photos by Frank Palmitesso and Alice Lennon

Helicopter Combat Support Squadron Six recently had its newest aviator report aboard, Ensign Anna Marie Fuqua. The petite, brown-haired, 24-year-old pilot arrived at HC-6 determined to fit right in with her male counterparts.

Surprisingly ENS Fuqua does not come from a Navy- or aviation-oriented family. Her father was a civil engineer and the family traveled extensively.

It was during one of those moves that she decided to attend the University of California at Santa Barbara. Upon graduation from UCSB she was still undecided as to what she wanted to do with her life—although a naval career appealed to her. She cited good management training, equal opportunity and equal pay as reasons for considering a career in the Navy.

In November 1972, while in Washington, D. C., Anna Marie talked to a Navy recruiter about her chances of pursuing a career in the Navy. It was then that she first learned of naval aviation for women. The recruiter told her that the Navy was looking for female aviators and he asked her if she was interested.

Since she already had a private pilot's license, Anna Marie knew about the exciting challenges associated with aviation and jumped at the chance to become one of the Navy's first female aviators.

She was sent to Officer Candidate School for four months and graduated in May 1973. Following this, she reported directly to Pensacola, Fla., to begin her flight training and she earned her wings of gold in May 1974.

Anna Marie reported to HS-1 for replacement air group training in Jacksonville, Fla., where she learned to fly the H-3 helicopter. She finished her training in September 1974 and took leave before reporting to HC-6.

During this leave period, Anna Marie was married to LT Harry Fuqua, who is also a naval aviator. He is currently stationed with VRF-31 in Norfolk, Va.

ENS Fuqua hopes that some day she will be allowed to land on combatant type ships and that perhaps she



Above: ENS Fuqua and LTJG Kaden discuss area charts before a flight. Below: ENS Fuqua performs preflight check on the H-3. Bottom: Female pilot receives thumbs-up from HC-6 skipper, CDR John W. Osberg.



## WOMEN WITH NAVY WINGS

# ENS Joellen Drag



"Sometimes the men in the control towers can't believe their ears when they hear my voice over the radio."

Ensign Joellen Drag, a woman in a world of men, is one of the Navy's first women helicopter copilots. The men in the control towers had better get used to it.

Joellen and a dozen or so other women have either entered or have completed naval aviation training. They've taken the necessary tests, passed the physicals and completed what many believe to be the toughest aviation training in the world.

The 24-year-old blonde is a graduate in political science from California State College in Hayward. She completed four months of Officer Candidate School in Newport, R. I., before reporting to the Naval Aviation Schools Command, Pensacola, Fla.

After Pensacola and its rigorous flight instruction, survival training, and hours and hours of practice, Joellen reported to the North Island Naval Air Station, San Diego, Calif., and helo training with Helicopter Support Squadron Three (HC-3). All of this had its good and bad moments.

"Learning the incredibly complicated controls with the hundreds of switches, dials, meters and flashing lights was the toughest part," she said.



The fun part was the aerobatics—loops, rolls, spins and wingovers. “I never got sick,” she said, “but I got some of my instructors a little upset when it was my turn to bring the aircraft up smoothly from a crazy position.”

Joellen is pleased she decided to take the rough road towards becoming a Navy pilot. “My hours are long but I feel more professionally oriented than I would with a lot of jobs in the civilian world,” she said.

“Besides, I’m part of a team, not just a woman.”

Nor are her parents disappointed in her career choice. “My mother wishes she were 30 years younger.” Her father, a retired commander, proudly pinned the wings on her uniform last April as she was graduated from flight training.

Joellen takes seriously the slogan “Join the Navy and see the world.” One day she hopes to be stationed in Japan or the Republic of the Philippines.

She occupies her off-duty hours with a “promising thoroughbred mare” she hopes to train and enter in some shows in a few months.

ENS Drag says that it’s too early to decide if the Navy will be her career but for a woman ensign who likes helicopters, there’s not much she can’t handle.

—Photos by JO3 Susan M. Fisher.



Facing page top: Even aviators become involved with paperwork. Facing page left: ENS Drag listens intently. Facing page right: ENS Drag performs preflight check. Right: The lady aviator climbs aboard Sea Knight helo. Below: ENS Drag crosses parking strip to board helo for another training flight.



● CNO SETS FIVE LONG-RANGE PLANNING GOALS FOR THE NAVY

Since becoming Chief of Naval Operations, Admiral James L. Holloway III has consistently stressed the importance of an effective chain of command. He has publicly and privately stated his firm conviction that "there exists a need for individual involvement at every link in the chain--from seaman to admiral--to solve the problems we face."

To date, he has held two working conferences with the Fleet Commanders-in-Chief and from these sessions have emerged the five major goals around which all Navy planning is proceeding. Knowledge, understanding and support of these goals at all levels down to the newest recruit are important because, in the words of Admiral Holloway, "Profound statements have never solved problems--people have--not because of a press release by an admiral, but because individuals have worked together, each contributing his specific talents, to carry out the tasks assigned to a ship, squadron, or supporting unit. For organizational goals to have real significance, they must also be the personal goals of the individual in a work center." The five major goals listed by the Chief of Naval Operations are:

- Readiness - Overall fleet and individual unit readiness is our most important goal. The only true measure of the Navy's value to the nation shall always be its ability to respond on short notice to carry out its missions--whatever the place, time, or circumstance.
- Flexibility - Perhaps the major value of modern naval forces is their unique flexibility. Recent events have clearly demonstrated the worth of a Navy capable of responding to a wide spectrum of tasks ranging from the projection of national power for the protection of American citizens and interests, to humanitarian missions resulting from natural disasters or accident. Naval power can be moved rapidly and applied in precise quantities. Use of third country air space or territory is not required. Because it is impossible to predict accurately in every instance where or how the Navy will be called upon to respond, we must zealously guard and pursue the skills, concepts and capabilities that contribute to maximum flexibility.
- Offensive Capability - At the very heart of deterrence is the self-evident statement that nobody starts a war he expects to lose. Our ships and aircraft must be able to credibly demonstrate an ability to inflict unacceptable losses upon any potential enemy. A clear realization of this ability by potential enemies will significantly contribute to the prevention of a conflict.
- Balance - Without proper balance, a military force becomes relatively easy to counter and flexibility of action is reduced. Therefore, no single area of naval warfare--aviation, surface, submarine, amphibious, or support--should be excessively emphasized at the expense of others.
- Personnel Professionalism and Stability - The first four goals listed are those which the nation has the right to expect. The achievement of these goals lies in the hands of people. Therefore, every man and woman must strive for the highest possible degree of personal pride in work and professionalism. This requisite professionalism cannot be achieved without constant emphasis on stability in our daily lives. Programs which develop professionalism and stability must receive the highest priority because there is a double payoff--to the individual and to the unit in which he or she serves.



- NEW SHIP-MANNING CONCEPT TO BE TESTED

Tests of a new method of manning active Navy ships are scheduled to begin 1 Jul 1975 and continue for the next two years. Under the concept, known as "80/20," five active destroyer-type ships will be manned by active duty Navy-men to 80 per cent of their normal wartime complement. During mobilization, and for specific training periods, the remaining 20 per cent will be made up of selected inactive duty Reservists. The Reservists will come from five Ship Reinforcement Units (SRUs). Two will be located in the general vicinity of their ship's home port; three will be located inland to test the feasibility of locating SRUs in cities remote from major Navy ports.

When SRU personnel are not on board, the ships will be operated in basic training exercises by the 80 per cent active duty crew, with limited underway time. The "80/20" ships will not routinely deploy overseas.

Two of the ships involved in the tests will be homeported in San Diego and three will be located in major Navy port cities on the East Coast. The names of participating ships and Reserve units and the location of East Coast home ports have not yet been announced. The "80/20" concept is expected to create an annual savings of about one million dollars per ship due to reduced active duty salaries, lower messing and berthing costs and smaller crews. It is being tested in conjunction with the Navy's total force policy which includes increased reliance on Reserve units.

- NAVY DISCONTINUES TWO-YEAR RESERVE AND THREE-YEAR REGULAR ENLISTMENTS

The Navy's "2X6" Reserve and three-year regular enlistment programs will end on 1 Jul 1975. This action is based on improved recruiting of four-year and longer-term enlistees and a servicewide policy to reduce dependency on short-term enlistments. The 2X6 program permits Reserve enlistees to serve two years of active duty, followed by three years in drill pay status and the final year as a standby Reservist. Navy people currently enlisted under this program will not be affected by the change. It was also announced that a new 3X6 Reserve program will be instituted on 1 Jul 1975. Under this program, Reserve enlistees will serve three years on active duty, two years in a drill pay status and the final year as a standby Reservist. This program will be in addition to the existing Air Training and Administration of Reserves (TAR) "3X6" Program.

- NAVY'S NEWEST AIRCRAFT MAKES FIRST DEPLOYMENT

The Navy's newest aircraft, the S-3A "Viking," recently began its first operational employment aboard a carrier. The historic mission was made by members of Air Anti-Submarine Squadron 21 on board USS John F. Kennedy (CV 67).

The twin-engine Viking is the first completely computerized, carrier-based, jet antisubmarine aircraft and replaces the older propeller-driven S-2 Tracker, first flown in 1952.

Viking contains an advanced avionics system designed specifically to keep pace with the increased capabilities of nuclear-powered submarines. Its general purpose digital computer is capable of analyzing and displaying underwater sounds and other data on television-like screens for interpretation. The plane's overall system is capable of rapid and reliable secure communication with other AWS units through data link. The S-3A is designed to carry an array

of ordnance, including homing torpedoes, mines, depth charges, rockets and missiles, plus twice the sonobuoy load of the old S-2.

Viking has an all-weather capability and was specifically designed to perform at both high and low altitudes, providing long endurance and a maximum effective cruise speed.

## ● BRONZE HAMMER AWARD PRESENTED TO SIX INSTALLATIONS

The winners of the third Bronze Hammer Award competition were recently announced. In making the awards, Admiral James L. Holloway III, CNO, said, "resourcefulness and ingenuity" were the words most often used in describing the accomplishments of the installations who won.

The Bronze Hammer Award is presented each year to those Navy activities who, by using available resources, imagination and ingenuity, make the most outstanding contributions to improving the quality of Navy life through their own "Self-Help" efforts.

Individual activity awards were made in four categories:

- Activities with an enlisted allowance greater than 1000 with a Construction Battalion Unit (CBU) in the immediate area. Winner: NAS Alameda, Calif.

- Activities with an enlisted allowance less than 1000 with a CBU in the immediate area. Winner: Naval Receiver Facility, Northwest, Chesapeake, Va.

- Activities with an enlisted allowance greater than 1000 with no CBU in the immediate area. Winner: NAS Chase Field, Tex.

- Activities with an enlisted allowance less than 1000 with no CBU in the immediate area. Winner: NAS Fallon, Nev.

A special award category has been established for any Navy organization, tenant activity, community group, fleet unit, etc., which does not have primary responsibility for real property management of personnel support facilities, but which made significant contribution to the Navy's Self-Help Program and were deserving of recognition. Awards in this category were made to: The Department of Naval Science, California Maritime Academy, Vallejo, Calif., and the Commissary Store Complex, San Diego, Calif.

## ● PROMPT SUBMISSION OF FITNESS REPORTS REQUESTED BY VCNO

The Vice Chief of Naval Operations has recently requested that commands ensure the timely submission of officer fitness reports. Due to late submissions in the past, selection boards and BuPers distribution officers have been deprived of current officer evaluations necessary to ensure equitable consideration of individual officers.

In an unusual move, he has directed that the Chief of Naval Personnel monitor the timeliness of fitness report submission and advise him of those seniors who are delinquent.

## ● ET VOLUNTEERS SOUGHT FOR SURFACE SHIP NUCLEAR PROPULSION PROGRAM

Length-of-service eligibility requirements have recently been broadened to permit a limited number of outstanding Fleet-experienced electronics technicians to enter the surface ship Naval Nuclear Propulsion Program. Projected expansion of the surface nuclear fleet has increased the need for reactor oper-

ator petty officers (ET) with between four and eight years of service experience, proven performance as technicians and demonstrated leadership ability. Applicants who are accepted for this program will attend nuclear power training for a year and subsequently serve as reactor operators on nuclear carriers, cruisers and DLGNs (to be designated CGNs). Complete details can be found in BuPers Notice 1510 of 12 Feb 1975.

- OPERATION DEEP FREEZE NEEDS VOLUNTEERS

There is an urgent need for Navy people in pay grades E-4 thru E-7 from the UT, CM and CE ratings to volunteer for Operation Deep Freeze's wintering-over party 1975-1976. Also being sought are petty officers E-4 thru E-6 in the HT rating and petty officers E-5 and E-6 in the BT and EN ratings with auxiliary boiler experience. Additional information on special benefits connected with Operation Deep Freeze duty and application procedures are contained in BuPers Notice 1300 of 4 Oct 1974.

- SECNAV TOP MESSES AND CLUB AWARD WINNERS CHOSEN

Winners of SecNav's 1974 Messes and Club Awards Program were recently announced. They are: Commissioned Officers' Mess, Open, NavSta Charleston, S. C.; Commissioned Officers' Mess, Closed, NAS Corpus Christi, Tex.; Commissioned Officers' Mess, Closed (with social functions), NavPhiBase, Coronado, Calif.; Chief Petty Officers' Mess, Open, NavPhiBase, Little Creek, Va.; Petty Officers' Mess, Open, NavSta San Diego, Calif.; Enlisted Men's Club, NavSta Rota, Spain. The annual competition is held to promote excellence in Navy messes and clubs through recognition of those individual activities which have demonstrated outstanding service to their patrons, sound fiscal controls and effective management. The program is cosponsored by the Club Managers Association of America. Awards were presented to the winning mess and club managers at the CMAA convention in Vancouver, B. C.

- BICENTENNIAL COORDINATION OFFICE SEEKS IDEAS, OFFERS GUIDANCE

Because of strict budgetary limitations, the Navy's participation in the nation's Bicentennial must rely heavily on the sharing of efforts. To accomplish this, and to coordinate the Navy's role at the local and national levels, SecNav established the Bicentennial Coordination Office (BCO) last year (see ALL HANDS, January 1975, page 42). The BCO is still seeking creative suggestions, and is standing by to assist you in planning your celebrations.

To help in the sharing of ideas and to invite news of Bicentennial planning at the local and fleet level, the BCO publishes a monthly Bicentennial Newsletter. Because of budget restrictions, this Newsletter has limited distribution which includes news disseminating activities, District Commandants and their Public Affairs Officers and the Fleet Commanders. BCO hopes that through this Newsletter, news will reach field and fleet of Navy, other services, civilian organizations, federal, state, local and foreign governments' Bicentennial activities. BCO stands ready to coordinate, share information and ideas, and to solicit news of what YOU are doing for the Bicentennial. Write: Bicentennial Coordination Office, Office of the Under Secretary of the Navy, Department of the Navy, Washington, D. C. 20350, or telephone 694-1776 or 694-1976.

## from the desk of the **Master Chief Petty Officer of the Navy**

### 'Effective Feedback'

I have indicated on several occasions that the MCPOC/MCPOF/MCPON "chain of communications" really works. This fact was effectively demonstrated during the recent Master Chief Petty Officer of the Fleet/Force Conference here in Washington.

Five of the Master Chief Petty Officers of the Fleet/Force, representing all segments of the enlisted community, convened at the Bureau of Naval Personnel on 23 and 24 January for meetings with top-level naval authorities.

These five senior Navy enlisted personnel traveled to Washington with their respective fleet or force commanders, since a Fleet Commander-in-Chief Conference with the Chief of Naval Operations was scheduled during the same time frame. The Master Chief Petty Officers of the Fleet/Force present included: Master Chief Gerry Gray, U. S. Atlantic Fleet; Master Chief George Ingram, U. S. Pacific Fleet; Master Chief Sedgwick West, U. S. Naval Forces, Europe; Master Chief Duane Harris, Naval Education and Training Command; and Master Chief Richard Johnson, U. S. Naval Reserve.

Before their trip to Washington, these master chiefs had an opportunity to meet or consult with other master chief petty officers of the force and master chief petty officers of the command within their chain of communications. In this way, each master chief came to the conference well armed with information, questions, and problem areas from his respective fleet or commands.

The master chiefs were faced with a very demanding schedule during their two-day conference, which included meetings with 16 authorities who supplied expertise in a wide range of topics of direct concern to enlisted personnel and their dependents.

Among the speakers were VADM Emmett H. Tidd, Commander, Navy Recruiting Command; RADM Charles H. Griffith, Assistant Chief of Naval Personnel for Enlisted Personnel Development and Distribution; RADM Charles F. Rauch, Assistant Chief of Naval Personnel for Human Goals; RADM A. J. Whittle, Head, General Planning and Programming Division (Budget); and RADM J. G. Schoggen, SC, Commanding Officer, Navy Resale System.

The master chiefs were also given the most up-to-date information available on CHAMPUS, performance, evaluations, advancements, recent and pending legislation which affects Navy personnel, uniform matters, grooming standards, NEOCS, BEQ management, retention/career counseling, special services, and ships' habitability. Additionally, the master chiefs were able to meet and talk with Mr. Bob Nolan, National Executive Secretary of the Fleet Reserve, and Mr. Jim Clark, editor of the *Naval Affairs* magazine.

After each presentation, the master chiefs were given an opportunity to ask questions of the experts. Additionally, time was allotted to permit the experts to receive input from the master chiefs on items which might be valuable for future consideration.

In my estimation, each of the sessions was very informative and supplied the master chiefs with valuable information to take back to their Navy communities. The "give-and-take" atmosphere of these work sessions proved very exciting and was an excellent forum for liaison between the decision-makers at the Bureau level and our enlisted members in the fleet. As a result, I am convinced that our chain of communications has been further strengthened and enhanced.

At the conclusion of the conference, the five master chiefs reported to both the Chief of Naval Opera-

### **ALL-WEATHER NAVIGATION SATELLITES**

Navy's all-weather navigation satellite system will celebrate its 11th birthday next July.

The system, composed of six satellites in polar orbits, numerous ground tracking stations and shipboard receivers, enables Navy ships and over 300 commercial, civilian and research vessels to pinpoint their positions within a city block anywhere on earth. Users can obtain accurate position information any time of the day or night and during any weather condition.

The system, initiated in 1958, originally was designed and developed for the Navy under a contract with the Johns Hopkins Applied Physics Laboratory. This system was released by the government for commercial and public use in 1967.

According to the Navy's Astronautics Group at Point

Mugu, which has operational and managerial control of the system, the number of military and civilian users of the system has steadily grown since inception. Last August, for example, it had more than 500 users—up from 270 last year. The number of military users increased to 375. Also, more foreign ships are using the system. Among these are vessels from England, Canada, Belgium, Japan, Sweden, France and the Soviet Union.

The system represents the only operational use of satellites for navigation in the history of space development. Its satellites, tracking stations and ship receivers have been used to assist Navy ships in arriving at the recovery of *Apollo* and *Skylab* astronauts. The system has also guided Navy ships in circumnavigating the earth.

The idea for the Navy's all-weather navigation Satellite System came about when scientists noticed a



Above: (Left to right) Master Chief Duane Harris, Naval Education and Training Command; Master Chief George Ingram, U. S. Pacific Fleet; Master Chief of the Navy John D. Whittet; ADM James L. Holloway III, Chief of Naval Operations; Master Chief Sedgwick West, U. S. Naval Forces, Europe; Master Chief Gerry Gray, U. S. Atlantic Fleet; Master Chief R. Johnson, U. S. Naval Reserve.

tions, ADM James L. Holloway III, and the Chief of Naval Personnel, VADM David H. Bagley. After ADM Holloway and VADM Bagley expressed their views to the master chiefs on several subjects pertaining to enlisted personnel, the master chief petty officers of the fleet/force made several recommendations to the CNO and CNP concerning current Navy programs and policies.

This conference reaffirmed my belief that feedback from the fleet is invaluable to everyone working at the Bureau level. By utilizing information obtained from our Navy men and women, programs which might have otherwise adversely affected enlisted personnel have been favorably modified or, when modification has not been the appropriate solution, steps have been taken to provide a better and more meaningful explanation of policy decisions.

I fully realize that many Navy members may not have the time or the opportunity to provide feedback directly to me. However, a viable alternative for all enlisted personnel is possible through communication with their respective Master Chief Petty Officers of the Command (MCPOC).

Input provided to the Bureau of Naval Personnel from the master chief petty officers of the command

via their master chief petty officers of the fleet/force has allowed naval leaders and other cognizant authorities to maintain an acute awareness of the concerns, frustrations, and aspirations of those Navy personnel who work on a day-to-day basis to keep the Navy operating at maximum efficiency and readiness.

Additionally, the up-to-date information provided to the master chiefs at the January conference will go a long way toward improving the necessary communications links we have throughout the fleet. The master chiefs, using their newly acquired knowledge, are now better prepared to serve their commands. In this way, each Navy member can benefit from the conference and receive answers or alternatives to his personal needs, questions, and career objectives.

That's why the system really works!!

change in the frequency of radio waves emitted by an orbiting satellite. By measuring the shift, scientists determined the satellite's orbit.

The current satellites, each with a life expectancy of at least 13 years, orbit at an altitude of about 600 miles and broadcast their positions, as well as a continuous signal from which the radio frequency shift measurement is made. The position of each satellite throughout the orbit is computed in advance by a ground tracking station. This data is then transmitted to the satellite every 12 hours for continuous rebroadcast. Aboard ship, the continuous broadcast is picked up by the receiving unit and fed into the computer. The computer read-out gives the ship's position in longitude and latitude at the same time. Other equipment developed for use with the system includes a "backpack set" used in pairs for determining relative positions in any kind of terrain or over water. Another development is

the "Geoceiver" for surveying. This has been used to fix the position of the magnetic South Pole and measure the drift of polar ice.

The most recent development in improving the system occurred in 1972 with the launching of an experimental Disturbance Compensation unit (DISCOS). DISCOS permits a spacecraft to counter external forces of solar radiation pressure and atmospheric drag on the orbiting satellite by means of thrusters. This made it possible to predict the satellite orbit for 12 days. The DISCOS unit is seen as the promise of satellites with such predictable orbits that charts and almanacs of their positions could be printed. According to its proponents, this might even finally eliminate the need for shipboard computers for satellite receiving units and thereby reduce satellite navigation equipment costs by one-half.

—LTJG Chris Taylor

# What would you like to know about

## COLA/HA?

Among the major concerns of anyone headed overseas during inflationary times is economics. Will the U. S. dollar stretch far enough to cover expenses?

One means the Department of Defense has of assuring it will, is by granting additional monetary allowances, as necessary, to balance an individual's or family's income against the cost of overseas living expense when that cost is greater than would be experienced stateside.

There are two types of station allowances: Cost of Living Allowance (COLA) and Housing Allowance (HA).

What an allowance can mean to you in terms of dollars and cents can be best understood, perhaps, by becoming familiar with how an allowance is established.

A Department of Defense activity called the Per Diem, Travel and Transportation Allowance Committee is responsible for determining whether or not an overseas cost of living or housing allowance is authorized and how much. The committee gathers data on the cost of living in the U. S. and overseas locations from a variety of sources. In the United States, for instance, the Bureau of Labor Statistics publishes data on the level of prices for goods and services, the military services provide price lists of commissary store prices and exchange services provide price lists in their facilities. Combining these, the committee uses a "market basket" method in which some 700 prices covering 160 different goods and services are used as a basis of comparison with overseas areas.

Data from overseas areas on the costs of similar goods and services in both military and commercial outlets is provided by senior commanders, an extremely important input, in that it is used to determine the need for station allowances at overseas locations.

Once the committee has determined the average cost-of-living prices for both stateside and the overseas area, it compares these prices to determine the ratio

between them. This ratio, stated as a percentage of stateside prices, is rounded to the nearest two per cent (for example, 101.51 is rounded up to 102; 104.9 is rounded down to 104) and related to precomputed cost-of-living tables contained in the Joint Travel Regulations for each pay grade. Separate allowances are provided for unaccompanied personnel and accompanied personnel with small allowance differences from one to five or more dependents. These precomputed tables show percentages of the amount of pay available for living in the United States after allowances for quarters have been excluded and after average taxes, gifts, contributions, life insurance, and savings have been deducted. The table for COLA Index 110 then would recognize and pay a member 10 percent of what it would have cost him to live in the U. S. in recognition of higher costs at an overseas station where comparison with the U. S. showed a rate of 110.

Tables are currently provided for all steps from 102 to 198. Additional tables will be prescribed, if ever found necessary.

In line with this comparison, estimates are made of the relative importance of the various sources of supply. Using clothing as just one example, what per cent is bought locally at government outlets? What per cent is bought locally at commercial outlets? What per cent is ordered from the States? Incidentally, members of the uniformed services in the United States purchase 75 per cent of their food from military sources and 25 per cent from commercial sources.

Another factor that enters into the index is the relative importance of expenditures for such family budget items as food, clothing, recreation, medical care, transportation and so forth. At the overseas location, for instance, there may be no government medical facilities available. On the other hand, free recreational facilities may be present in large measure.

The differences in volume of purchases brought about by the climatic, economic, cultural and other aspects peculiar to a particular overseas location are also considered. Individuals living in Alaska or Newfoundland, for example, would spend—on the whole—far more on clothing, on a year-round basis, than those in tropic climates. For another example, automobile owners living in a relatively underdeveloped area would find the wear and tear on their cars and tires much greater than if they were in a location with well paved roads.

That is about the extent of what goes into the development of COLA. A housing allowance is intended to compensate you for the greater costs of rent, utilities and "moving-in" costs." The housing costs at the overseas locations are compared with the average basic allowances for quarters (ranging from \$110.70 for a 3rd class petty officer to \$303.90 for an admiral, monthly) received by members in the overseas area. A little

figuring shows that this often allows for a favorable HA, because the monthly overseas housing expenses are, in most cases, greater than the BAQ.

"Moving-in" or initial occupancy costs are factors figured into HA. Such costs are those brought about in bringing a residence up to American standards. Improvements in the plumbing, electrical system and gas and heating installations, and painting, papering, plastering, screening and shelving are included.

The initial costs are divided by the number of months of the average overseas tour at the location. This amount is combined with the average monthly rental costs and utilities costs by pay grade to obtain an average overall monthly housing cost. When the average BAQ for each pay grade is subtracted from the overall housing costs, the difference is the housing allowance. It is not a monthly figure, but instead it is divided by 30 and expressed as a per diem.

There are two important elements that affect both COLA and HA. First, fluctuations in the rate of exchange of the dollar and the local country currency can result in either increases or decreases in the prescribed allowances. For example, if the exchange rate of the dollar improves relative to that of the foreign currency, then the cost of local housing, goods and services decreases in terms of the purchasing power of the dollar. Secondly, the inflation rate in the United States has been increasing steadily over the past few years and in many instances the rate of inflation in the States has been in excess of the rate of inflation experienced in certain overseas areas.

The net effect of this is that the stateside base which is used as a comparison against the overseas costs is rising faster than overseas inflated costs.

For instance, if overseas prices increase by five per cent during a given period and the stateside base increases 10 per cent during the same period, then a cut in the COLA is warranted—and required by law—in order that the relative stateside and overseas ratio is maintained. This point is perhaps the most difficult to understand and accept. However, one consolation is that, if the overseas inflation is greater than that of the United States and if a COLA is otherwise justified, then the COLA would be increased by an appropriate amount.

Here's the background on station allowances as discussed—station allowances are carefully computed amounts paid to personnel assigned overseas to equalize differences between all elements of stateside living and overseas living. Station allowances are not paid to compensate for duty at a remote location, or a location with few off-station facilities, or a station subject to unpleasant weather most of the year. Nor are they paid for people representing the United States in a foreign area.

Allowances for each location are reviewed annually

and are subject to change at any time. They are established by the Per Diem Travel and Transportation Committee, created 25 years ago to carry out certain provisions of the Career Compensation Act of 1949.

Operating as an independent agency under the broad policy control of the Secretary of Defense, its members are of the level of Under Secretary or Assistant Secretary of the Army, Navy and Air Force. Equivalent officials of the Department of Transportation (for the Coast Guard), Commerce (for the National Oceanic and Atmospheric Administration (NOAA) and Health, Education and Welfare (for the Public Health Service) take collateral action on all committee determinations. *Joint Travel Regulations* is the committee's publication.

Most of the day-to-day work is carried out by an advisory panel comprised of an officer of each of the uniformed services and a civilian staff. Both the group and staff are headed by an executive officer. This chief position is rotated among the Army, Navy and Air Force.

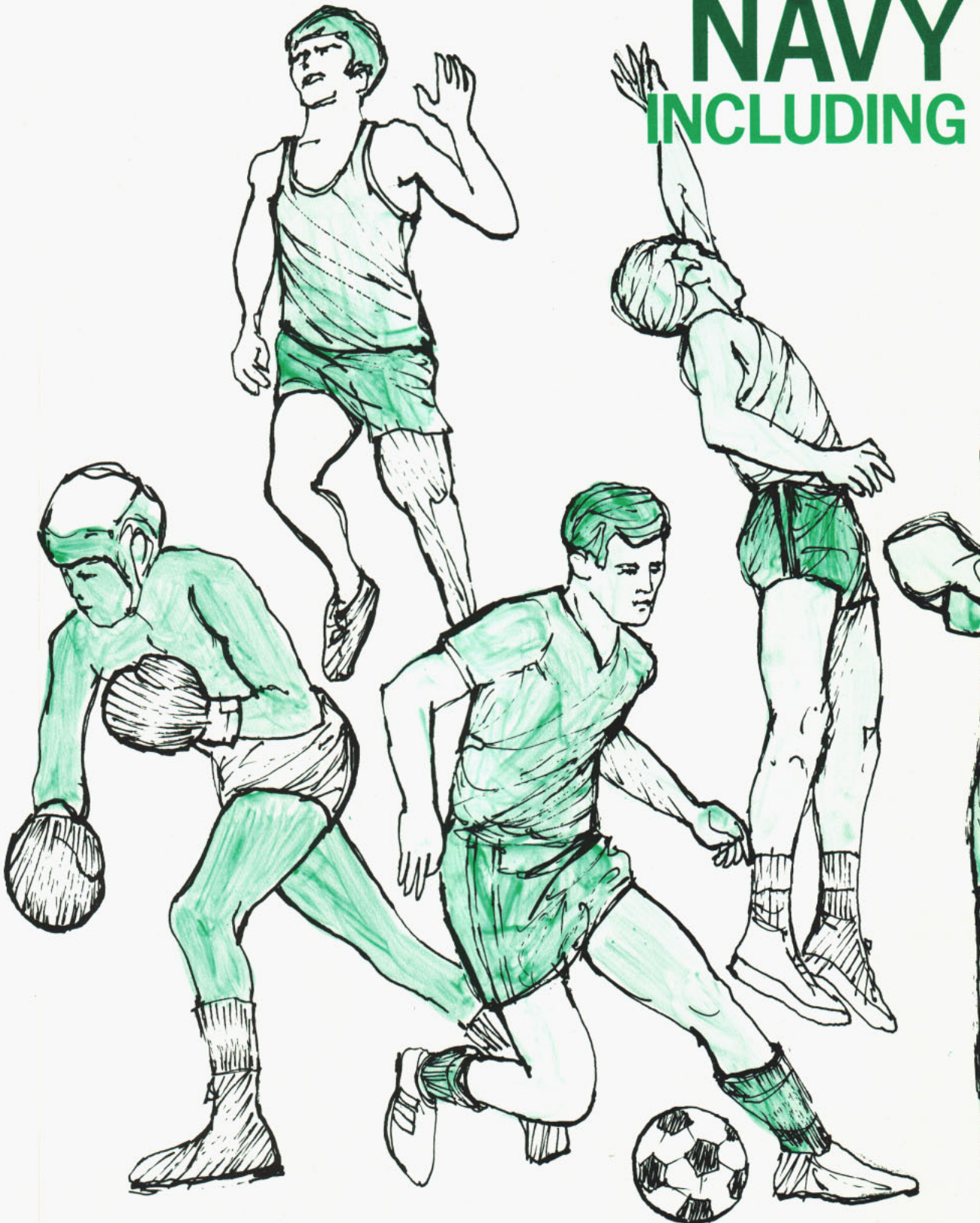
A good part of the staff's work deals with reducing to tables a mass of rough statistical material in the form of annual reports from more than 80 countries. The committee members not only deal with reports coming in, but also, they or their representatives go out and get a firsthand look at overseas locations, and make any changes accordingly.

Following is a representative listing of daily per diem, housing and cost of living allowances for Yokosuka, Japan, as taken from Appendixes B and C of *Joint Travel Regulations*:

Cost of Living Index.....	104
Travel Per Diem Allowance .....	\$34.00

Grade	Housing Allowance		Cost of Living Allowance	
	W/O Dependents	With Dependents	W/O Dependents	With 3 Dependents (average family)
O-10				
thru O-8	\$2.65	\$3.35	\$.80	\$1.05
O-7	2.65	3.35	.75	1.05
O-6	2.45	3.00	.75	1.00
O-5	2.30	2.80	.75	1.00
O-4	2.10	2.45	.70	1.00
O-3	1.85	2.25	.70	.95
O-2	1.60	2.05	.65	.85
O-1	1.25	1.65	.60	.75
W-4	2.00	2.40	.70	1.00
W-3	1.80	2.20	.70	.95
W-2	1.60	2.00	.65	.85
W-1	1.45	1.85	.60	.80
E-9	1.55	2.15	.70	.95
E-8	1.45	2.00	.65	.90
E-7	1.25	1.85	.65	.85
E-6	1.15	1.75	.60	.80
E-5	1.10	1.60	.55	.70
E-4	.95	1.40	.50	.65
E-3	.85	1.25	.45	.65
E-2	.75	1.25	.45	.60
E-1	.70	1.25	.45	.60

# NAVY INCLUDING





# SPORTS ROUNDUP

## A PREVIEW OF ALL-NAVY SPORTS



What do a french horn-playing golfer, a hockey goalie and a Boston Marathon runner have in common? They are all Navymen, for one thing, and they're all proof that the Navy sports scene produces many outstanding personalities every year.

At NAS Miramar, Hospitalman Apprentice John Kuklinski has his eye on the goalie slot with the 1976 Olympic Hockey Team. Kuklinski, a hockey nut since childhood, became actively involved in the sport when he joined the Junior Hockey Team in his hometown of Phoenix, Ariz., while he was in high school.

Kuklinski's second interest has always been medicine, and he wanted to get into physical therapy with the big hockey teams after high school. His eagerness and abilities got him a job as Assistant Trainer (physical therapist) with the Western Hockey League's Phoenix Roadrunners. His duties included the prevention and treatment of injuries, helping to maintain the team's equipment and sharpening players skates. He also learned about the rigidity of a professional athlete's life, where it isn't unusual to practice seven hours a day to build stamina and polish techniques.

Kuklinski held the Roadrunner job for two and one-half seasons before joining the Navy. In the final half-season he was also the team's third goalie as well as Assistant Trainer. He also played one season in Chicago as goalie in the Senior Hockey League, and was offered a job as trainer for the Houston Aeros of the World Hockey Association. Being in the Navy, he had to refuse.

Currently, Kuklinski is goalie for the Senior Hockey League team in Mira Mesa, Calif. In what little spare time he has between his Navy duties at the Miramar dispensary, and the team's activities he practices for the Olympic tryouts.

"It really gives me a great personal satisfaction being goalie," he said. "When those would-be goals are stopped, it's totally me, and I know I did it without any help from anybody else."

Kuklinski hopes to get a degree in physical therapy, and some day play goalie with a National Hockey League team. "Hockey is a part of my whole life," he said. "I kind of live for it, I guess."

That french horn-playing golfer displayed his sports talent by achieving the dream of every golfer, a hole-

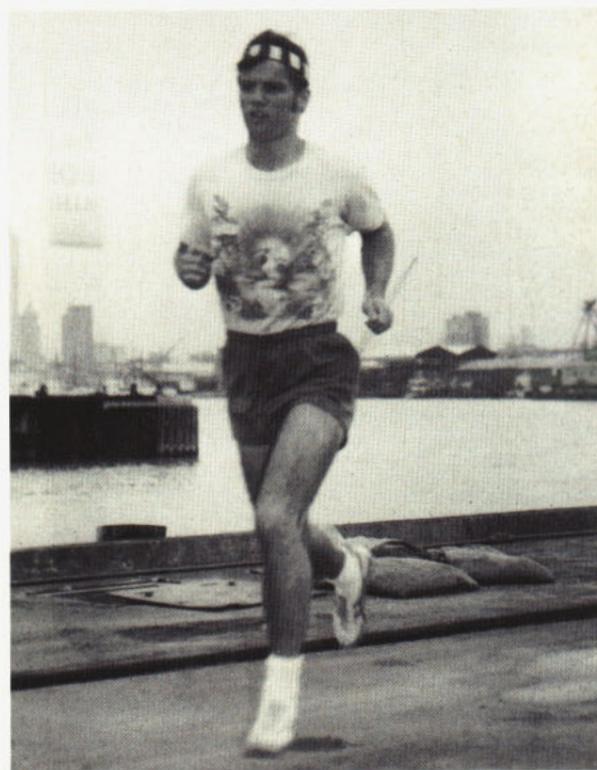
in-one. But once wasn't enough for Chief Musician Doug Bailard, a member of the U. S. Navy Band; he did it twice in one month.

The first came during a practice round, while getting ready for the Naval District Washington tournament last year, when he plunked in a five-iron shot on the 176-yard fourth hole at the Laurel Pine Country Club. Three weeks later, during the NDW Tournament, he lofted a seven-iron shot onto the 14th green and into the cup for his second hole-in-one. At the time, Bailard was a member of the U. S. Navy Band golf team that finished fourth among 16 teams in the tournament.

In Boston, Seaman Mark Gibson, of USS *Lexington* (CVT 16), was among the 2000 entries to run in the

grueling 27-mile, 385-yard-long, 78th Boston Marathon. Among those he competed against were former Olympians, contestants from more than 18 foreign countries and many other runners from the U. S. armed forces, including a 21-man delegation from West Point. From that massive and talented field, Gibson finished 53rd with a time of 2:27:58 (the winning time was 2:13:39), an impressive run for any Marathon runner and certainly one to be proud of; he finished first among the armed forces entries.

About 11 miles out, Gibson got severe cramps. "I felt like quitting the race at that point, but the crowd won't let you," he said. "All along the course thousands of people line the streets urging and cheering you



on. You feel that if you quit, you'll let the crowd down more than you will yourself.

"I'll be back," Gibson said. "Now I know the course and realize the mistakes I made . . . I'll be back." Spoken like a true Navyman.

The Navy sports scene over the past year took on an international flavor too. In all parts of the world, ship and station teams were invited to friendly competition by their hosts.

In Egypt, members of Helicopter Combat Support Squadron Six, Detachment Nine, took on a team of soldiers from Ghana in a basketball game. Detachment Nine is part of Operation Nimbus Star, clearing mines from the Suez Canal; the Ghanaians are part of the

UN Emergency Force observing the Middle East truce on the Sinai Peninsula.

The Americans won the game, but that was incidental. The importance of this game, and all the Navy's international sports events, is the friendship it created. It also gave the players on both sides a morning away from their sometimes monotonous duty. The Ghanaians explained that basketball was a relatively new sport to their country, and they had learned several new tactics during the game. They felt they could incorporate some of these tactics in the future development of the sport in Ghana. The promise of a return match was made before the teams returned to their jobs.

Around on the other side of the world, in California, other teams were adding to the internationalism of Navy sports.

In San Diego, the U. S. and British Royal navies met once more in the ongoing Read Cup sailing championship. The Read Cup, or British-American Naval Trophy, has been presented annually since 1954 to encourage team sailing between the two navies. Competition may be held whenever they meet.

This San Diego regatta was between three U. S. teams from local commands and three British teams from HMS Kent. The winning skipper overall was

**Far left top: Two holes-in-one for MUC Doug Ballard within four weeks; photo by MU1 V. Cuthie. Far left bottom: SN Mark Gibson finished 53rd among 2000 entries in the 78th Boston Marathon. Left: Tipoff in the basketball game between members of Helicopter Combat Support Squadron Six, Detachment Nine and soldiers from Ghana; photo by LT Greg Wilson. Below: The pace was fast and furious in the soccer match between USS Oriskany and HMAS Perth.**



AFCM Tom Freed of NAS North Island. His crew were OS2 Fred Borchering and USMC Captain Jim Sanders. The U. S. also won the regatta with a score of 87 to 70. This was the year's fourth match. The U. S. Navy had previously won at San Francisco and in San Diego; the Royal Navy had won at Subic Bay in the Republic of the Philippines.

Farther up the coast, in Long Beach, soccer teams from USS *Oriskany* (CVA 34) and the Australian destroyer HMAS *Perth* squared off for a series of seven soccer matches. Both ships were in the Long Beach Shipyard for overhaul. The outcome of the match is not known, but the first game was disastrous for the Americans. The Aussies scored five goals in the first 30 minutes of play, setting the trend for the game. Just before halftime, *Oriskany's* JO3 Keith Knutson managed to kick in the first goal for the Americans, which made the halftime score 5-1, *Perth*. The Australians scored six more points in the final period.

Although the *Oriskany* team showed determination and hustle, this was the first organized soccer match for most of her players. The opponent, on the other hand, was highly organized and practiced in its national sport—how about some baseball, *Perth*? In any case, the series worked out for both sides. The Australians got some practice; the Americans got some experience, and both teams had a good time of it.

Many champions have been produced from the ranks of Navy sports(women) over recent months.

A while back, Chief Machinist's Mate Al LaChance, a diver at the Naval Undersea Center in Long Beach, spotted an inexpensive bow at a garage sale. He decided that archery might be an interesting sport to take up, so he bought it and became, he said, "instantly serious" about archery.

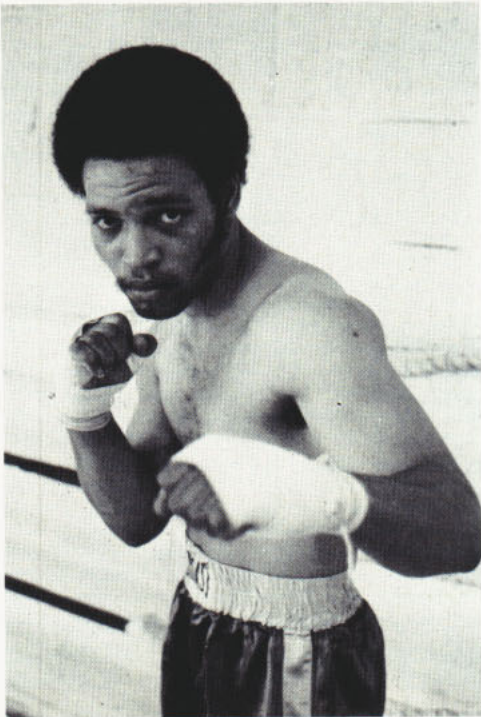
In less than a month he took second place in the first

tournament he entered. Getting into his new thing, LaChance had a 45-pound pull bow designed for him by the top bow maker in the country, and began practicing four hours a day. In less than a year after he took up the sport, LaChance entered the California State Archery Championship and took first place. In doing it, he set a new state scoring record with more than 2600 out of a possible 3000 points. Later, he went to the national competition and placed 36th. He is now preparing for the 1976 U. S. Olympic Team tryouts.

In another sort of shooting match, Construction Mechanic 1st Class Lenard King, an instructor at Construction Mechanic School, Port Hueneme, Calif., was crowned winner of the 28-gauge division at the Armed Forces Skeet Shooting Championships last year in San Diego. King, the first Navyman to capture this title, ran 100 straight "birds" to win the division. He also helped the all-Navy team win its title by placing as high man for the team with the 12-gauge. King was awarded the George Young Memorial Trophy for his 28-gauge win.

King has also competed recently for a spot on the 1976 U. S. Olympic Team. Out of a possible 300 he hit 279 birds, earning a spot in the top 20 of 250 competitors. He pointed out though, that he has had only one year of international shooting experience, as most of the competition the Navy team has been in was under American rules.

In boxing, one of the Navy's champions is Seaman Garry Raymond, the current all-Navy welterweight champion. Boxing is nothing new to Raymond. Before entering the Navy he had won the 1969 and 1970 Oklahoma Golden Gloves welterweight crown, the 1971 Texas Golden Gloves welterweight championship. Last year, while serving at the Little Creek Amphibious Base, he won the Virginia AAU welterweight crown.



In the national AAU Championship tournament held in Nashville, Tenn., he made it to the quarterfinals before being eliminated. Like the champions mentioned above, Raymond hopes to be a part of the 1976 U. S. Olympic Team.

"Boxing takes a lot of practice and work," he said, "because you have to be in top shape so you can give your all while you are in the ring." He practices what he preaches. Each day Raymond does six miles of roadwork and three hours of shadowboxing, rope skipping and heavy punching and speed bag work. After all that he spars several rounds. All for three 3-minute rounds.

And finally on our list of champions, a Navy fisherman won a prize in the Seattle Washington Seafair's \$30,000 Salmon Fishing Derby. Storekeeper 1st Class George Breeding of the Navy Recruiting District Seattle had the dubious distinction of winning the "super consolation prize," a two-man, foot-powered paddle boat, for *not* catching a fish.

"Next year I hope to really give it hell," said Breeding. "If I'm lucky enough to win something for not catching a fish, just imagine what I might win if I catch something."

That's a little of what it has been like recently on the Navy sports scene—some winning, some losing, but all of them really giving it hell.

—JO1 Tom Jansing, USN

From left to right: All Navy Welterweight Champion SN Garry Raymond; photo by JO3 G. Smith. California State Archery Champion Chief Machinist's Mate Al LaChance. Storekeeper 1st Class George Breeding tries out the consolation prize, a two-man paddle boat he won for not catching any fish in the Seafair Salmon Derby, Seattle, Wash.; photo by PH1 J. A. Davidson.



## ALL-NAVY INTERSERVICE EVENTS

The 1975 All-Navy and Interservice Sports Championships are underway. For the next six months Navy men and women who win at the command, district and regional levels will be competing for all-Navy awards in almost a dozen different sports. These winners will then go on to the Interservice Championships. Here is a rundown on the all-Navy and interservice events:

- **Volleyball.** All-Navy: 14-18 Apr, NAS Moffett Field, Calif. Interservice: 28 Apr-2 May, Fort Lewis, Wash. All-Navy competition will be under the U. S. Volleyball Association rules in a double round robin tournament.

- **Bowling.** All-Navy: 28 Apr-2 May, CBC Port Hueneme, Calif. Interservice: 5-9 May, Wright-Patterson AFB, Ohio. All-Navy competition will be for men and women and bowled under the ABC and WIBC rules. Team event: Each member of each team bowls 12 lines. Total pinfall for each team will determine the winner. Doubles event: Each doubles team bowls 6 lines. Total pinfall for each team will determine winner. Singles event: Total pinfall for six lines will determine winner. All events: Total pinfall for 24 lines will determine individual all-events champion.

- **Track and Field.** All-Navy: none. Interservice: 2-6 Jun, The Presidio, San Francisco, Calif. Navy participants to the interservice competition will be selected from nominations forwarded by commands to the Chief of Naval Personnel.

- **Tennis.** All-Navy: 21-25 Jul, PHIBASE, Little Creek, Va. Interservice: 28 Jul-1 Aug, USMA West Point, N. Y. All-Navy competition for men and women will be held under U. S. Lawn Tennis Association rules for singles and doubles. The tournament will be a single elimination type.

- **Sailing.** All-Navy: 28-31 Jul, NavSta Treasure Island, Calif. Interservice: none. Races will be sailed under IYRU rules as adopted by the NAYRU. Seventeen-foot O'Day Sailors with spinnakers, will be used, each manned by one skipper and two crewmembers. Competition will be a round robin type, sailed on an olympic course as modified by the local race committee.

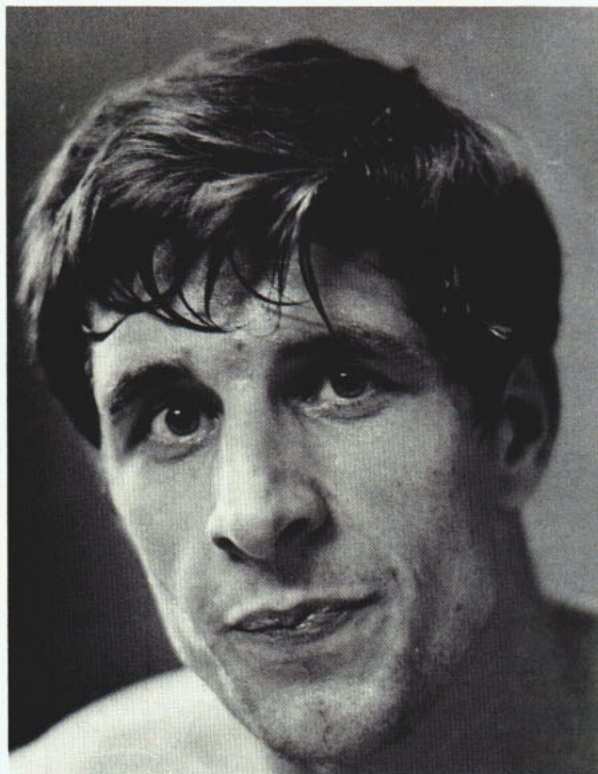
- **Slowpitch softball.** All-Navy: 28 Jul-1 Aug, NavSta Charleston, S. C. Interservice: 11-15 Aug, NavSta Charleston, S. C. All-Navy games will be played under Amateur Softball Association rules in a round robin type tournament. Official restricted flight softballs will be used.

- **Fastpitch Softball.** All-Navy: 25-28 Aug, NAS Memphis, Tenn. Interservice: none. All-Navy games will be played under Amateur Softball Association rules in a double round robin type tournament.

- **Golf.** All-Navy: 8-12 Sep, NAS Pensacola, Fla. Interservice: 15-19 Sep, Camp Lejeune, N. C. All-Navy competition for men and women will be under U. S. Golf Association rules in a 72-hole medal type tournament.

A CHAMPION IN

# THE STRANGE ART OF KICKBOXING



"Success is where you find it," goes the old saying, and sometimes it's found in some mighty strange places. James V. Johnson found his success in the Orient as the heavyweight kickboxing champion of Japan. (He fights in his bare feet.)

The 26-year-old Navy diver is stationed at the Yokosuka Naval Base, 40 miles south of Tokyo, where he performs inspections of ships' hulls and underwater repairs of all kinds. In his free time, Johnson, known as "Jimmy John" in the ring, practices to keep in shape to defend his kickboxing title.

A combination of conventional or western boxing with several of the Oriental martial arts like judo and karate thrown in, almost anything goes in kickboxing. But speed and stamina are the two most important assets. When Jimmy John practices, he spars and shadowboxes like regular boxers and also sharpens his skills by using his elbows, knees and feet.

Jimmy John, a trim six-foot, three-inch 190-pounder, started his off-duty kickboxing career in 1970. Since then, he has fought 21 bouts with only five losses; seven of his wins were by knockouts.

It all started one evening while he was watching a kickboxing match on television at home and he remarked to his Japanese wife, Beniko, that the kickboxer he had seen would not stand a chance if one of the boxing champs trained in the more familiar version of the sport were to get into the ring with him. His wife disagreed and was quick to wager a fur coat against a new car that Jimmy John would not last three weeks as a kickboxer.

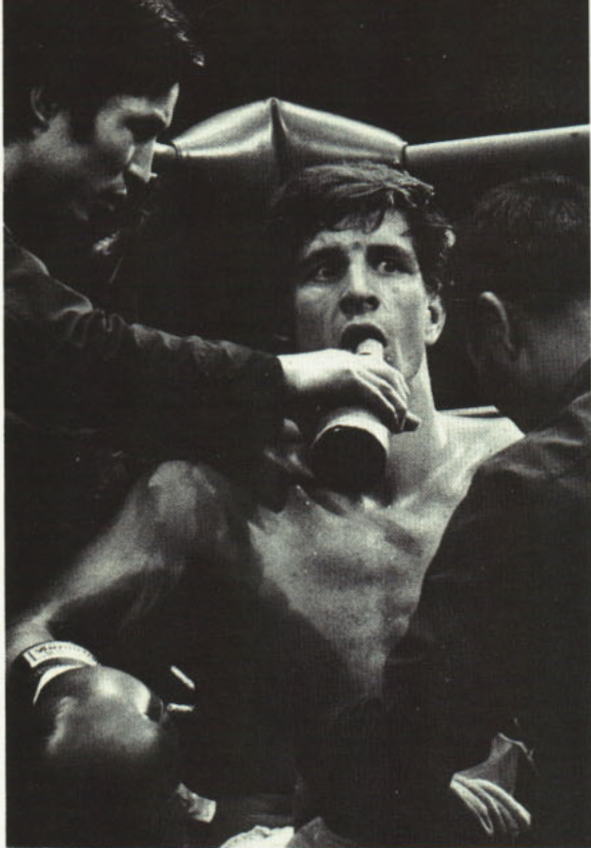
Later, the Johnsons were on holiday leave and Beniko took her husband to a local kickboxer training gym. She explained to the manager and trainers at the gym how her husband felt about kickboxing and he started training on the spot.

Jimmy John discovered that many Japanese welcomed American participation in kickboxing, but from past experience had little faith in their stamina to continue the program. They discovered that even the most highly motivated Americans usually completed less than three weeks of training before dropping out. Because of this, the trainers, who also doubted his sincerity, showed Jimmy John only the basic stance and sent him off to train on his own.

When Jimmy John started training he was a smoker and took an occasional drink. "After the first hour's workout, I was very tired and ready to start shopping for a fur coat," Jimmy John said. "But I didn't want to lose the bet, so I decided to give up both these habits instead."

Four weeks after he started working out, his trainers at the gym noticed his efforts and started teaching him more techniques. They helped him de-





Facing page top: James V. "Jimmy John" Johnson. Facing page bottom: On the job as a Navy diver in Yokosuka, Japan, repairing ships' hulls and other submerged equipment. Left: With the assistance of his trainer and manager, Jimmy John takes a break between rounds. Below: In the ring with a Thai boxer.

velop a suitable training program. Early in 1971, Jimmy John fought his first professional bout—and lost. During his first season, four of his five matches went to his opponents. Depressed, but not ready to throw in the towel, he continued working out in preparation for the next season. Hard work paid off and several months before the season's start he was considered to be the number one contender for Japan's heavyweight title.

Jimmy John met Japan's heavyweight champion, Yosenoba Igano, in the ring for the first time in October 1972. He TKO'd the champ in one minute and 17 seconds of the first round of a five-round title match.

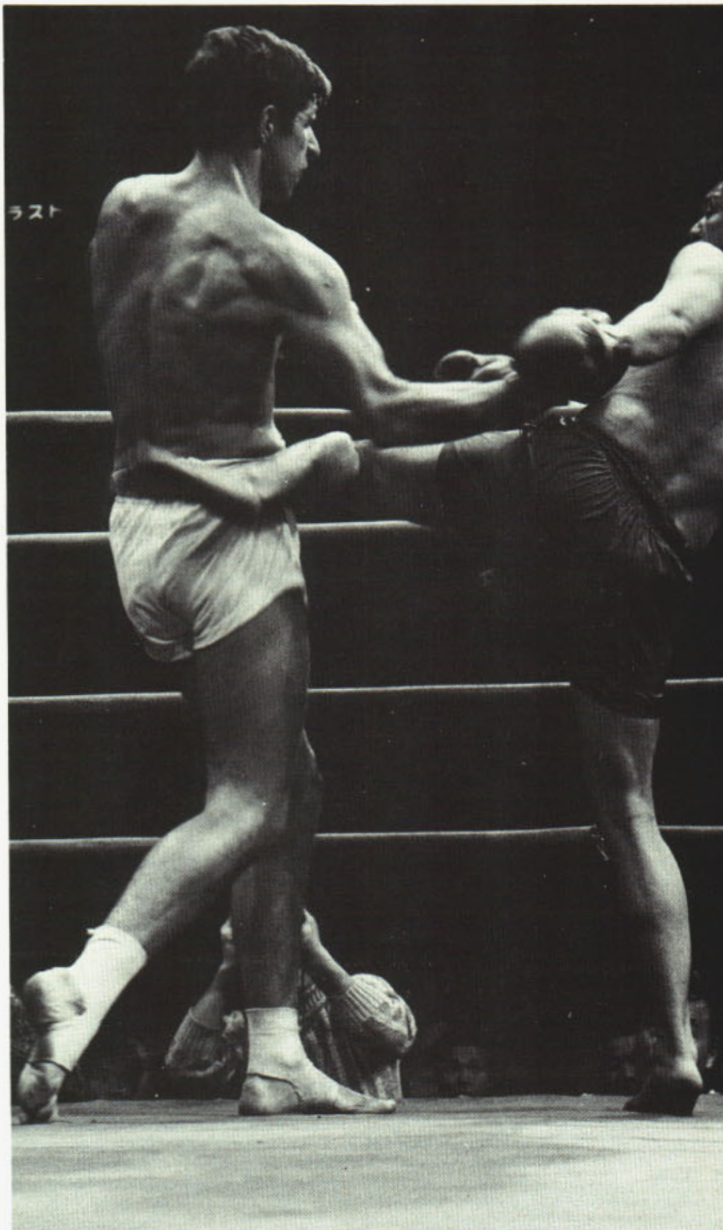
Jimmy John enjoyed the glory of being the all-Japan heavyweight kickboxing champion—until he lost the title during a rematch with Igano in May 1973. Soon after that fight, Jimmy John decided he had enough of kickboxing and retired from the ring.

During the following months he was constantly encouraged by his trainers and members of the boxing commission to return to the ring, or at least help train another American boxer. He agreed to help as a trainer.

Jimmy John's protege entered the ring for his first fight in August 1973 with the American coaching ring-side. "I couldn't take it anymore; watching that fight started my blood boiling. I knew then I had to get back in the ring myself," he said.

As September rolled around Jimmy John started working out in the Japanese gym at a stiffer pace than before. Two months later he met Igano in the ring again, this time in a non-title match. He knocked the champion down four times during the first round and Igano's trainers threw in the towel before the first round ended. The win led to a title bout.

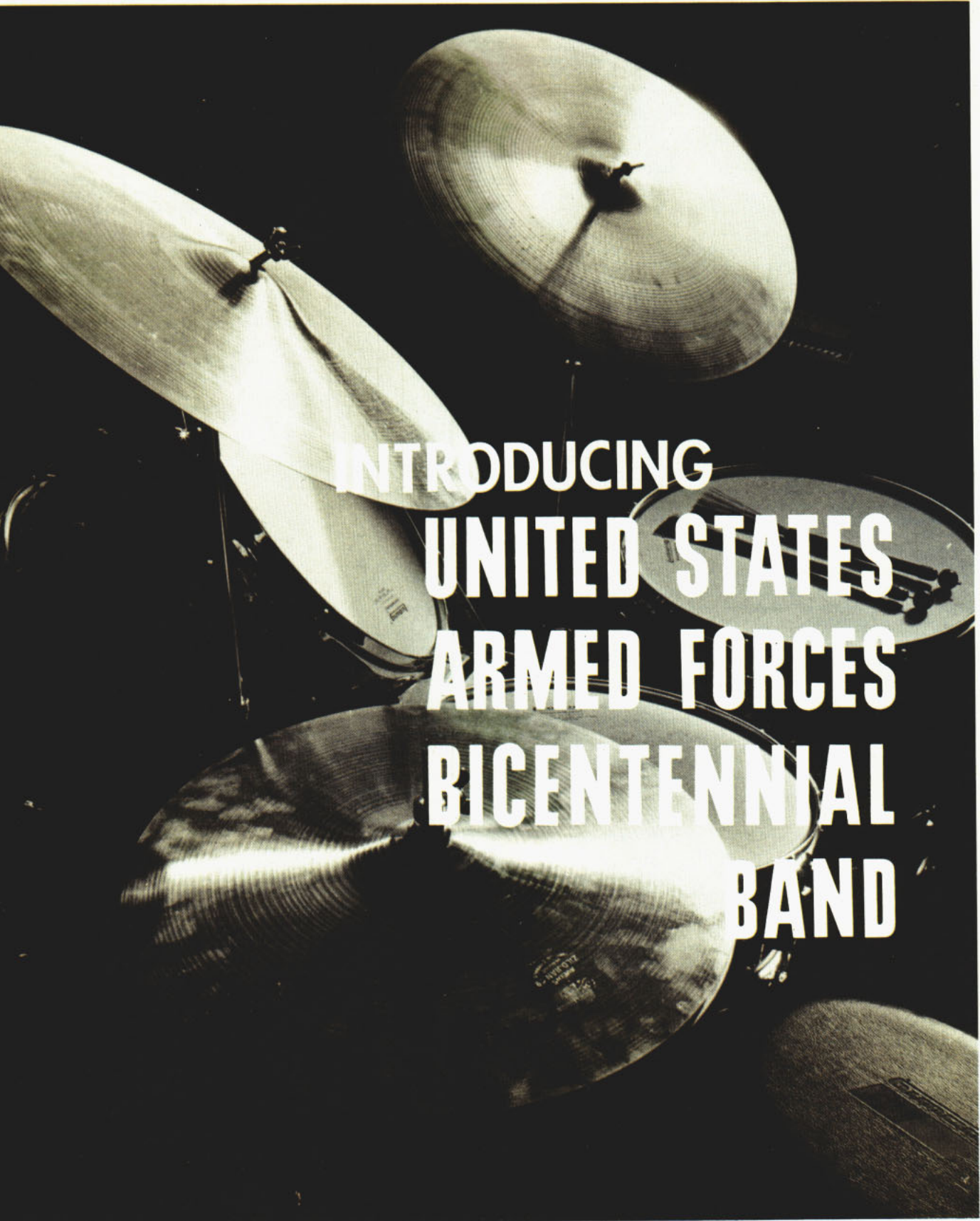
Jimmy John met Igano for the title again on 5 Jan 1974 and went the full five rounds. By a decision Jimmy John regained his title as Japan's heavyweight kickbox-



ing champion. "Now that I have the title again, I plan to continue training so I can keep the belt for as long as possible," he said.

For the record, Jimmy John won the bet with his wife and bought himself a new car. He bought Beniko not one but two fur coats and nearly a year later, Jimmy John is still fighting. He's still the champ.

—Photos by JO2 Dennis Fields



**INTRODUCING  
UNITED STATES  
ARMED FORCES  
BICENTENNIAL  
BAND**



Some Navy musicians have been given an assignment which could very well turn out to be one of the most interesting experiences of their lives. These 19 people will spend the next two years traveling from one end of the country to the other, as representatives of the Department of Defense, to entertain Americans and help them celebrate our nation's 200th anniversary.

These lucky musicians have been selected to be members of the United States Armed Forces Bicentennial Band (USAFBB).

This unusual, 67-piece symphonic band and the accompanying 24-voice mixed chorus is made up of men and women from each of the five armed services. It was created as the best means by which the Department of Defense and all the armed services of the United States could be represented at one time in local bicentennial celebrations across the land. As Army Lieutenant Colonel Hal J. Gibson, the band's commander and conductor, said, "The occasion of the United States Bicentennial observances called for a unique response from the military. The major service bands have always been held in the highest esteem by listeners the world over, both for their musical prowess and as goodwill ambassadors for America. The popularity of these renowned and much sought-after units of the military community prompted the creation of the United States Armed Forces Bicentennial Band."

The idea for the USAFBB started in the office of the Assistant Secretary of Defense for Public Affairs in August 1973. It was one of several suggestions as to how DoD could participate in the bicentennial. The Army was given the job of initial research to see if the band project was feasible and made several recommendations after months of study. By early 1974 plans for the multiservice band were firm.

"No more appropriate choice could have been made," said LTCOL Gibson. "As an integral part of

the Armed Forces since our first battle for independence, a service band can readily identify historically with the birth of our nation."

Next, LTCOL Gibson, Navy Lieutenant (jg) Bill Brittain and Air Force Captain James C. Whittenton (both associate conductors of the band) were given the job of organizing the new band. The biggest problem faced was its uniqueness—never before had a combined band been put together for such a long-term operation. They had to find the answers to such questions as: where to locate the band, how to operate it, how to get personnel, the logistics, uniforms, supplies, instruments and finances.

One by one the task group found solutions to their problems and on 24 Apr 1974, after a review of their recommendations by all the services, their plan was approved. The band was in business. All that needed to be done was gather musicians, start rehearsals and go.

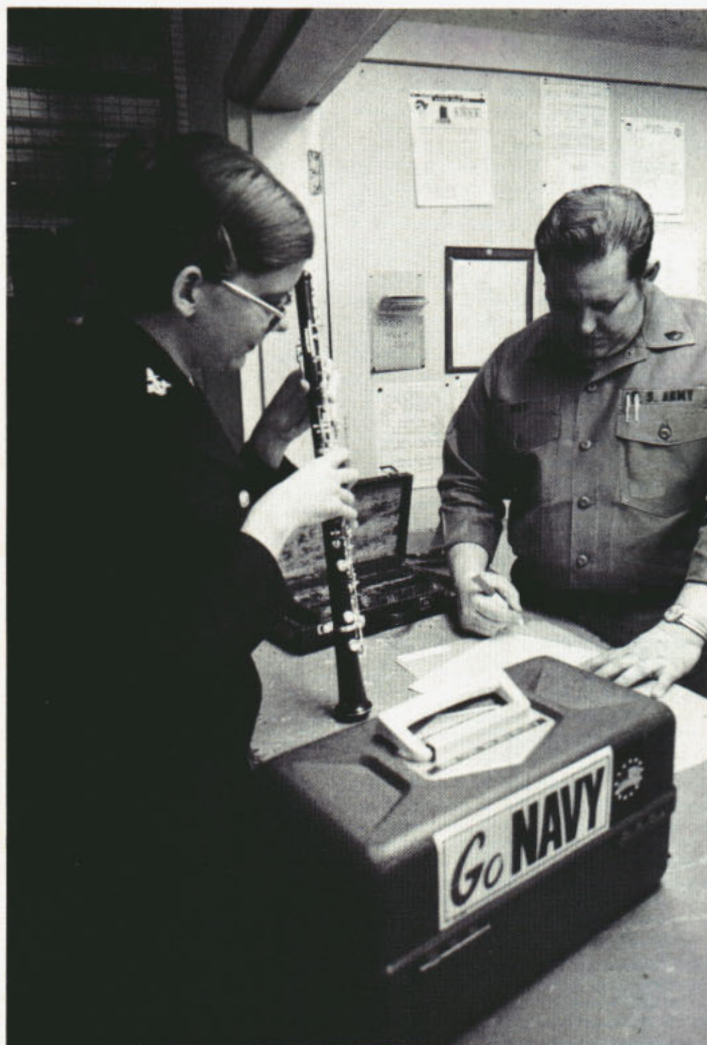
Gathering the best musicians available, the most important task, began with a request for volunteers from the established major service bands.

Chief Musician Patrick Puckett, trumpet and post horn soloist with the U. S. Navy Band, is one who signed up. "For me," he said, "it represented a once-in-a-lifetime chance. It's a first class organization, and I feel it's going to be one of the best bands in the country."

Also from the U. S. Navy Band is LTJG Brittain, who was conductor of their 19-piece dance and show orchestra, the "Commodores." "I wanted to be a part of this band because it's a piece of history, a big piece of history," he said. "We will be square in the middle of a celebration with 200-plus million people participating and this is a great opportunity."

The band's organizers knew they would have to look to other sources besides the major military bands for





recruits—after all, those bands have their own bicentennial commitments.

The next source they turned to was the services' line, field, Reserve and National Guard bands. Members of these were invited to audition at Fort Meade, Md., the USAFBB's home base about 25 miles north of Washington, D. C.

Musician 3rd Class Barbara Wade, an oboist, came to the USAFBB in this way from the CINCLANT Headquarters Band in Norfolk. "I was in Washington visiting a friend who is stationed at BuPers when I heard about this band," she said. "It sounded like a great chance, especially to travel, so I called LTJG Brittain to see if there was an opening for me. There was, and I auditioned successfully in July."

Barbara is a good example of the kind of talented people who came to the band. She holds a bachelor of music degree, with a major in music education, from the University of Cincinnati College Conservatory of Music. According to LTJG Brittain, all the band members have studied music or have a good professional background, some have MA's and even PhD's. All have many years' experience playing with school, military or professional bands.

The search for the finest musicians to fill some still vacant spots was next taken to the civilian community. LTCOL Gibson spent a month traveling to some of the country's best music schools to hold auditions. Those interested in joining the Navy were offered a special enlistment program which allowed them to enter for the two-year bicentennial period only. Furthermore, since time was running short, they were not required to attend boot camp. Instead, each is required to attend classes at Ft. Meade band headquarters to learn basic Navy regulations and traditions. They are also required to complete their professional and military requirements correspondence courses.

Bob Barnett, a chorus tenor, enlisted in the Navy





Facing page top: Army Sergeant 1st Class William D. May issues an oboe to Navy musician Barbara Wade. Facing page bottom: The band during rehearsal. Left: MUC Patrick H. Puckett. Below: Army Specialist Richard Clardy and wife, Navy Musician 1st Class Mary K. Clardy.

under this program following his graduation from the University of South Dakota. "I wasn't sure if I wanted to continue for my master's or not," he said. "When this offer came along and I auditioned successfully, I decided to join, mainly for the experience but also for travel. I'm happy to be a part of the American Bicentennial in this way."

In addition to musicians, support personnel were also needed. Since the band is to do a great deal of traveling it is essential that it be completely self-reliant. For this reason, administrative, supply, motor pool and public affairs staffs specifically for the band were assembled.

Once all the necessary people were gathered, total strength added up to 130 people: 67 instrumentalists, 24 chorus members and 39 support personnel. Nineteen musicians and six members of the support group are naval personnel.

An interesting aspect of the band is that among its 35 men and 56 women are six husband and wife teams. For these, the Bicentennial Band experience will be something special now, and to look back on in future years.

Mary Karen Clardy, a flutist, is the only Navy member among the band's married couples. Her husband, Army Specialist Dick Clardy, a trumpeter, came to the USAFBB from the Army Field Band. At that time Mary Karen was studying music at Catholic University in Washington, D. C., close to where Dick was stationed.

"When the opportunity to work with Dick first arose I was very excited about it," she said. "We discussed it thoroughly, but I think we had both made up our minds."

Mary Karen auditioned successfully for the band at Ft. Meade and enlisted in October. "I'm really excited about my assignment to the band," she said enthusiastically. "Now Dick and I can spend more time together, and we'll be seeing more of this great country than most Americans ever get to see. I also realize that it's a wonderful opportunity for a woman just out of college. I'll have a chance to gain invaluable experience and meet interesting people."

Another problem the band's organizers faced in the beginning was uniforms. After much deliberation it was decided that members would wear the uniform of their own service. Not only would this save money, it was reasoned, but would also effectively demonstrate the multiservice aspect. It would also allow individuals to display the pride each has in his or her own service



branch. The only common uniform item worn will be a USAFBB breast badge.

How to get the band from one place to another was another big problem in the beginning. It was decided that most of the traveling will be in three buses. Following along will be at least three truckloads of instruments, sheet music, music stands, mikes, amplifiers and other equipment. Only on special trips or when the need arises, will they fly.

The band was beginning to shape up in the last weeks of 1974, but things were still hectic. Many band members had not reported to Ft. Meade, and those that had were trying to get organized, running around getting their uniforms (if they had just joined the service), being issued instruments and generally trying to get



**Above:** MU1 Brian Bowman, euphonium soloist. **Center top:** LTCOL Hal J. Gibson, band's commander and conductor. **Center bottom:** Female members of the mixed chorus. **Far right:** LTJG William G. Brittain, associate conductor.



used to their new duty. Each day a new member or two would report in and the disorganization seemed to be an endless process. To add to the confusion, the old barracks given for the band rehearsals and headquarters was being remodeled. To the sounds of individual trumpeters and drummers practicing were added the pounding of hammers amid the rasping of saws. Supplies were stacked wherever they could fit and tables, chairs, desks and lockers were disarranged to meet any need. Eventually, the old building will have large rehearsal halls, individual practice rooms, administration offices, storage spaces, new paint, sound-absorbing draperies and all the other necessities to make it a first class music center. In the meantime, plans were beginning to gel in spite of the apparent mass confusion.

Finally, on 13 Jan 1975 the first rehearsal with the full band and chorus was held. VIPs and news media representatives were invited to attend and they were

the United States Armed Forces Bicentennial Band's first audience. In spite of the fact that this was the first time the band had ever played together, they put out a sound that would rival that of any in the country. After they've played together for a while that sound should be, in a word, super.

As LTJG Brittain said, "There's every indication that it should be the finest military band ever put together in the nation. Every member is handpicked. It's not often that opportunity comes along.

"It's an all-star team," he added, "with a chance to put it all together. We have the essential ingredients—support, funds, personnel and talent."

The music the USAFBB will play ranges from John Philip Sousa marches to the pop music of Gershwin and the jazz of Ellington to classical music of Aaron Copland. But it all has one thing in common—it's the music of America. Indeed, the type of music the band



will perform is a definition of its mission, which is, as LTJG Brittain said, "to take the history of America to the American people through American music."

Incidentally, this is one reason it was decided to add the chorus, because so much of our music is accompanied by lyrics—folk songs and Broadway show music, for example.

In carrying out its mission the band will play in every state's capital and as many cities as possible in between. They will also perform in some cities in Canada, Mexico, Puerto Rico and the Virgin Islands.

According to Dick Bain, the band's public information director (a Navy retiree), the complete schedule is not yet firm, but eight major tours, totaling 270 days, are planned. These will range from 30 to 58 days each. In between the long tours, when the band is back at Ft. Meade, there will be numerous short trips for special DoD assignments. Some of these will be in the

national capital area, others include the Tournament of Roses in Pasadena, Calif., and Operation Sail in New York City.

On 24 March the USAFBB played its first public concert at the John F. Kennedy Center for the Performing Arts in Washington, D. C. This will be followed by the first road tour which begins (on 9 April) in Dover, Del., capital of the Union's first state. For the next 32 days this tour will, appropriately, take the band to places where America's War for Independence began—Lexington, Mass., Concord, N. H., and throughout the New England states. From there it's on to cover the rest of the country with a show guaranteed to stir the patriotic spirit of Americans everywhere in this our 200th as a nation.

—Story by JO1 Tom Jansing  
—Photos by PH1 Rich Pendergist and PH3 J. Dorman

# letters to the editor

## Educational Benefits

SIR: I have a friend who got out of the Army recently and started college. His GI Bill money for school also started, but then he got a letter saying that, due to lack of money, he would not get it any more. He had to drop out of school.

I don't know all the facts concerning his case, so I can't say why this was done. But I would like to know if something like this can happen to me. Just what are the facts about the GI Bill?—TM3 C. A. T.

• *Here are the straight facts: Veterans who served on active duty for more than 180 continuous days, any part of which occurred after 31 Jan 1955, who were discharged or released from active duty under conditions other than dishonorable, are eligible for GI Bill educational benefits under the Veterans Readjustment Benefits Act of 1966, as amended. Each eligible person is entitled to educational assistance for a period of one and one-half months for each month or fraction thereof of his service on active duty, not to exceed 36 months. If he served 18 months or more, he is entitled to the full 36 months.*—Ed.

## Tug's Towing Record

SIR: During a recent period of operations, the officers and crew of the Fleet tug USS *Paiute* (ATF 159) made 27 successful tows of other units. This was accomplished during an 85-day cruise of which 68 days were spent at sea, covering over 15,000 miles.

We don't believe that 68 days at sea, or 15,000 miles traveled during that time, is any kind of a record, but we do feel that 27 tows, consisting of hook-up and release—night and day, with seas from two to 10 feet, winds zero to 20 knots—may very well qualify us for a towing record, especially in view that this was accomplished without any personnel casualties, machinery failures or equip-

ment damage. The lightest tow was 7000 tons; the heaviest was 15,000 tons.

By the way, our official ship's slogan is "Paiutes are better tuggers." We think we are.—BMCM J. E. P. (MCPOC), USN.

• *The only way we can determine whether the statistics qualify USS *Paiute* for a record is to make them known to the Fleet and see if there are any challengers. Meanwhile, congratulations to the officers and crew for their splendid, accident-free record.*—Ed.

## Could Register be Wrong?

SIR: Twenty-five of the 109 non-limited duty officer warrants selected for permanent promotion to W-3 are listed in the 1973 edition of Register of Officers as temporary warrant officers. Is it possible to become a permanent W-3 without having been a permanent W-2? If not, could the Register be wrong or did someone goof?—CWO3 G. E. H.

• *Not only is the Register correct, but it is possible to become a permanent W-3 without having been a permanent W-2 as long as the W-3 completes nine years or more service as a warrant officer (temporary). It states in BuPers Manual, Art. 1020320, that "A male temporary warrant officer may apply for a permanent appointment after completion of three years or more service as a warrant officer (temporary)." —Ed.*

## 'Lady at the Helm'

SIR: Concerning the article in the October 1974 issue, "Lady at the Helm," I'm curious as to any other changes that have taken place in the fleet charthouses since I reported to shore duty in 1972.

I did note one other matter: I was under the impression that the instrument being used jointly by QMSN Rachel Worley and a U. S. Navy ensign, was a sextant.—QMC R. M. R., USN

• *We received a few other letters from sharp-eyed QMs on this same subject. The first letter was routed to a learned source and we discovered that QMSN Worley is, indeed, using a sextant—not a Brandon sextant-type stadimeter (as the caption on the reverse of the photo indicated).*—Ed.

## Time Between Races

SIR: The typesetter is at it again. Your November 1974 issue, page 4, column 1, line 8 from bottom, says "members of

the winning 1970 crew." Page 5, column 1, line 16 from bottom, says the last America's Cup races were held "back in 1960." Fourteen years is a long time between races.—A. S. L., LCDR (Ret).

• *Congratulations. You win the lead cup for catching the typographic twisters again. As we've said before, Nobody's perfect, and he was on leave.*—Ed.

## Outstanding Cover

SIR: Your October 1974 cover was outstanding, very timely for a birthday issue, and most appropriate to the name "ALL HANDS." Keep up the good work.—CDR J. D. Connery, USN.

• *Thanks. This particular issue was extremely well received by the Fleet and it has been very gratifying to hear from so many readers about it. Just exactly who it was that snapped the shutter for the photo is unknown to us, but we know that the result represents the combined efforts of Kitty Hawk's photo officer, public affairs officer and her hardworking photo lab crew. And let's not forget to thank the crew, too.*—Ed.

## Wearing of Peacoat

SIR: A recent Navy uniform change authorizes Navy women to wear the men's blue working jacket with their working uniform. Can the men's peacoat also be worn by a Navy woman with the working uniform?—PN3 C. D. E.

• *Sorry. Women are authorized to wear only the men's blue working jacket with the working blue/dungaree uniform.*—Ed.

## Delta Queen Mention

SIR: In ALL HANDS, September 1974, page 54, you have a very informative article about the *Delta Queen*. I am sure my fellow Cincinnatians do not fully realize her naval history.

However, the folks of Cincy would be offended by that article, as I was. Not once is the Queen City (Cincinnati) mentioned. To add insult to injury, the *Queen* is pictured in Louisville. Every year the *Delta Queen* and the *Belle of Louisville*, another Ohio River steamboat, have a race from Cincinnati to Louisville, the *Queen* having the better record of the two. So, to a Cincinnati, seeing the *Queen* pictured in Louisville is like a San Franciscan seeing the Golden Gate Bridge pictured in Los Angeles.—AZ3 M. L. F.

## Ship Reunions

News of reunions of ships and organizations will be carried in this column from time to time. In planning a reunion, best results will be obtained by notifying the Editor, ALL HANDS Magazine, Navy Internal Relations Activity, Department of the Navy, Room 1044, Crystal Plaza No. 6, Jefferson Davis Highway, Washington, D. C. 20360, four months in advance.

● *USS Memphis* (CL 13)—A 50th-anniversary-since-commissioning reunion is being planned for April or May in San Diego, Calif. Contact H. Fischer, 164 "I" St., Chula Vista, Calif. 92010 for details.

● *USS Cambria* (APA 36)—A reunion of WWII crew is planned for 25 May in Houston, Tex. Contact Ed Worrel, 4322 Littleberry Rd., Houston, Tex. 77088, or telephone (713) 448-7778.

● *USS Ticonderoga* (CV-CVA-CVS 14)—A reunion is planned for 9-11 May in Atlantic City, N. J. Contact Ed Mingle, 751 Manor Dr., Brick Town, N. J. 08723.

● *USS Lexington* (CV 2)—The 22nd national reunion is planned for 25-28 Jun in Philadelphia, Pa. Crew, squadron personnel and Marines who served aboard from 1927, when she was commissioned, until 8 May 1942, when she was sunk in the Coral Sea, contact Walter D. Reed, 5410 Broadway, Oakland, Calif. 94618.

● *U. S. Naval Group China*, The Sino-American Cooperative Organization (SACO)—The 21st annual reunion is planned for 26-29 Jun in Colorado Springs, Colo. Contact Carl W. Divilbiss, 900 Luhrs Tower, 45 W. Jefferson St., Phoenix, Ariz. 85003, or David J. Clark, 718 17th St., Denver, Colo. 80202.

● *Composite Squadron 91* (VC 91)—A reunion is planned for July in the mid-west area. Contact Ed Spencer, 9105 Burley Dr., Bethesda, Md. 20034, telephone (301) 530-5219 or (202) 797-5446.

● *USS Cony* (DD 508)—Former crewmembers interested in holding a reunion over the July 4th weekend in the Foxboro, Mass., area contact Luke E. Terpstra, 195 South Street, Foxboro 02035.

● *USS Enterprise* (CV 6)—A reunion is planned for 24-26 Jul in Seattle, Wash. Contact Edward H. Doss, 1606 28th St., S. E., Auburn, Wash. 98002.

● *USS Northampton* (CA 26)—A reunion for those who served in her between 1930-1942 is planned for 24-26 July in Las Vegas, Nev. Contact R. Rene, 5284 Appian Way, Long Beach,

Calif. 90803.

● *USS Wasp* (CV 7)—The 3rd annual reunion is planned for 25-27 Jul in San Diego, Calif; former members of the crew, squadrons and Marines who served in her from precommissioning to 15 Sep 1942, when she was sunk in the Coral Sea, contact T. J. Wilkes, 1313 Aswan, Corpus Christi, Tex. 78412.

● *LST 1141*—A reunion is planned for Korean War veterans for 1-3 August. Contact E. H. Sallee, RR 1, Bowling Green, Mo. 63334.

● *USS Astoria* (CA 34)—The second reunion honoring the 33rd anniversary of Savo Island is planned for 7-10 August in Gearhart, Ore. Contact Ken Cruse, 625 E. Edison St., Hillsboro, Ore. 97123.

● *River Patrol Force* (TF-116)—The eighth annual reunion of the Gamekeepers of Vietnam Association, Inc., is planned for 16 August in Norfolk, Va. Contact YNCS John C. Williams, USN, P.O. Box 5523, Virginia Beach, Va. 23455.

● *26th Naval Construction Battalion*—A reunion is planned for 18-21 September in Dayton, Ohio. Contact Harry Friedrich, 3671 Mockingbird Ln., Dayton, Ohio 45430.

● *USS Reid* (DD 369)—A reunion is planned for 19-21 September in Milwaukee, Wis. Contact Robert T. Sneed, 1537 North 59th St., Milwaukee 53208.

● *Mine Warfare Force*—Any active duty or retired personnel who have served in any unit of the Mine Warfare Force and are interested in holding a reunion in November in Charleston, S. C., contact HMCS Jim Donovan, USN (Ret), Mine Force Association and Reunion Committee, 1220 Hillside Dr., Hanahan, S. C. 29406.

● *USS Monterey* (CVL 26)—1943-46 personnel interested in a reunion in Boston, Mass., contact Manlio Nota, 50 Sherbrooke Ave., Braintree, Mass. 02184.

● *USS Davis* (DD 395)—A reunion of WWII crew is planned for April in Washington, D. C. area. Contact David S. Fowler, 414 Turtle St., Syracuse, N. Y. 13208.

● *USS Oklahoma* (BB 37)—Reunions are planned for 1-4 May in Baltimore, Md., and 23-25 Oct in San Diego, Calif. Contact Omar K. Keller, 5003 Western Dr., RFD 4, Fremont, Neb. 68025.

● Noncommissioned Officers Associ-

ation of the United States of America (NCOA)—The 14th annual convention will be held 2-6 Apr in Houston, Tex. Contact Mr. C. A. "Mack" McKinney or Mr. Fred E. Darling, 110 Maryland Ave., N. E., Suite 510, Washington, D. C. 20002, telephone (202) 546-7891 or 546-7892.

● *V-7 and V-12 Navy classes of 1944, 1945 and 1946*—A reunion is planned for 18-19 April at the University of Louisville-Speed Scientific School. Contact Will Morrison, Jr., Box 460, Dickson, Tenn. 37055, or phone (615) 446-8087.

● *U. S. Naval Test Pilot School*—The 27th annual reunion and symposium for TPS alumni is planned for 3 May at the Naval Air Test Center, Patuxent River, Md. Contact Public Affairs Office, U. S. Naval Test Pilot School, Patuxent River, Md. 20670.

● *30th Naval Construction Battalion*—The 30th reunion of WWII veterans is planned for 23-26 May in Scranton, Pa. Contact Mario Bevilacqua, 519 Third St., West Pittston, Pa. 18643.

● *USS Picking* (DD 685)—A reunion is planned for WWII veterans for 9-13 July at Williamsburg, Va. Contact Dr. Leroy Steiner, 4301 Wythe Ave., Richmond, Va. 23221.

● *USS Valley Forge* (CV 45 & LPH 8)—The fourth annual Valley Forge Reunion Club gathering is planned for 25-27 July at San Diego, Calif. Contact John B. Trahan, 2301 Melrose St., National City, Calif. 92050.

● *USS Washington* (BB 56)—The USS Washington Reunion Group is planning its 12th gathering for 14-17 July at Seattle, Wash. Contact John A. Brown, USS Washington Group Inc. (BB 56), Box 27035, Columbus, Ohio 43227.

● *USS ABSD 1*—A reunion is planned for 25-27 July in New Orleans, La. Contact W. G. Herman, Rt. 1, Box 110, Urich, Mo. 64788.

● *115th Naval Construction Battalion*—The sixth reunion is planned for WWII veterans for 31 Jul-3 Aug in Champaign, Ill. Contact Edward C. Plummer, 5023 E. Naomi St., Indianapolis, Ind. 46203, or phone (317) 359-6990.

● *VC-91*—A reunion for officers and crew is planned for 17-20 July in St. Charles, Ill. Contact Ed Spencer, 9105 Burley Dr., Bethesda, Md. 20034, or phone (301) 530-5219 or (202) 797-5446.

# NOW HEAR THIS..

*As in all military services, the links between chains of command are being tested constantly. Sometimes two-way communications end up being interpreted slightly differently*

from the initial transmission. The following comes to us courtesy of ex-ALL HANDS staffer, JOC H. George Baker, now retired from the Navy and Editor of that fine magazine, "Army in Europe," published by the Headquarters, U. S. Army, Europe, and the Seventh Army. He in turn had received it from the 501st Transportation Co. unit newspaper "Breakdown."

*We quote from that publication, with only the military ranks and terminology changed to their equivalents in the sea service.*

A hypothetical admiral issued the following order to the ship's company.

"Tomorrow evening, at

approximately 2000, Halley's Comet will be visible in this area, an event which occurs only once every 75 years. Have the men fall out on the flight deck in dungarees, and I will explain this rare phenomenon to them. In case of rain, we will not be able to see anything, so assemble the men in the hangar bay theater area and I will show them films of it."

The CO relayed the order to the XO:

"By order of the admiral, tomorrow at 2000 Halley's Comet will appear above the operating area. If it rains, fall the men out in dungarees, then march them to the hangar bay theater where this rare phenomenon will take place, something which occurs only once every 75 years."

The XO relayed the order to the department heads:

"By order of the admiral, in dungarees at 2000 tomorrow evening, the phenomenal Halley's Comet will appear in the hangar bay theater. In case of rain in the operating area, the admiral will give another order, something which occurs once every 75 years."

One department head passed the directive on to his division officer:

"Tomorrow at 2000, the admiral will appear in the hangar bay theater with Halley's Comet, something which happens every 75 years. If it rains, the admiral will order the comet into the operating area."

The division officer's announcement in the formation the next morning:

"When it rains tomorrow at 2000 hours, the phenomenal 75-year-old Admiral Halley, accompanied by the captain, will drive his Comet through the hangar bay in dungarees."

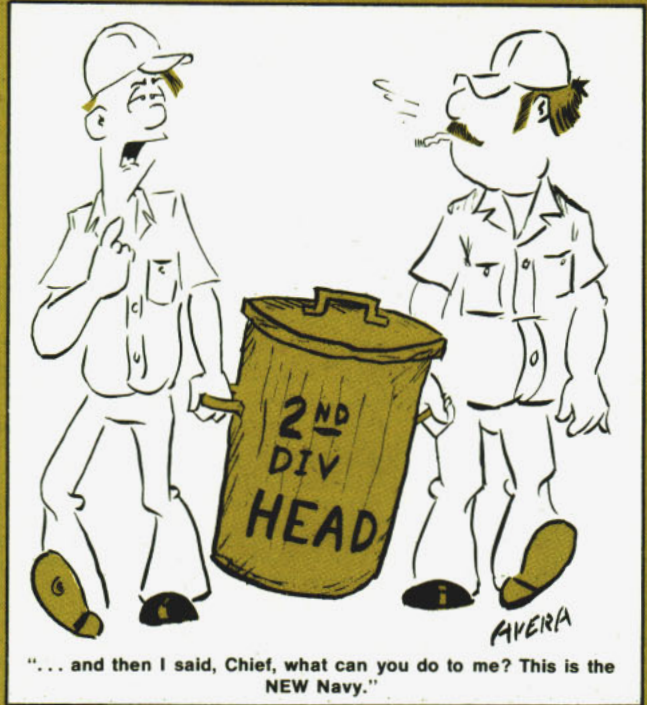
Regardless of who's giving the order or who's receiving it, to be effective, the communication must be properly transmitted. Just something to keep in mind.







"How should I log this, sir?"



"... and then I said, Chief, what can you do to me? This is the NEW Navy."



"But, it's my coffee cup finger... are you sure I can't get a no-duty chit?"



# on the serious side



"There goes the Old Man."

# TAFFRAIL TALK

It's like a windy desert. All that's visible are a few power lines and roofs of buildings buried in the Antarctic snow. Atop one roof is a bold sign, "Bubbles' Truck Stop Open 24 Hours A Day—Free Coffee."

This, reports JO1 Bob Rainville, USN, is the mess hall at Williams Field, Antarctica, the arrival and departure point for supplies and scientists working on projects with the National Science Foundation.

Williams Field, five miles from McMurdo Station, is the home for 200 officers and enlisted men of VXE-6, the air arm of the Navy's Operation Deep Freeze, who have since returned to the States at the end of the summer support season.

Upon entering "Bubbles' Truck Stop," you're aware of the aroma of freshly baked rolls and pastries. In the background you'll hear a cheerful laugh from Williams Field's most popular man, CS1 Charles J. Maitland, also known as "Bubbles."

The 14-year Navy veteran has spent the last three and one-half years with VXE-6. "I'm the best cook in the Navy," he claims, "except my wife, but then she ain't in the Navy."

Bubbles' Truck Stop, open around the clock during the austral summer, provides a warm meal or a good cup of coffee to VXE-6 pilots and maintenance and flight crews. The stop has a reputation for serving fine food, such a reputation in fact, that at times VXE-6ers make the five-mile trip from the main McMurdo Station just to eat Bubbles' food. Why? "Well, I am a firm believer that every day is a holiday and every meal is a banquet," exclaimed Bubbles with a hearty laugh, his trademark.

According to Journalist 1st Rainville, the men of VXE-6 who eat at Williams Field agree it's possibly the best food they've ever had and there's never a shortage.

Maitland takes pride in his work, he enjoys his job and knows good food helps the morale at Williams Field.

"These men work 12 to 14 hours a day and really don't want to hassle with poorly prepared food," he says. "That's why there is tender, loving care put into every one of my meals. In fact, that is the primary ingredient," he adds.

\* \* \*

Do you believe in fate? Then here's one for you. When Mark Bemis joined the Navy recently, he discovered that he and his recruiter, Navy Counselor Chief Edgar Johnson, Jr., were born 17 years apart on the same day. He also found out that on the very day he was born in Fort Worth, Tex., the chief joined the Navy in that same city. Now, if Mark becomes a Navy recruiter in Fort Worth 17 years from now . . . Well anyway, welcome to the Navy, Mark.

\* \* \*

Division officers and leading petty officers are like mother hens when advancement exam time rolls around. They're constantly reminding their people to "hit the books," asking rating-related questions and holding a sizable number of extra school calls.

All this effort paid off recently for the men in USS *Lapon* (SSN 661). Every one of the boat's 34 advancement hopefuls passed their test to give *Lapon* an almost unheard-of 100 percent pass rate. Well done to the new *Lapon* petty officers and selectees, and also to their senior petty officers and officers who cared enough, took the time to help their men in their professional education and made advancement in rate a reality for them.

*The All Hands Staff*

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**IT'S TAKEN YOU YEARS  
TO GET WHERE  
YOU ARE TODAY.**

**WHY START  
ALL OVER AGAIN?**



If you're finishing up your first hitch, you can ship out and start all over again. Or you can decide to ship over, and take on job responsibilities that a man your age on the outside might not be trusted with for several years.

If you're thinking of getting married, Navy benefits can be even more meaningful. Increased housing allowance. Available medical care, plus things like job security and retirement benefits. They all add up.

So before you head off into the uncertain civilian job market, be sure there's a place for you in that market.

If you have questions, ask your Command Career Counselor. He can help you with your decision. No matter what it is.

**DON'T WAIT TILL YOU GET OUT  
TO WISH YOU'D STAYED IN.**



U.S. Navy 200th Birthday

Building on a Proud Tradition