NAVAL AVIATION NEWS

47th Year of Publication

OCTOBER 1966

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The Navy applies mobile, self-sustaining seapower in the precise degree required by the individual situation. It can show interested concern, compassion or friendliness; it can move with swift precision as necessary. The Navy-Marine Corps team is unique in that it is a self-contained, independent fighting force with requisite power, mobility, flexibility and self-sufficiency. Sea-based forces require no international or local licenses to move anywhere. They are an effective instrument of national policy.

NAVAL AVIATION NEWS

FORTY-SEVENTH YEAR OF PUBLICATION OCTOBER 1966

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■ COVERS

Front cover carrier for October is USS Ranger. Above, USS Sacramento (AOE-1) transfers fuel and ammunition by hose and high line to USS Hancock. On back cover, bombs from A-4's, based aboard USS Oriskany, fall on Dong Nahm fuel storage tanks.

NAVAL AVIATION NEWS

Safety Winners Announced

Maintain High Quality Records

The Chief of Naval Operations has announced the winners of the annual CNO Aviation Safety Awards. The squadrons will be officially recognized by plaques citing their safety status.

Selections of winners is based on many factors which reflect the pace of operations during the year. The emphasis on safety is constant and productive and has resulted in a decrease of accidents each year for the past several years.

Squadrons recognized under the criteria established in OpNav Instruction 3590.5G are:

NavAirLant — VP-10, RVAH-7, HS-1, VF-11, VC-10 and VA-36

NavAirPac — VF-213, VA-192 (light jet), VA-165 (medium jet/prop), VS-23, VP-17 and VAW-13 (special mission)

CNATra — HT-8 (Basic) and VT-31 (Advanced)

CNAResTra — VF-701, VS-661, VR-871 and HS-892

FMFPac—VMA-223, VMO-6 and VMFA-542

FMFLant — VMA-324, HMM-261 and VMGR-252

MARTC—VMF-511, HMM-769.

FLIGHT TESTS *of the new Douglas A-4F Skyhawk attack bomber began in September. The A-4F features a Pratt & Whitney engine, providing 9,300 pounds of thrust, 800 more than the engine in the A-4E. The new Skyhawk also has steerable nose gear, wing lift spoilers, a zero-zero escape system and updated electronic gear. In front of the Skyhawk are W. E. McKee, Douglas A-4 deputy manager, Cdr. Jack A. Endacott, VA-125 C.O., NAS Lemoore; R. F. Canaday, Douglas Aircraft division director, and J. P. Robinson, a Douglas plant manager.*

Posthumous Awards for Hero

Marine's Widow Receives Medals

Medal award ceremonies honoring the late Maj. Donald J. Reilly, USMC, the most decorated Marine of the Vietnam conflict, were held at the Marine Barracks, Washington, D. C., on September 1.

Mrs. Emily Reilly, of Memphis, Tenn., widow of the Major, was presented his posthumous awards. These included the Navy Cross, the Silver Star, the Distinguished Flying Cross, the Bronze Star and Air Medal (with Gold Stars in lieu of the second through 14th additional awards).

Maj. Reilly, a helicopter pilot with Marine Observation Squadron Two in Vietnam from April until December of 1965, was mortally wounded on December 9 during a medical evacuation mission. It was this action for which the Navy Cross was awarded.

After having flown over seven hours of armed helicopter flights in support of ground operations that day, Maj. Reilly responded at nightfall in marginal weather to a request for evacuation of 11 wounded Marines. Attempting to bring his helicopter into the landing zone under intense ground fire, guided only by flashlight, Maj. Reilly was hit by a .50 caliber round, crashed and later died.

In nine months in Vietnam, Maj. Reilly flew 298 missions, including 133 medical evacuation as well as armed helicopter escort duty, aerial observation and recon flights.

Deep Freeze 67 Commences

Navy Airmen Will Fly Support

A 93-man task unit, commanded by LCdr. Frank A. Achille and based at Christchurch, New Zealand, from October 10 to December 10, is flying logistic support from

AT NATC *Patuxent River, North American Aviation's new OV-10A light-armed reconnaissance aircraft is being tested on its ability to operate from small unprepared fields. Test pilots are putting the OV-10A through its paces over specially prepared strips which resemble a giant washboard. Taxi tests and takeoffs have been performed at speeds greater than 100 miles per hour. By comparison, a passenger car driven over the strip reached its control limits at 12 mph. In the picture at left, the OV-10A enters the unusual strip of macadam. Its nose dips as the "trailing arm" landing gear encounters the rough terrain. The takeoff (above) is accomplished at 85 knots. Instrumentation in the plane measures stress and strain created by track; other instruments monitor the pilot's reaction to buffeting.*

there to McMurdo Sound, Antarctica, for *Deep Freeze 67*.

The men were drawn from VR-7, 8 and 9, squadrons which make up Naval Air Transport Wing, Pacific. The wing, commanded by Captain Sam E. Clark, USN, is assigned to the USAF's Military Airlift Command.

Four seven-man crews at Christchurch are flying the C-130E *Hercules*. Maintenance at Christchurch is augmented by a maintenance team on the ice to trouble-shoot any malfunctions that occur on the 2,000-mile flight to McMurdo.

Readiness Through Safety

ComNavAirLant is FY 66 Winner

The Chief of Naval Operations has named Commander Naval Air Force, U.S. Atlantic Fleet and the top performing aviation units of his command winners of the FY '66 CNO Readiness Through Safety Trophy.

While flying almost six percent more hours, NavAirLant reduced its accident rate from 1.51 to 1.18 major accidents per 10,000 flight hours, lower than the over-all Navy-Marine accident rate.

Forty-six Atlantic squadrons had accident-free records for FY '66.

Seventh Unitas Commences

Exercise to End in December

For the seventh consecutive year, navies from seven Latin American nations are joining United States forces in an ASW training exercise in the waters near South America.

The exercise, *Unitas VII*, which began September 1, is under the command of Rear Admiral Clyde J. Van Arsdall, Jr., Commander South Atlantic Forces, U. S. Atlantic Fleet.

Unitas VII commenced as units of the Colombian Navy joined U.S. forces. The exercise will continue, in turn, with sea and air forces from the participating nations of Ecuador, Peru, Chile, Uruguay, Brazil and Venezuela.

U. S. forces include two destroyer escorts, a guided missile destroyer, two submarines and a detachment of VP-18 aircraft.

FIRST *Fleet pilot to fly the A-7A Corsair II was Cdr. J. C. Hill, of CRAW-4, who was attending Ling-Temco-Vought's ground school in Dallas. He is the wing's training officer. As the new aircraft arrives at NAS Cecil Field, he will check out pilots of VA-174, a Corsair II replacement training squadron.*

Trophy Winners Announced

NARTU Alameda Wins Conway

Rear Admiral Richard L. Fowler, Chief of the Naval Air Reserve Training Command, has announced the winners of the Naval Air Reserve Trophies for the past year.

The Edwin Francis Conway Trophy was won by NARTU Alameda, Calif. judged "the most efficient in training and operations."

NARTU Alameda also was the recipient of the Sheldon Clark Memorial Trophy awarded to the activity achieving the highest combat readiness during FY 1966.

To NAS Grosse Ile, Mich., goes the Chief of Naval Air Training Trophy as "the most improved" activity of the Naval Air Reserve Training Command.

The Noel Davis Trophies, awarded to the most efficient reserve squadrons, were won by the following units: AWS-93 and NARDIV-931, NAS Willow Grove; NARMU-876, WEPTU-873, HS-872, VA-879, NAIRU-872, VR-874, all of NARTU Alameda; VF-701, NAS Dallas; VP-662 and VS-661, NARTU Andrews.

Enlisted personnel assigned to the activities, squadrons and units who won any of the above awards are privileged to wear the Navy E insignia until June 30, 1967.

GRAMPAW PETTIBONE

Triple Jeopardy

This particular *Phantom* launched at 1753 in order to burn down excess fuel and build up night and simulated instrument time prior to a scheduled Mirror Landing Practice period commencing at 1830.

A TACAN penetration with GCA pickup was commenced at 1804 and the final controller assumed control at nine miles. At three miles, the aircraft was established on glide path and continued in to one-half mile at which time the controller instructed the pilot to take over visually. Continuous information was issued falsely indicating on glide path and course through the remainder of the approach.

The *Phantom* driver did not see the "meatball" prior to touchdown. Realizing he was about to land short, he selected "military power." The main gear contacted the over-run 19 feet short of the runway, struck an 18-inch mound of dirt and subsequently engaged a 24-inch-deep trench located five feet from the threshold. The port main landing gear strut failed at the trunnions and separated from the aircraft. The starboard main wheel failed at the axle assembly and rolled independently down the runway. Both trailing edge wing tips separated on impact. In spite of all this, the machine continued down the runway and became airborne.

A bewildered pilot saw sparks in his rear view mirror and realized that some damage had occurred. The LSO had just manned his station and was summarily requested to inspect the distressed driver's machine for a blown tire or other damage. Without benefit of an Aldis lamp, the LSO assessed the damage as a blown starboard tire and so informed the pilot.

It was decided to effect a short field arrestment. The secondary runway was chosen to preclude closing the main runway. The LSO

requested that a portable ARC-27 and truck be dispatched so that he could control the arrested landing. The truck sans ARC-27 arrived, but the tower assured the LSO that an ARC-27 was on its way.

During this interlude, the injured *Phantom* orbited the field. The hydraulic warning telelight came on but all three systems indicated normal pressure. The gear and flaps were blown down as a precautionary measure. Shortly thereafter the PC-1 hydraulic pressure failed. The pilot extended the ram air turbine (RAT). At about the same time, the ARC-27 arrived and the LSO called for a low pass to establish proper alignment on the off-duty runway. During this pass, Paddles did not observe an arresting hook and challenged the position of the gear. The driver replied, "All down and locked," and was subsequently advised by Paddles to make a normal approach with touchdown on centerline, 1,000 feet past the threshold.

The approach and attempted arrestment were normal and on touchdown the port engine was secured. Both cross deck pendants were severed as the aircraft slid over them. Seeing sparks and the left wing dragging on the runway, Paddles instructed the distraught driver to "stay on the deck." The pilot, however, aware that he was losing directional control and would be running off the runway, selected starboard afterburner and got it back in the air.

After restarting the port engine, the driver, while orbiting, discussed the prior evolution with Paddles. It was decided and confirmed by low passes that the port main mount was missing and that they would try it again on the duty runway after it had been foamed. (The tower, thinking ahead, alerted the Coast Guard to the situation and requested a helicopter be dispatched to the scene.)

The second attempted arrestment

ILLUSTRATED BY Osborn

was commenced with 1,000 pounds of fuel remaining. Touchdown was 3,000 feet short of the gear; consequently, the machine sliced through both cross deck pendants. Once again the pilot lit the burners and staggered back into the air. With 800 pounds remaining, a final approach in an attempt to engage the chain arresting gear met with complete failure as both pendants were severed by the ragged hulk. Nevertheless, he became airborne one more time and, with an extremely low fuel state, headed for the coast.

Climbing through 1,500 feet, the plane rolled violently to the right but was returned to level flight as its occupants prepared to abandon ship. The RIO punched out over the coast line and the pilot left it just off shore while the mangled *Phantom* took a nose dive out to sea.

The Coast Guard helo, luckily aware of this turn of events, followed the flight path, picked up both survivors in short order and returned them to base.

Grampaw Pettibone says:

Great balls of fire! Somebody coulda got kilt in this fiasco.

First thing these fellas did wrong was to get outa bed; after that it was all down hill. When you don't know what you got left underneath, you'd better darn sure find out and follow NATOPS. A lota grief coulda been avoided here if this youngster had taken over visually and GCA had really monitored the approach to touchdown.

Collective Prang

An SH-3A crew, consisting of pilot, copilot, crew chief and three passengers, manned their aircraft about 1000 on a bright clear day. They departed an East Coast air station for a local flight to work with the ground electronics crew to check the antenna patterns for the TACAN. The helo was to hover at an altitude of 50 feet a short distance southeast of the station for the initial portion of the flight. About the time the helo reached the predetermined position, the ground electronics crew informed the pilot that there would be a short delay before starting the antenna pattern checks.

Since there was a delay, the pilot asked his copilot if he would like to make a practice hover to utilize the time. The copilot began the approach at 200 feet with an airspeed of 60 knots. The copilot dissipated altitude and airspeed until approximately 100 feet above the water.

At this time, he allowed an excessive sink rate to develop and attempted a waveoff by lowering the nose. Owing to the proximity of the shoreline bluff straight ahead, he tried to stop his forward motion by raising the nose and began increasing collective to stop the rate of descent.

The pilot realized the situation was deteriorating and took control at about 50 feet. He momentarily decreased collective in an attempt to build up RPM but quickly abandoned this course of action by raising the collective to cushion the landing.

The aircraft hit some 25 yards off shore in water one to two feet deep. The touchdown was firm with the tail section hitting the water first. The crew chief retarded the throttle on touchdown, but the pilot called for full power and, with forward cyclic and collective, got the helo back in the air after being in the water only 20 or 30 seconds.

He climbed to approximately 60 feet to assess the damage and check the controls, then flew directly back to home base and made a normal landing. Inspection of the aircraft revealed Bravo damage.

Grampaw Pettibone says:

What a sad way to bang up a perfectly good aircraft! Sure makes you wonder just what point he was tryin' to make in allowing a copilot with less than two hours in the aircraft to get into such a hopeless mess. The plane commander's statement, that "the accident could have been prevented if I had taken control at some earlier point in the approach," proves that he's just about as proficient in 20-20 hindsight as a lot of us.

Memo From Gramps

There's no doubt that the hairiest part of an aviator's life is the first couple of years out of Pensacola when he knows he's the world's hottest pilot, but he's not so sure that everybody else knows it. This is the youngster most likely to go outside his own performance envelope, but my experience shows the older types are apt to get downright foolish once in a while, too.

One heck of a lot of trust rides shotgun when you strap on that megabuck machine, but before you take command of it, you'd better take command of yourself. Those wild emotions and urges to flirt with the grim reaper haven't got any place in your flight and, if you think "that can't happen to me," watch out!

I ain't tryin' to take the tiger out of the tank, I'm just saying if you plan your flight well, you will use to good advantage all the time available. There's enough challenge and danger built right into this flying duty to satisfy any normal appetite for thrills.

If you want to be relieved on station by your son, you've gotta accept the responsibility of flying by the rules to survive by the rules.

TWO YEARS IN VIETNAM TERRITORY

On August 2, 1964, the destroyer USS *Maddox*, on a routine peacetime patrol in the international waters of the Gulf of Tonkin, was attacked by North Vietnamese PT boats. The *Maddox* incident was the first overt aggression against U. S. forces by the North Vietnamese.

Four days after the initial attack on *Maddox* (there was a second Tonkin Gulf attack on *Maddox* and the accompanying destroyer USS *Turner Joy* August 4), the first air strikes against North Vietnam were carried out by Navy planes from the attack carriers USS *Constellation* and *Ticonderoga*. The targets on this attack were bases harboring North Vietnamese PT boats and fuel dumps.

The air attacks were the first large-scale Navy "war" activity in Vietnam. For several years the Navy had been running the Headquarters Support Activity in Saigon, whose job was to supply all American advisory needs in Vietnam. In addition, naval advisers had been working with the Vietnamese Navy and *Seabee* Technical Assistance Teams had been assisting the Vietnamese on various community building projects.

For six months after the air attacks, the Navy kept a watchful eye on Vietnam. Before the *Maddox* incident, the main area of involvement for the Seventh Fleet had been the Formosa Straits, between Taiwan and mainland Communist China. But now the focus shifted southwestward to the Tonkin Gulf and the South China Sea.

In February 1965, the three attack carriers in the Seventh Fleet, *Coral Sea, Ranger* and *Hancock*, were in position in the South China Sea. Aircraft from their flight decks struck the Dong Hoi military barracks, one of the prime staging areas for infiltration of troops and material into South Vietnam. Air strikes have continued to this day.

But while the air war in the North was slowing down the enemy supply line, the ground war in the South was still a problem. The decision was made to commit U.S. troops to the war, and, in March 1965, Seventh Fleet Marines, 4,000 strong, waded ashore at Da Nang to guard the air strip being built there. Other landings of permanent forces had brought Marine strength in-country to 53,000.

Also in March, a new task force was organized and Operation *Market Time* began. The task force's job is stopping infiltration of supplies and men by sea. Thousands of junks sail up and down the Vietnamese coast each day. Some are loaded with guns and supplies for the Viet Cong.

Stopping and searching each junk is out of the question, but spot checking has proved effective. Destroyer escorts, Coast Guard cutters, minesweepers, high-speed *Swift* boats and Vietnamese Navy junks are the surface force of *Market Time;* patrolling in the air are *Neptune, Marlin* and *Orion* aircraft. Every junk up and down the coast is visually inspected; suspicious-looking ones are stopped and searched. Military experts state that *Market Time* has cut heavily into infiltration by sea.

With the influx of ground forces into the country, the decision to use air power widely and the problems of supporting the U.S. forces ashore came the decision that the U.S. must build bases in South Vietnam. In May 1965, the first Navy *Seabee* unit (about 675 men) landed at Chu Lai, a coastal city south of Da Nang. Their task was to build a temporary 8,000-foot runway for U. S. Marine Corps jets. Marine pilots were using the runway just 23 days after the *Seabees* arrived. There are now more than 4,500 *Seabees* in South Vietnam, constructing everything from runways to schools.

More ways for the Navy to be effective in the Vietnam conflict were found. On May 20, 1965, the destroyer USS *Hamner* became the first ship to bombard VC coastal positions. Now, Seventh Fleet cruisers and destroyers range along the coast, ready to support amphibious landings, repel VC attacks and bombard VC storage, supply and camp areas. Since the long guns from the sea can accurately hit targets as much as 15 miles inland, VC activity along the South Vietnamese coast has diminished greatly.

The one Navy activity which was going on before the *Maddox* incident has not changed basically. Naval advisers are still spread out all over South Vietnam. In the Mekong Delta, they ride with the River Assault Groups, hunting out Viet Cong along the thousands of waterways and canals. Elsewhere, they work at jobs ranging from helping build Vietnamese Navy junks in the Saigon naval shipyard to riding the Vietnamese Navy junks engaged in *Market Time*.

The Navy also plays a large part in search and rescue (SAR) operations. Pilots whose planes are heavily damaged over North Vietnam are under orders to head for the Tonkin Gulf. If the aircraft can make it to sea, the pilot is almost sure to be rescued. This is due to close teamwork among interservice rescue forces. Actual pickup of the downed man is made by either helicopter or seaplane, while attack aircraft stand by to discourage any enemy attempts to capture the aviator. Destroyers speed to the areas, prepared to silence any shore batteries which may fire on the SAR aircraft. Airmen have consistently commended the SAR forces and declared that their work is one of the pilots' biggest morale factors. SAR pilots have often taken their helos over North Vietnam to make pick-ups.

When the *Maddox* was attacked, the Seventh Fleet had 125 ships, 450 aircraft and 64,000 Navy men and Marines. Two years later, there are 50 more ships, 150 more aircraft and 15,000 more Navy men and Marines. None of these figures include forces assigned ashore.

It's been a big two years for the Seventh Fleet . . . . two years in which the versatility, flexibility and mobility of forces afloat have been tested and proved once again under actual combat conditions.

NAVY AND MARINES IN DECKHOUSE II

PRINCETON MARINES READY TO GO

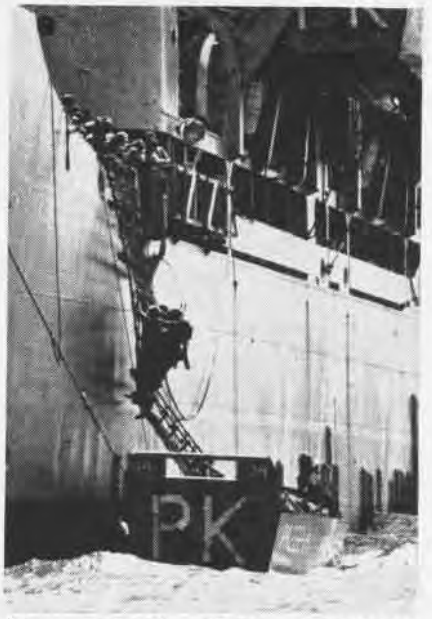
MARINES of the Seventh Fleet Amphibious Ready Groups swarmed ashore by helicopters and boats to secure a beachhead within sight of flags marking the Line of Demarkation during Operation *Hastings*.

The amphibious landing, named *Deckhouse II*, was launched July 16 to secure short supply lines from the sea to U. S. Marines battling North Vietnamese regulars in jungles just south of the 17th Parallel.

The early morning landing employed both helo-borne Marines from the amphibious assault ship *Princeton* and amphibious craft from the landing ship dock *Alamo* and the attack transport *Pickaway*.

At 0630, *Deckhouse II* commander, Navy Captain Richard L. Cochrane, ordered the first wave of circling amphibious craft ashore. Thirty-six hours later the Marines had secured 50 square miles of jungle.

After securing the beach area, Amphibious Ready Group Marines were deployed in *Hastings*.



MEN DEBARK FROM PICKAWAY

FIRST WAVE OF ASSAULT CRAFT

ARMORED CARRIERS AT THE SHORE

MARINES READY FOR PART IN OPERATION DECKHOUSE II

ASSAULT CRAFT CIRCLE USS ALAMO PRIOR TO LANDING

LIGHTNING, TORNADOES AND WAVES AT SEA TYPIFY CERTAIN WEATHER PHENOMENA WITH WHICH NAVY COPES

FORECASTERS SUPPORT THE FLEET

By Cdr. W. D. Mallinger, USN, and Max W. Edelstein

ITS GREAT variety was the theme of Mark Twain's comment on what weather could do in New England, but it need not have been restricted to that locality: "The weather is always doing something there; always attending strictly to business; always getting up new designs and trying them on people to see how they will go. . . . In the Spring I have counted one hundred and thirty-six different kinds of weather inside of twenty-four hours."

Pitted against the variety of weather, Navy meteorologists have designed better methods of observation, increased the scope and range of their activities, invented new tools and, in recent years, linked them to computers and made forecasts and calculations with ever-increasing accuracy.

To the U. S. Naval Weather Service, the Navy assigns the varied and complicated task of meeting its meteorological needs. These activities are headed today by Captain E. T. Harding, USN, under whose direction weather centrals, stations, and units all over the world efficiently collect data and interpret it for the operational services in the air, on the sea and under its surface.

Captain Harding wears two hats. In addition to directing the Office of the Naval Weather Service, he acts as the Director of the Naval Weather Service Division of the Office of the Chief of Naval Operations. While the command and the support of 14 of the 15 Fleet Weather Centrals and Facilities are vested in CNO, the command is delegated to the Fleet Commanders.

The worldwide commitment of the Naval Weather Service is demonstrated by the location of its centers: Suitland, Md.; Norfolk, Va.; Jacksonville, Fla.; Quonset Point, R. I.; Keflavik, Iceland; London; Rota, Spain; San Diego and Alameda, Calif.; Pearl Harbor; Kodiak, Alaska; Guam; Sangley Point, R. P.; and Yokosuka, Japan. The 15th, the Fleet Numerical Weather Facility at Monterey, Calif., is under the command of the Office of the Naval Weather Service.

From these globe-encircling stations operate Naval Weather Detachments, of which there are 58. Guided by their parent organization and commands, the detachments serve the Fleet in a myriad of ways.

Some 450 officers and 2,090 enlisted men man the U. S. Naval Weather Service, its branches and detachments. Of these, the centers and their detachments require 276 officers, 1,354 enlisted men as well as 150 civilians. The rest are attached to schools, staffs, ships, etc.

Over 2,000 Aerographer's Mates (AG's) in the Navy have been trained at the Naval Air Technical Training Unit, Lakehurst, to handle the scientific, intricate tools required for their task. They are also trained in more advanced skills, such as radar meteorology and electronic data processing.

Officers, enlisted men and civilians in the Weather Service are supported by major scientific advances. While weather still deals blows and occasionally goes on the rampage, it does not do so in the unpredictable way which frustrated mankind in earlier centuries. Today what happens, or is likely to happen, can be in large measure anticipated.

THREE major advances have enhanced the Naval Weather Service's Fleet support. We now possess improved techniques for sensing and measuring the oceans and the atmosphere. Furthermore, the rapid communication of data and its analysis by computer enables the Navy to process vast quantities of data as a basis for predicting weather probabilities. Finally, multiple and significant advances in basic and applied research have expanded the meteorologists' capability to make predictions fast and accurately. Ahead of us lie still greater possibilities if preliminary indications are sound: weather modification.

Vital to weather prediction are accurate observations. Thus far, the most successful and far-reaching observation vehicle is the weather satellite, *Nimbus*, a research vehicle operated by NASA and now in orbit, provides the Navy with automatic picture transmission (APT) reception within line-of-sight. Cloud patterns and temperatures measured by *Nimbus* are relayed in "real time" to major Weather Service units. In this way, gaps are filled in the observational network over remote areas which would not otherwise yield weather data.

To make the most of satellite relays, Project FAMOS (Fleet Applications of Meterological Observations from Satellites) has been set up. Its aim is to develop techniques and extend the practical application of data to Fleet operations. Information from weather satellite *Tiros* as well as *Nimbus* is analyzed and evaluated. Such satellite coverage is very practical. For example, through its use inflight refueling can be scheduled in cloud-free regions; amphibious operations can take place at the most favorable time and in the most desirable place; and, by using weather as an ally, submarine operations can have increased assurance of success.

The principal facility on which the U. S. Naval Weather Service relies in order to keep pace with the requirements of the Navy is the Fleet Numerical Weather Facility, established at Monterey, Calif., in

CAPTAIN HARDING HEADS SERVICE

1961. There, an impressive array of computer equipment processes and produces numerical hemispheric analyses and prognoses.

From Monterey, the finished products are sent out over high-speed data links, at 4,000 teletype words per minute, to intermediate computer sites at Guam, Pearl Harbor, Norfolk and Rota. At these points, the data are tailored to meet area requirements and distributed by remote line drawing and printing equipment to Yokosuka, Sangley Point and London.

In the United States, Fleet Weather Centrals at Alameda and Suitland are the primary control stations for the West and East Coasts with tielines stretching from NAS WHIDBEY ISLAND to FWF SAN DIEGO in the West and from NAS BRUNSWICK to NAS KEY WEST in the East. The combination of radio teletype and radio-facsimile relay speeds computer-compiled meteorological information to the Fleet.

FNWF MONTEREY also has access to the worldwide data collection of the U. S. Air Force's Automated Weather Network via high-speed data link to Tinker AFB. Naval Weather Service Centers send special reports and data back to Monterey.

The speed at which computers at Monterey "read in" and "look" at the reported data is phenomenal. Reports are screened for reliability and those in error are rejected. What once could not be checked and double-checked by hand is accurately reviewed by machine. Nearly any requirement that involves tedious calculations and can be reduced to an explicit method can be adapted to computer processing.

Such speed and accuracy make possible a sound basis for the Antisubmarine Warfare Environmental Prediction Services (ASWEPS). Data transmitted to the Fleet include the form of sea states, sea surface temperatures, mixed layer depth and sound velocity versus depth in the oceans. The local meteorologist updates the data in the desired operating area and provides detailed and tailored charts to the Fleet. This data can be further related to weapon performance, detection probabilities and other parameters which will effectively aid ASW operations.

At some air stations which support ASW aircraft, briefing folders are prepared for each flight. They contain such items as ocean bottom composition, sea height forecasts, mixed layer depth, etc. These folders will be provided ASW flight crews in both oceans as soon as digital computer data links become operational.

In the ASW task groups and some of the carrier task groups, a meteorological officer gives tailored briefings to the staffs.

Even though the speed seems already incredible to a layman, even faster transmission of computer data by radio is sought. For experimental purposes, the communications satellites, *Syncom II* and *III*, have been used to transmit weather data between Monterey, Pearl Harbor and Guam. The computer-to-satellite-to-computer tests have yielded an error-free transmission

rate of 2,500 to 3,000 words per minute. Once this type of communication has been perfected, shipboard installations will include this equipment.

NAVAL AVIATION is one of the immediate beneficiaries of the progress in meteorology. The varied areas of the pilot's professional concern include visibility, surface observations, upper air data, particularly turbulence, etc.

Visibility is one of the most important elements. The pilot needs it most at the approach end of the runway during poor flying weather. To meet this need, the Transmissometer Set was developed. This remote-indicating, recording photo-electric telephotometer measures the transmission of light over a fixed path and translates it into visibility. Another assist is given by using the Runway Visual Range (RVR) system. Consisting of the RVR converter and three displays, it operates in conjunction with the Transmissometer Set and high intensity runway lights. The RVR values, displayed digitally once every minute, describe the pilot's visibility on the runway during the critical part of takeoff or landing.

Another aid for pilots, located near the approach end of the field, is a Cloud Height Set. Used in conjunction with a recorder, it operates day and night, utilizing a powerful rotating beam of light which sweeps from the horizon to a 90° vertical position and is scanned by a detector employing a sensitive phototube. This set measures and records fast and accurately cloud heights of approximately 5,000 feet and below when the optimum base line of 400 feet is used.

Surface observations are handled by the Semi-automatic Meteorological Station which combines measurements for temperature, pressure, dewpoint temperature, wind speed and direction, and rainfall accumulation.

Another tool with which to detect, locate and plot approaching storms and other meteorological disturbances is the Meteorological Radar Set. The set includes an antenna group, receiving transmitter, local indicator group and remote indicator group. Its operating range is from one to 200 miles with an azimuth scan of 360° and an elevation scan from −2° to +60°.

A closed circuit television system is used to transmit weather data to remote locations. Charts, maps and screens are augmented by oral interpretation. The receivers can request information over the audio lines. Thus pilots can be briefed in their own ready rooms.

To predict changes in the atmosphere, the meteorologist obtains upper air data by sending aloft a radiosonde, a small instrument carried up by a balloon. It measures the vertical distribution of wind, pressure, temperature and humidity up to 100,000 feet. Higher than that, when data is desired for missile or manned vehicle operations, instrumented rockets (rocketsondes) are used.

Included in the U. S. Marine Corps' Short Airfield for Tactical Support (SATS) system is a meteorology van. Now operating in Vietnam, the van is equipped to receive radio or land-line transmitted teletype and facsimile weather information, particularly local weather conditions in the area of operations. Weather briefings can be provided to remote briefing points up to 1,000 feet by using the closed-circuit TV facilities carried in the van.

WEATHER reconnaissance is the mission of two Navy squadrons: Airborne Early Warning Squadrons One and Four. VW-1, based at Guam, conducts typhoon and tropical storm reconnaissance. VW-4 is based at Jacksonville, Fla., with an advanced detachment at Roosevelt Roads during the hurricane season. Both squadrons fly the *Super Constellations*.

In June 1966, VW-1 received the Outstanding Performance Award of the Naval Weather Service for its 1965 season. In this period, the squadron completed 325 weather fixes out of 327 assigned, a 99.1 percent completion record. The overall fix accuracy was seven nautical miles. VW-1 flew a total of 9,994 hours during the year, of which approximately 26% (2,676 hours) were in support of tropical weather missions. This impressive record, accomplished with four to six operational aircraft, required flight crews of VW-1 to fly on the average of 119 flight hours each month.

VW-4's mission was expanded in April 1965 to include year-around, ocean-wide meteorological/oceanographic reconnaissance and to test and evaluate equipment. During the 1965 hurricane season, June 1 through November 30, the squadron logged 2,068 flight recon hours, made 2,190 weather observations and transmitted 183 dropsonde soundings.

VW-4 spearheaded a weather reconnaissance aircraft modernization program with the stress on flight safety and improved navigation, communications and meteorological equipment. With the assistance of Naval Ordnance Test Station, China Lake, one prototype aircraft has been modified to include these improvements:

- Improved seating at the navigator's station.
- An AN/APN-153V (four-beam) Doppler radar to provide the navigator with a digital read-out of ground speed and a needle indication of drift angle.
- An AN/ASN-41 Navigational Computer, which indicates wind direction and speed, latitude and longitude, and computes heading and distance to two pre-selected designations.
- A Loran C at the navigator's table with which to obtain geographic fixes at 700-mile range (day).
- A radar repeater scope for bearing and distance to land.
- The AN/ARC-102 Transceiver and the AN/ARC-101 Multichannel VHF.
- Improved seating at the flight meteorologist's station.
- The APN-159 Radar Altimeter which provides absolute altitude from 100 feet upwards with an altitude read-out at the pilot's panel.
- A Digital Repeater to provide the flight meteorologist with latitude, longitude, flight level, wind speed and direction.
- Other meteorological equipment: the AN/AMQ-17 Aerograph Set, the AN/AMR-1 Dropsonde Receptor, the FA-112 Precision Aneroid Barometer, ML-313 Aircraft Psychrometer, APS-29E Radar, APS Radar, aircraft rocketsonde system, and a data acquisition system which permits automatic high-speed scanning and recording of various me-

teorological and navigational parameters.

Future plans for the aircraft modernization program include:

- Droppable bathythermographs (BT's), an airborne type infra-red surface temperature indicator, and a wave/swell height computer.
- A high-speed data processing system capable of simultaneously presenting digital units to the airborne observer and binary-coded digital data to a high-speed scanner.

PT. MUGU MEN OPERATE LASER RADAR TRANSMITTER

TIROS PHOTO: TROPICAL STORM OFF BAJA CALIFORNIA

- An OMEGA navigation system with an accuracy from any fixed position of less than one mile.

Use of a micro-wave relay satellite for ultra-speed transmission is another communication system being evaluated. Hundreds of meteorological and oceanographic observations could be transmitted in seconds and radarscope photographs could be relayed to shore stations in "real time" with such a system.

PROJECT STORMFURY, sponsored by the Department of Defense (Navy) and the Department of Commerce (Environmental Science Services Administration — ESSA), continues during the current hurricane season. This project is a major attempt to investigate the possibility of modifying some aspects of these destructive storms.

About five years ago, NOTS CHINA LAKE developed an improved method of cloud seeding. Silver iodide generators, called *Alectos*, were used to produce large quantities of condensation nuclei when dropped from aircraft in canisters. These are being used in *Stormfury 1966* to explore the possibility of hurricane modification.

Taking part in the program are VW-4 *Constellations* which provide air control for all aircraft in the operation, *Skywarriors* of VAP-62, one *Skywarrior* from China Lake, and four instrumented aircraft from ESSA's Research Flight facility (two DC-6's, one C-54 and a WB-57). The USAF may also provide a C-130, WB-47's or U-2's.

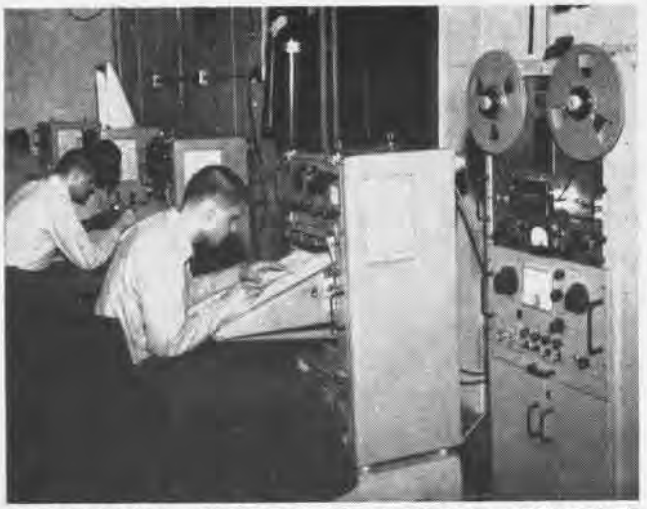
Two different seeding experiments and a "fall-back" tropical storm data collection operation have been proposed for *Stormfury 1966* and approved by a panel of five prominent scientists:

Eyewall Experiment: This involves seeding a well-developed hurricane if such develops at the right time and in the right place, and monitoring the changes in structure and circulation. The area has been prescribed: it is bounded on the north by an arc of about 500 miles from NS ROOSEVELT ROADS. The remaining borders are based on a line connecting positions from which storms during the past 75 years have taken 36 hours to move within 50 miles of any inhabited region. Hurricane seeding is done every two hours for an eight-hour interval.

Rainband Experiment: Proposed by the U. S. Naval Weather Research Facility, this experiment has four primary objectives: (1) a detailed, dynamic and thermodynamic investigation of the rainband; (2) a determination as to whether the basic character of the rainband can be changed by seeding; (3) a study of the role the rainband plays in the total storm structure: (4) an investigation of how its modification might affect the total behavior of the storm.

In the event neither the *eyewall* nor *rainband* experiments can be conducted, a fall-back data collection program is ready. Meteorological satellites will pass over the tropical Atlantic and Caribbean at 0900, 1200 and 1500 hours. Data collection by instrumented aircraft will supplement the satellite cloud pictures.

IN THE Arctic and Antarctic, the Weather Service is also in action. The *Deep Freeze* Weather Central at McMurdo Sound operates at full tilt during the summer



AG STUDENTS EVALUATE PRE-RECORDED SOUNDINGS

CREW SIX OF VP-44 IS UTILIZING ASWEPS CHARTS

season (October through February). In Operation *Deep Freeze 66*, some 700 flights were cleared to U. S. foreign stations, and flights along the 2,250-mile track between Christchurch, New Zealand, and McMurdo were monitored from weather offices at these terminals. Despite the scarcity of weather observing stations at the South Pole and the changing, harsh environment there, Navy meteorologists and Aerographer's Mates made an enviable record for accuracy.

Ice reconnaissance is a major task at the poles. Since 1961, Aerographer's Mates of the U. S. Naval Oceanographic Office's Aerial Ice Reconnaissance Unit have supported Antarctic shipping operations in the Ross Sea by providing ice observations. Aboard VX-6 aircraft out of McMurdo and Christchurch, the observer records ice conditions for *Deep Freeze* ships. Oceanographic Office ice forecasters commenced Antarctic predictions in 1964.

By following the sun, the Aerial Ice Reconnaissance Unit completes arctic summer operations when antarctic spring and summer operations begin. Known as the *Polar Prowlers*, they operate at the top and bottom of the world.

Fleet Weather Facility, Argentia, provides the ice briefing and ship routing for Baffin Bay and Labrador Sea areas from Goose Bay to Thule. It also covers the Kulusuk approaches on the southeast coast of Greenland. During the 1965 season, 442 hours of ice reconnaissance were flown and over 300 ice messages, facsimile charts and ice briefings were made. Seventeen ships were in ice-infested waters for a total of 81 days. Only one ship sustained ice damage while transiting Thule approaches.

A FAIRLY recent service, first inaugurated in 1958, is the Naval Weather Service's Optimum Track Ship Routing Program, sometimes known as OTSR. Fleet Weather Central Alameda serves the Pacific routes; Fleet Weather Facility Norfolk, the Atlantic routes. Some 2,500 route recommendations are made each year to Fleet and Military Transportation Service ships.

The recommendations are based on existing and forecast weather pattern trends and accompanying wave patterns. The aim is to provide a track which will deliver the task group and its weapons to its destination in the shortest possible time with no damage. If desired, the aim can be changed to provide adequate sea conditions for refueling, best available winds for flight operations, minimum seas for individual ship exercises, etc.

AUTOMATIC BUOY GATHERS DATA

The service cannot promise good weather en route nor does it claim to be infallible. But experienced meteorologists can recommend a track which will give the best available steaming conditions for a particular ship on a particular passage at a particular time.

FORECASTERS of the Naval Weather Service provide myriad support services to the Fleet. From pole to pole—and from the depths of the ocean to the upper atmosphere—the variety of requests for weather support surpass the "one hundred and thirty-six different kinds of weather inside of twenty-four hours" as reported by Mark Twain. Moreover, as our Fleet acquires increasingly sophisticated and environmentally sensitive weapon systems, even more bizarre demands for additional weather support are inevitable.

The Naval Weather Service stands ready to respond to the varied requirements of the Fleet for environmental support. Improved equipment, techniques, communications, computers, satellites and—most important of all—a cadre of skilled professionals are the answer to the challenge of unending variety in the weather as applied to the support of the U.S. Fleet.

Safety Record Recognized

VP-44 Cited for Fine Performance

Patrol Squadron 44 recently received a Letter of Recognition for accident-free operation for FY 1966 from Vice Admiral C. T. Booth, ComNavAirLant. In his letter, Admiral Booth congratulated VP-44 on its fine performance.

Commander E. C. Waller, VP-44's C.O., passed along the Admiral's message with a Letter of Endorsement to each officer and enlisted man in the squadron.

The squadron flies the Lockheed P-3 *Orion* and has logged some 36,000 accident-free flight hours over a period of nearly five years.

Awards for Combat Service

390-Plus Receive Decorations

More than 390 Navy men and Marines received decorations during July from the Pacific Fleet Commander-in-Chief, Admiral Roy L. Johnson. Almost all of the medals were for heroic or meritorious service in Vietnam.

Seven Silver Star Medals, the nation's fourth highest award for valor, and 11 Legion of Merit Medals, one with Combat "V," were presented. Other awards included nearly 60 Distinguished Flying Crosses, 36 Bronze Star Medals (21 with Combat "V"), 32 Air Medals and some 200 Navy Commendation Medals (128 with the Combat "V").

Admiral's Cup for Meridian

RAdm. Lynch Makes Presentation

In August, Rear Admiral John J. Lynch, Chief of Naval Air Basic Training, presented the Admiral's Cup Efficiency Award and Pennant to NAAS Meridian, Miss.

The award is given each year by CNABaTra to the one of his five commands obtaining the highest grade on the annual material and personnel inspection. Meridian received the excellent rating of 96.52.

Other stations in the competition were NAAS Whiting Field, NAS Pensacola, ALF Ellyson Field and NAAS Saufley Field.

This is the second time Meridian has won the award. The first was earned for FY '63. Captain W. A. Rawls is C. O. of the station.

HERE COME THE HELICOPTER TACCO'S

By LCdr. Orville Wright, Jr.

Radar contact 300 degrees, 15 miles . . . disappearing radar contact 290 degrees, 12 miles. Fly your indicator. Recommend sonar search."

"Standby, down dome, conduct standard search."

"Sonar contact, bearing 045 degrees, range 2,200, high Doppler, classification possible submarine. On target, tracking."

"Target course 200 degrees, speed 12 knots, Up dome. . . . Ranger two away."

"Launch the MAD."

HATS *helo showing towed MAD equipment, radar and sonobuoy antennas.*

"Roger. MAD coming out to 100 feet. Ranger four away. Contact on Ranger two, 1,500 yards, opening."

"MAD MAN, MAD MAN. Recommend reclassifying contact to probable. . . . Contact on Ranger four, 700 yards, closing. Standby for attack. . . . Weapon away."

Although this sounds like the give-and-take of a carrier-based Air Group attached to a hunter-killer force, it is actually coming from a HATS-configurated helicopter.

HATS (Helicopter ATtack System) was proposed in 1963 by the Chief of Naval Operations to combat the threat of high-speed, deep-diving enemy submarines. This system introduces the helicopter Tactical Coordinator (Tacco) who is equipped with an integrated display system. He relieves the pilot of tactical duties.

Many Fleet commands, as well as the U. S. Naval Aviation Safety Center, recognized the increased complexity of all-weather ASW and recommended the addition of Tacco.

Weapons Systems Test Division (WST), NATC Patuxent River, Md., was given the task of incorporating the necessary sensors into an SH-3A and determining the efficiency of this new concept. Naval Air Development Center, Philadelphia, Pa., developed many of the basic equipments.

In August 1964 at WST, the HATS team — engineers, technicians and Fleet-experienced ASW personnel—was ready to evaluate the concept.

With the arrival of the *Sea King*, modifications began. These included rewiring—about 3,000 new wires—removal and installation of Doppler and heading systems, modification of the armament system to accommodate MAD equipment and installation of a sonobuoy launcher on the aft stations. Control boxes, indicators, scope and consoles were fitted into the cabin where the Tacco and sensor operator (Seno) could operate and monitor them.

Besides making these installations and solving interfacing problems, the team had many other matters to investigate. Among these were basic tactics, the number of sonobuoys to be carried, display scaling best suited to the mission and the division of duties between Tacco and Seno.

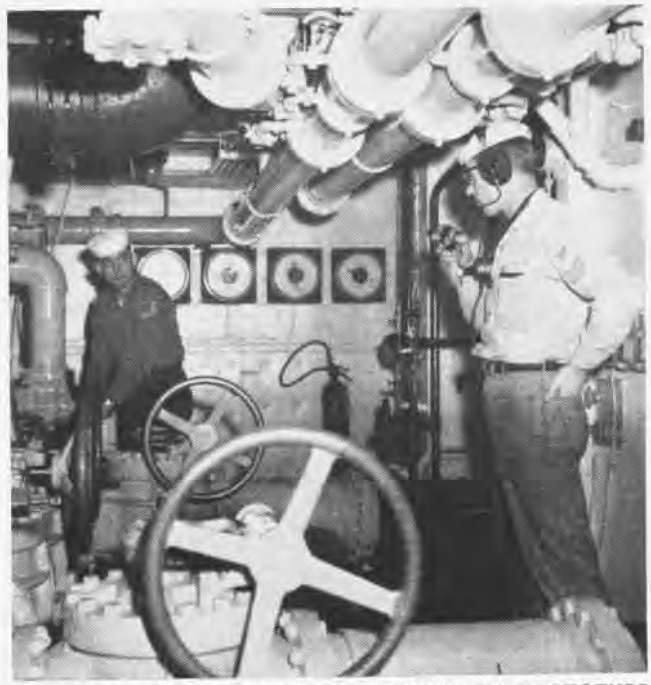
The first helicopter Tacco assigned was Lt. James R. Piche, whose experience in ASW tactics, acquired in VP-8, afforded the HATS team valuable knowledge in matters of display.

Flight testing began at NATC in September 1965 and was completed in February 1966, less than one year after delivery of the *Sea King*.

Currently the HATS helicopter is undergoing operational testing in VX-1 at Key West, Florida.

'HOW-TO' IS TAUGHT AT ABF SCHOOL

PROTOTYPE FUEL SYSTEM IS USED BY THE ABF SCHOOL



OPERATORS MAN AVGAS PUMP ROOM IN PROTOTYPE

By N. J. Strong, MMC
Photographed by Steve P. Sroka

THE HANDLING of aviation fuels has come a long way. From straining fuel through chamois skins into an aircraft's fuel tank, for instance, it has evolved to use of the modern centrifugal purifiers that clean jet fuel (JP-5) aboard today's aircraft carriers.

Fuels handling is a highly technical skill now. In Naval Aviation it is best represented by operations aboard aircraft carriers, and in that highly complex environment, the greatest requisite that personnel assigned to the Aviation Fuels (V-4) Division can have is knowledge of the job.

The Aviation Boatswain's Mate (Fuels) School, located at the Naval Supply Center, Bayonne, N. J., is responsible for providing that knowledge to future V-4 personnel —who range from prospective fuels officers to the men who will be on the nozzles at the aircraft. And, once they have learned the basics and have used them at sea, the school makes available "post-graduate" courses for their use.

Established in 1952 as a detachment of the Aviation Boatswain's Mate School, Naval Air Technical Training Unit, Philadelphia, Pa., the Bayonne organization teaches both Class A and Class C courses. It uses the original prototype of the Navy's high-capacity carrier aviation fuels system as a training aid for shop work and testing. JP-5 is pumped through the system instead of AvGas, however, for safety reasons.

Built in 1949, the prototype does not have the same configuration as a system found in any given CVA or CVS; it is, instead, a composite of all the different types of equipment used today. Standing 90 feet high, the prototype can withstand 85-knot winds.

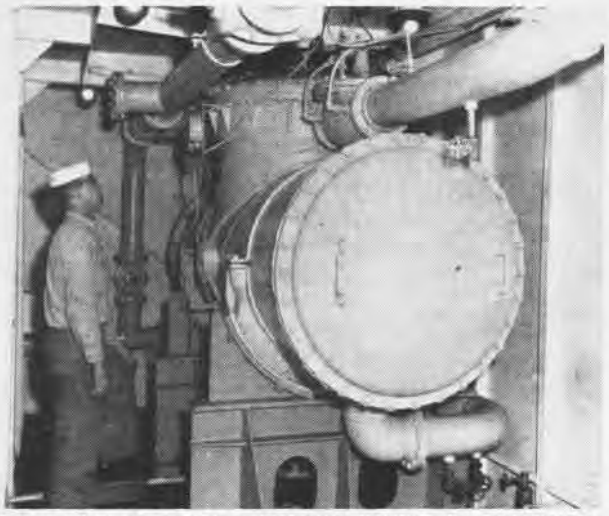
Class A students come to the school primarily from recruit training and aviation fundamentals school. Most of them have never been aboard ship; they have no conception of the operation of an aviation fuels system. Training, then, starts with the basics.

For three weeks students receive intensive training in piping systems, pumps, pressure regulators, tanks, gauges, hoses, nozzles and all the myriad equipment that makes up a shipboard fuels system. Altogether, students spend about 100 hours in this phase.

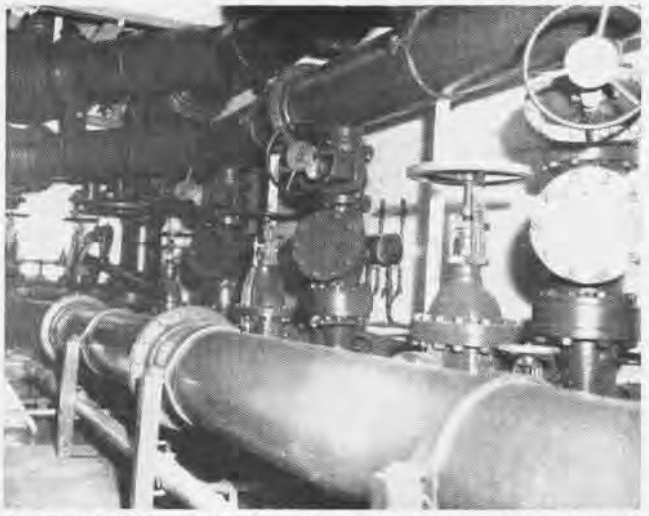
The remaining 20 hours of the course are spent in shop work using the prototype for actual operation of pumps, piping systems, fueling hoses and nozzles.

When they complete school at Bayonne, students go to Philadelphia for approximately two weeks of instruction in shore-based refueling procedures before they are sent to their next duty station as designated aviation boatswain's mates (fuels) who are not required to complete any further courses to qualify for advancement to ABF3.

The school's C phase follows the same basic lines as the A course, but the emphasis is shifted from the fundamentals to the more technical aspects of the avfuels business. It is designed and tailored to



FILTER ROOM OPERATOR CHECKS LEVEL OF PRESSURE



SALT WATER, PUMPED HERE, IS FOR DISPLACEMENT

meet the requirements of officers and senior petty officers who are returning to sea.

The same 120-hour course of study applies. About 100 hours are spent in classroom work and the remaining time is for shop work and performance tests. Additionally, officers receive about four hours of extra instruction that ranges from a rundown on applicable manuals to supply procedures.

During a normal year, approximately 125 nonrated enlisted men attend the Class A phase as students. During the same period, some 125 officers and rated petty officers attend the C course.

In an effort to keep the Fleet aware of the school and its functions, assigned personnel recently began publishing the *AvFuels Newsletter*. The periodical is sent to all CV, LPH and LPD fuels officers; it contains the latest information available on fuels and fuel systems, and it also answers questions the school receives through the mail.

In a further effort to provide its students with the latest information about the ships to which they will be assigned, the school recently conducted a survey of all CV's, LPH's and LPD's to find out what type of components each ship has in its avfuels system. The information was converted to chart form so each student could find out quickly what components would be on the ship to which he was going to be assigned.

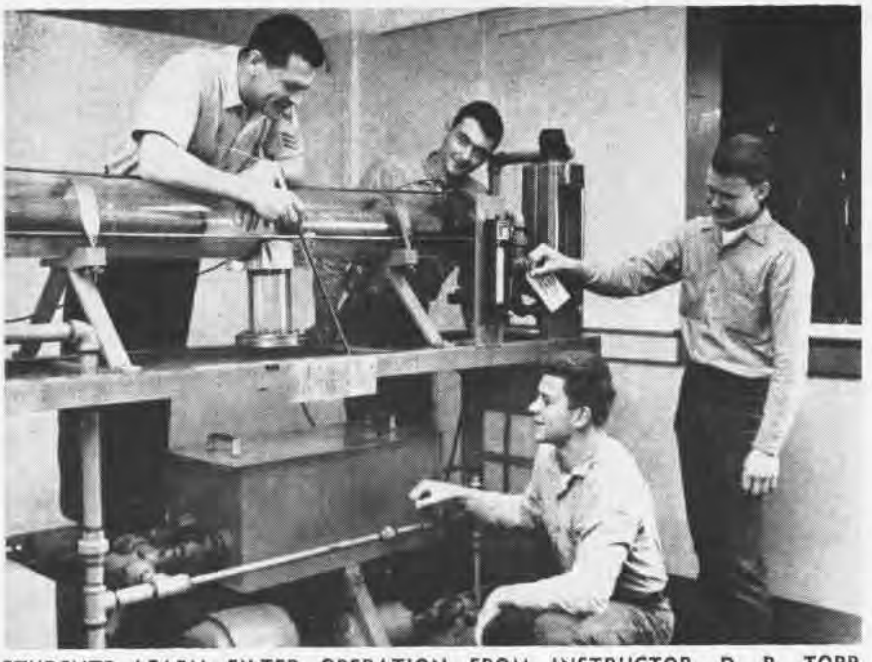
The school also maintains a reference library that contains all current manufacturers' technical manuals, as well as manuals, notices and instructions issued by the Naval Ships Systems Command, the Naval Air Systems Command and type commanders. Instructors constantly refer to this material while they write new lesson guides or prepare for classes to insure that the material they present is as current as possible.

Once changes are approved, the lesson guides in which they are included are also reviewed before they are used in class.

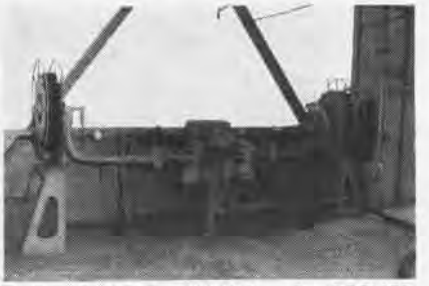
Instructors use visual aids to supplement lesson guide material. They include the standard motion picture and overhead projectors

BAYONNE STUDENTS STUDY CENTRIFUGAL PURIFIER

SAFETY FEATURE: MOTORS ARE SEPARATE FROM PUMPS



STUDENTS LEARN FILTER OPERATION FROM INSTRUCTOR, D. R. TOPP



REEL SUPPLY VALVE IS OPENED

STAFF VISITS HUMBLE REFINERY

common to almost all Navy schools, but aids peculiar to the Bayonne operation include valve and valve manifold cutaways, pumps, hoses, nozzles and an aircraft refueling station assembly. Piping and layout drawings are also provided by the staff.

Besides their normal routine, instructors are often called on to explain the school to civilians who tour the facility.

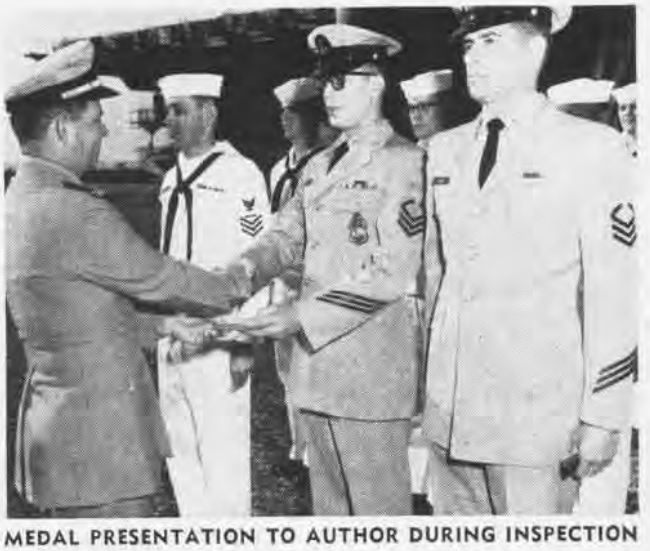
Commanded by Ltjg. Samuel D. Stilwell, the school has a staff of 12 enlisted men, headed by ABCS Donald G. Kuncl, who has served in attack and ASW carriers, and who has been an instructor at NATTU PHILADELPHIA.

Others assigned to the school include ABFC D. D. Files, ABFC B. J. Feest, Jr., the author, ABF1 D. R. Topp, ABF1 V. R. Cristofoletti, ABF1 T. N. Worning, ABF2 R. L. Lynch, YN2 R. C. Lundvall, ABFAA C. G. Klaes, SA A. E. Whidden, Jr., and SA W. E. Broderick.

Recently, the Bayonne detachment's parent organization, the AB school in Philadelphia, was merged with the Aerographer's Mate and Aircrew Survival Equipmentman (PR) Schools at NATTU LAKEHURST, N. J., to form the new Naval Air Technical Training Center under the command of Captain Devon M. Hizer. Even so, the ABF School's mission remains unchanged.

As one of the staff put it: "The instruction the school provides adds up to faster and better service to the Fleet for the air arm. When the man says, 'Fill 'er up,' we like to think we've done our share to make sure he gets the fuel he wants —quick, clean and in quantity."

AT INSPECTION BESIDE THE USS LEYTE (AVT-10)



MEDAL PRESENTATION TO AUTHOR DURING INSPECTION

LITTLE BROTHER OF NAS LEMOORE

By Chief Journalist Bill Feeney

"I WOULDN'T trade the four years I've been at Crows for any duty station the Navy could offer," is the way Billy W. Murphy, AMS3, put it. His statement expresses the attitude of the officer in charge and 42 enlisted men stationed at NALF CROWS LANDING, little brother of NAS LEMOORE.

Located in the remote northern area of California's San Joaquin Valley, 134 miles northwest of Lemoore, Crows Landing covers an area of over 5,000 acres plus an additional 3,000-acre target area located 22 miles west in the Diablo Mountain Range.

Established in May 1943, Crows Landing was placed under the control of the Commanding Officer, NAS LEMOORE, on July 1, 1965.

Only five civilians are employed at the field. They include the crash captain, public works maintenance supervisor, fuel farm supervisor, fuel farm worker and heavy equipment mechanic.

Because of the small number of men at Crows, each man is assigned extra duties. These are coordinated by the station's Leading Chief, Joseph T. Dixon, Jr. An example of the "various duty" concept is A. V. Smith, SHI, who is barber, exchange manager and staff, club manager and head bartender, and gas station operator.

There are no housing or messing facilities at the field. Personnel live off station and either "brown-bag" or eat lunch in the station's club, designated "The Crows' Nest."

Sparsely manned Crows Landing averages nearly one piece of rolling stock for each man assigned, 40 to be exact, including two MB-5's. The field has only one aircraft, an H-19 which is used for search and rescue and general logistic and utility operations.

THIS VR-7 *Hercules is one of many aircraft which utilize facilities at Crows Landing.*

LCDR. W. W. *Wetzel and Chief Dixon check communications with the target area.*

The operating schedule of Crows is coordinated through the Commander, Fleet Air Detachment Lemoore. Present scheduling allows for use of the target and MLF runways during any eight-hour period in each 24. Fleet squadrons attached to NAS LEMOORE practice landings on its two runways—more than 100,000 landings and takeoffs each year since 1950.

The target area, a flattened mountain top, is made up of 200 seven-foot tractor tires arranged in enlarging circles. Two men, a primary controller and an observer, man the area and act as firefighters. Nearly every rocket run creates some sort of blaze. If the fire is extensive, assistance is requested from the NALF or the local Forestry Service.

On the basis of the total number of acres at Crows, each man is responsible for 134 acres. An exaggeration perhaps, but the increased responsibility and workload placed on NALF personnel by the requirements of the Vietnam conflict — the readiness of Lemoore's squadrons — are not exaggerated. It is doubtful that there is any place in the Navy where so few do so much for so many with so much area to cover.

Captain H. J. Boydstun is Commanding Officer of NAS LEMOORE. LCdr. Westlie W. Wetzel is the officer in charge of "little brother."

ONLY *assigned aircraft, this H-19, which is affectionately called "Crows' Angel," has its own "various duty" program to carry out.*

LITTLE *brother's crash crew are (left to right) Oppliger, DeWyse, Johnston, Crash Captain Latham (civilian), Sanchez, Fahrer, Bandy.*

COLLEGE JUNIORS AND NAVAL AVIATION

Photos by M. A. Hardin, PHAN

MIDSHIPMEN *William R. Cooper, Villanova University, and his instructor, LCdr. William C. McNett (L), preflight a T-34 Mentor before taking off on a scheduled training flight.*

EVERY SUMMER, some 1,300 college juniors stream into NAS CORPUS CHRISTI, Texas, for a rigorous three-week indoctrination in the ways of Naval Aviation.

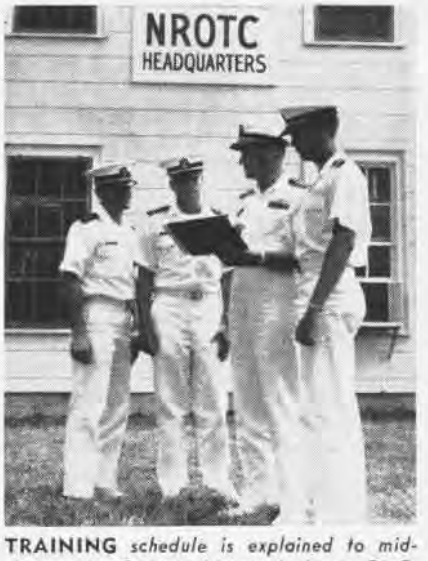
Midshipmen of the Naval Reserve Officer Training Corps, they represent 52 colleges and universities. The principal purpose of the training they receive at Corpus is to provide them with an understanding of the capabilities of Naval Aviation in both limited and nuclear warfare.

There is another aspect to the indoctrination. The time they spend at Corpus often serves as an inducement to the midshipmen to seek careers in Naval Aviation after they graduate from school and are commissioned.

After they arrive at Corpus and are greeted by Rear Admiral R. A. Macpherson, Chief of Naval Air Advanced Training, the midshipmen are divided into three groups of about 450 men each. Then they begin the program, which is administered by officers, chief petty officers and noncommissioned officers from the staffs of the naval science departments of the NROTC colleges. The group included in the photographs accompanying this article was under the direction of Captain Marcus Lowe, professor of Naval Science at the University of Oklahoma.

Midshipmen training is built around classroom lectures relating to Naval Aviation, as well as a practical introduction to the field. The course includes about a half-dozen flights in different types of aircraft, leadership training and rugged physical conditioning.

REPORTING *aboard, three midshipmen check in with gate guard at Corpus Christi.*



TRAINING *schedule is explained to midshipmen by Captain Marcus L. Lowe, OinC.*

COCKPIT *of TF-9J Cougar undergoes close scrutiny of midshipmen at Corpus Christi.*

PAT-A-CAKE *with a purpose: Midshipman David F. Lines watches reactions of fellow trainees during a pressure-chamber ascent.*

NOSE GEAR *of a TS-2A Tracker is inspected by Lines, Dennis E. Dwyer and Cooper. They looked over several types of planes.*

Each midshipman makes three flights in the T-34 *Mentor*, the Navy's primary trainer. Accompanied by a Fleet-qualified aviator as an instructor, he learns to preflight the aircraft, start the engine, taxi the plane to the runway and take off in it. Once the T-34 is airborne, the midshipman gets a chance to perform basic maneuvers: loops, turns and climbs.

The trainee also gets a crack at the TF-9J *Cougar* jet trainer, but only after he passes the medical examination that certifies he can cope with the stress of high altitudes and high speeds. In a low-pressure chamber, he is put through a simulated climb to 25,000 feet. An ejection seat trainer gives him the "feel"—quite literally—of leaving an aircraft in an emergency.

After flight training ends, midshipmen are given a sample of precision flying by the *Blue Angels*, who perform their low-level maneuvers for the trainees' benefit.

The NROTC students don't spend all their time in classrooms or with airplanes, however. Each group is honored at a formal Midshipmen's Ball at the Officers' Club; the affair is always well attended by the young ladies of Corpus Christi.

Off-duty midshipmen have their choice of recreation activities in Corpus Christi. This tourist and recreation center is the gateway to the Padre Island National Seashore, and it comes complete with 100 miles on beaches along the Gulf of Mexico.

The final event of each training period is a sunset parade. The midshipmen are reviewed by high-ranking military officials and dignitaries from the surrounding community and performance awards are presented.

When they leave Corpus Christi, the midshipmen are bound for amphibious training at Little Creek, Va., or at San Diego, California.

ASSISTANCE *is provided by Midshipman Dwyer as he helps Lines get settled in a T-34. Cooper checks out plane's second seat.*

GOING UP *in a hurry, Cooper pulls the protective face curtain and starts a swift ride in an ejection seat trainer for jet aircraft.*

RIGHT TOOL —WHAT'S BU

REPAIRMEN *Ohlson (L) and Camacho draw a pair of wrenches from W. C. Barr, AMH2.*

NECESSARY *maintenance, impossible without right tools, is done by Neer, ADJ3.*

GOOD ADVICE *is heeded by Bibler, AME2, as he checks lock and chain on toolbox.*

TOOLBOX POTPOURRI GIVES VR-8 MAINT

The aviation maintenance man's too since Wilbur and Orville Wright th carpetbag and set out to make histo been replaced by sockets, wrenches to meet the needs of today's compl personnel of Air Transport Squadron equipment is found stowed in more of squadron repairmen being used to craft assigned to VR-8's parent com and its two flying squadrons, VR-7 ar

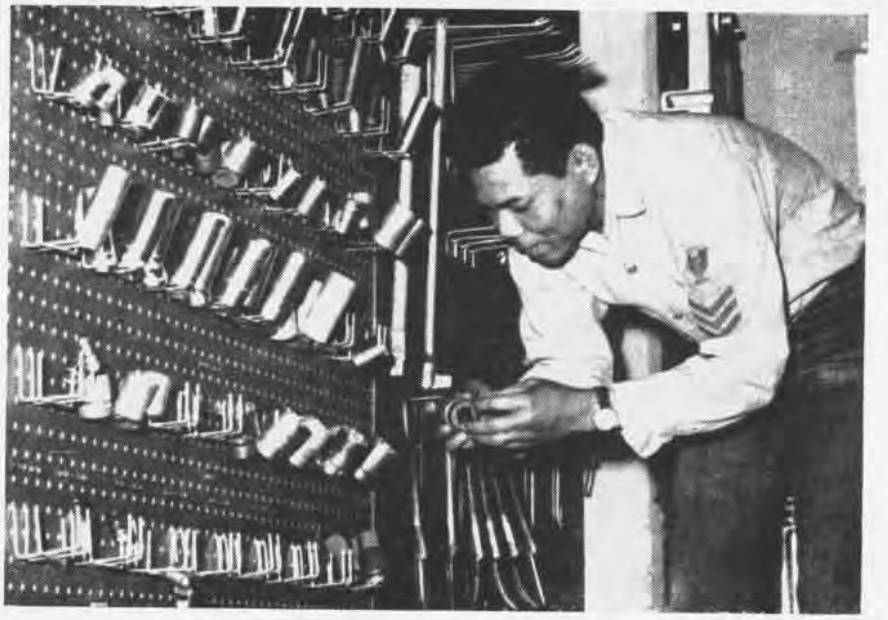
Photographed

N GOOD HANDS
STED IS FIXED

NCE PERSONNEL TOOLS FOR EVERY PURPOSE

and its contents have come a long way
few crude instruments into a tattered
ck in 1903. "Spit and baling wire" have
undreds of other implements designed
craft. Witness the tools used by the
Eight, NAS Moffett Field, Calif. This
600 toolboxes when it's not in the hands
tain more than 35 C-130 Hercules air-
, the Naval Air Transport Wing, Pacific,
-22. The box is the mech's best friend.

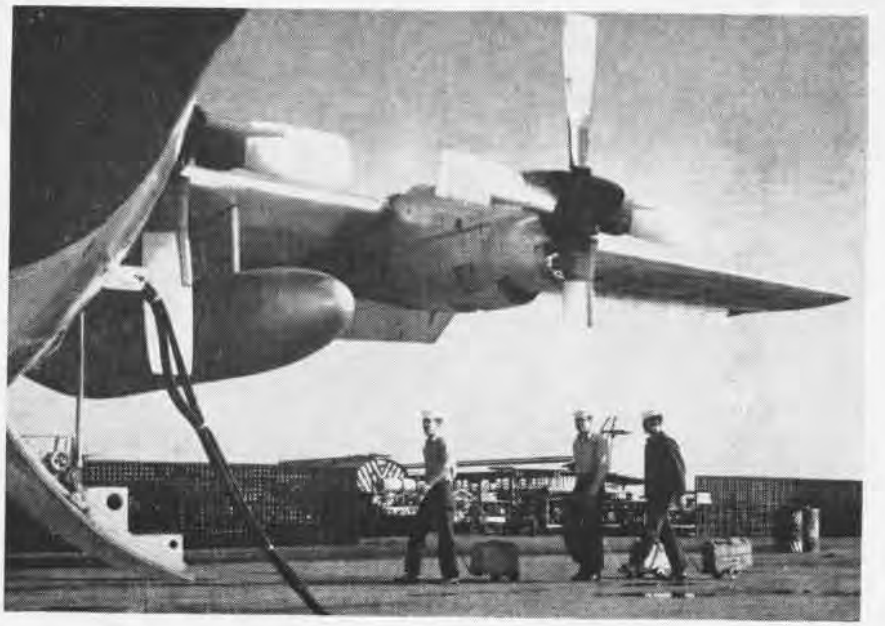
G. T. Mills, JO1



VR-8 *toolroom supervisor, Deroxas, AK1, selects the right tool for job at hand.*

INVENTORY *of a mechanic's toolbox is a chore assigned to VR-8's John E. Knott.*

MEN *and tools on their way to repair a leak in a fuel tank of a C-130 Hercules.*



MAINTAINING FLYING TEST BEDS AT PATUXENT

By Lt. James E. Ayars, USN

IF YOU HAD to install an additional 60,000 feet of wire and 26 black boxes in a P-3A *Orion*, how would you do it? At Naval Air Test Center, Patuxent River, just such a task was encountered recently by the personnel at the Weapons Systems Test Division (WST) when they installed project equipment in one of the P-3A flying test beds.

Such problems must be met regularly by WST whose mission is to evaluate the latest aircraft weapons systems before they are introduced into Fleet operations. At present, the division is involved in testing nearly 230 projects, ranging from ordnance compatibility tests on the TA-4 and A-7A aircraft to Project A-NEW, the latest in ASW systems.

To cover its various assignments, WST, directed by Captain E. H. Doolin, Jr., USN, employs about 800 people, almost equally divided between civilian and military personnel. They are assigned to one of the many branches representing every facet of Naval Aviation: Systems Branches — VF, Attack or ASW; Technical Branches — Ordnance, Electronic Warfare, Communications Engineering, Electrical and Environmental; and Supporting Branches — Maintenance and Instrumentation.

Twenty-four aircraft assigned to WST are the flying test beds. Owing to the wide range of projects, the types of aircraft must be varied. WST has 14 different types on hand: A-1, A-3, A-4, A-6, A-7, T-39, C-131, F-4, F-8, OV-1, P-2, P-3, SH-3 and UH-2. In certain categories, for example, the F-8, there are three different models. Other NATC aircraft are available if required.

A Naval Research Laboratory detachment, under the administrative control of WST, operates and maintains one C-54 and two EC-121's.

Military personnel maintain the assigned aircraft under the direction of LCdr. J. D. Frazier, Maintenance Officer, assisted by Maintenance Chief R. M. Smith. Because of their diversity, the airplanes could become a maintenance nightmare were it not for the vigorous cross-training program. For example, an aviation structural mechanic (hydraulics) assigned to WST for a normal tour of shore duty may attend hydraulics courses for as many as five different aircraft before he rotates to sea duty. Much of the instruction is accomplished by on-the-job training. A man may work on a helicopter all morning and on a fighter aircraft all afternoon.

One of the problems most frequently encountered with multiple-type aircraft operations is availability of spare parts. Material shortages are compounded owing to the many types of aircraft used as test beds. However, despite this, not-operationally-ready aircraft-supply (NORS) are held to a minimum by close and constant coordination with the Supply Department at NAS PATUXENT RIVER.

There are two aircraft lines, one for jets and another for multi-engine planes. Both lines operate under one officer, Lt. J. E. Ayars, with a CPO assigned to each line, Chief J. A. Grabarkiewiez and Chief J. H. Wylie.

The jet line is operated under the work center maintenance concept, while the multi-engine line is operated from a separate hangar under the flight crew maintenance system.

In order for the Line Officer to carry out efficiently his large areas of line and ramp responsibilities, a closed circuit television is being installed in the line shack. This will permit the Line Officer to monitor traffic from one central location. A new wash rack installation and turntable style jet hot-spot are being installed.

The Maintenance Officer's area of responsibility extends to three widely separated hangars so he requires an efficient communications system. Walkie-talkies or "page boys" are carried by all maintenance supervisors.

One problem unique to test divisions is the large amount of new equipment continually being installed or removed as needed for particular projects. This often involves extra instrumentation and additional wiring. Adequate space must be found for the project installation and proper electrical tie-ins made. Care must be taken to ensure that all the aircraft's basic systems and structural components remain intact throughout the installation and flight test.

Many of the test aircraft will serve only one tour at NATC and then be reassigned to a Fleet squadson. Thus all project equipment must be removed and the aircraft

THE A-7A CORSAIR II IS BEING EVALUATED WHILE WORK STILL CONTINUES ON THE RELIABLE A-1E SKYRAIDER

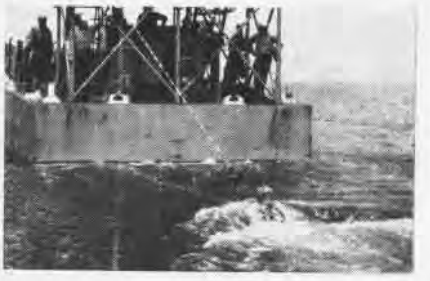
returned to its original Fleet configuration prior to its being inducted into PAR. Often the test equipment is reinstalled in another aircraft in order to continue the project. One high priority project recently removed from an aircraft going to PAR involved nearly 600 man/hours of work and the removal of two and one-half truck loads of wiring.

A central group oversees the removal or installation of the project equipment in order to coordinate the project work with the required maintenance check cycles, maintain the necessary project information folders and ensure that standard and safe operating procedures are followed. This group, unique to WST, is known as the Project Liaison Group. It works in conjunction with the Quality Control Section, under the direction of Ltjg. Dean Harvey.

CIVILIAN and military personnel meet with the Project Liaison Group to determine the best adaptation of a new installation in an aircraft. Once project power and space requirements are examined, blueprints and HMI's are studied to determine how the installation can be made compatible with the aircraft. Project equipment is clearly marked and colored so that it may be readily distinguished from the aircraft's components. The final installation is checked and a thorough Quality Control inspection made.

Approximately 1,800 military man/hours are spent each month to remove installation or repair project equipment. The same personnel perform the daily maintenance and regular inspections on all assigned project aircraft. The entire workload is done by about 200 men in the Maintenance Branch. Despite the diversified and heavy workload, aircraft availability is maintained at high levels.

The high output of WST is made possible by continued, cooperative effort. To meet the varied needs of Naval Aviation, WST continues to combine the skills of the test pilots, Fleet avionics personnel, electronics engineers and maintenance personnel in preparing the most efficient air weapon systems for the U.S. Fleet.



A SPECIALLY RIGGED LCM GIVES REALISTIC LESSONS IN SEA SURVIVAL

NEW COURSE IN SEA SURVIVAL BEGINS

A CONVERTED LCM (Landing Craft, Mechanized) with a 15-foot high boom and three 50-foot whaleboats are essential training equipment for a new course, entitled "Sea Survival," now established by the Naval Aviation Schools Command at Pensacola.

The course is specifically designed for young naval flight officers and officer candidates who will be living, working and sometimes fighting in an ocean environment. Such training will increase their confidence in their ability to perform and survive at sea.

Prior to the establishment of the new course, training was provided in the areas of land survival and water survival from the standpoint of swimming, escape from ditched, inverted aircraft, as well as some training in parachute escape technique in the water.

Last year, it was decided that survival should be presented in two phases: one from the swimming aspect; the other with a strictly sea survival approach.

The new and more elaborate Sea Survival course is composed of 32 hours of instruction, divided evenly between the classroom and the water environment. Upon completing the classroom program, students practice water entry from a 30-foot-high-tower. From the tower, they slide down a 50-foot-inclined cable to the water. After this initial step comes practice in boarding various types of rafts near the pier.

It is at this point that the LCM and whaleboats are used. On the first trip to sea, the student is dropped from the boom to practice extricating himself from the parachute harness as he is towed behind the boat at seven knots.

For the next training maneuver, the students are dropped, in full flight gear, from the whaleboats and are required to swim 300 yards through open water to the LCM and board the boat by climbing a Jacob's ladder.

On their second trip to sea, the students, usually about 55 in number, are dropped from the LCM with PK-2 life rafts. After extricating themselves from their parachutes, the students board the one-man life rafts and spend the next four or five hours using the survival equipment. They prepare fresh water from sea water, utilizing the desalting kit and the solar still. They try out the signal mirrors, day and night flares, the shark chaser and dye-markers.

During these practice sessions, the students in their rafts are circled, as a safety precaution, by the LCM and whaleboats.

The Survival School is directed by LCdr. D. A. Barnes, Jr., and the Sea Survival Division is staffed by seven instructors who are supervised by LCdr. E. E. Rivers.

TWO OF FIVE *instructors' consoles like those used to control the Pacific Fleet ASW School's 14A6A Coordinated ASW Tactical Trainer are manned by naval personnel. In the background are three display screens which show the progress of an exercise.*

THIS 'TASK FORCE' IS LAND-LOCKED

Photos by D. P. Perret, PHC

A MODERN computer-controlled training system, designed to simulate the actions of an entire antisubmarine warfare (ASW) task force, is a key element in a new tactical trainer building dedicated recently in San Diego, Calif.

Known officially as Device 14A6A, the trainer is designed to provide real-time exercises in antisubmarine warfare tactics for classes of up to 250 decision-making Navy personnel ranging from enlisted men to admiral.

Dubbed the Coordinated ASW Tactical Trainer, the device is one of two installed in the new trainer building operated by the Pacific Fleet Antisubmarine Warfare School. The other model, called the Surface Ship ASW Trainer, is designed to train the ASW attack team of a surface ship in all functions from search through attack.

Device 14A6A, on the other hand, trains decision-making personnel of an entire ASW task group in the missions they must perform when they are engaged in coordinated intertype ASW tactics. When it goes into full-time operation, the trainer will provide shorebased training with a degree of realism, its builders say, that approaches actual sea maneuvers.

Built by Lockheed Electronics Co., the 14A6A "will permit the Navy to give realistic, coordinated tactics training to ASW task force crews without the expense involved in actually taking a fleet of ships and aircraft to sea," a representative said.

The trainer was designed and built under a $7 million contract with the U.S. Naval Training Device Center. A similar one was delivered to the Navy at Norfolk, Va., shortly before the San Diego facility was dedicated.

San Diego's device consists of several hundred major electronic units housed in the 40,000-square-foot building at the ASW School. In the center of the building is a 400-seat auditorium where three projection screens display a continuous real-time record of an ASW exercise as it develops.

Thirty-six individual rooms surrounding the auditorium represent the command centers of the ships and aircraft that make up the simulated task force. Each command center is isolated from the others, except for communications and sensing equipment — radar, sonar, electronic countermeasures, etc.—normally found in the ship or aircraft the room represents.

Eighteen of the command centers may be used either as destroyers or submarines, and 16 may function as either fixed-wing aircraft or helicopters. An aircraft carrier and a flag plot are also included. Any desired combination of these aircraft and ships can be assembled into a task force for training purposes.

To the rear of the auditorium, in full view of the display screens, are five instructor consoles used to control the training exercise. Behind the consoles is a large, digital-

TYPICAL *of command centers included in the 14A6A is this one. During an ASW exercise, trainees learn to develop ASW skills.*

THIS NEW *40,000-square-foot building at the Pacific Fleet ASW School, San Diego, houses the complex 14A6A tactics trainer.*

analog computer—the "brains" of the complex 14A6A.

In an "ocean area" of 360,000 square miles, trainees operate the simulated ships and aircraft in exercises against instructor-controlled target "submarines."

The crews undergoing training do not work out "canned" problems with predetermined solutions. Instead, the 14A6A simulates actual operating conditions to a degree that instructors can maneuver one or more "enemy subs"—choosing speed, climb, dive, surfaced-periscope-snorkel operating modes, ahead and astern, just as if they were operating the real thing.

Crews in training must respond to the situation the "enemy sub" creates. The speed, range and maneuvering capability of each command center corresponds with those same capabilities in the actual vehicle it represents.

So, if a real fixed-wing aircraft on an ASW mission can turn and circle a contact only as quickly as its speed and maneuvering characteristics permit, so can its simulated counterpart in the ASW School's new trainer.

Trainees must rely entirely on radio communications and on radar, sonar and other sensing equipment to coordinate their attacks. They get no other information, and they are unable to see the display screens that show the progress of the exercise.

The entire proceedings, however, can be seen and heard by instructors and observers. The exercise is projected on the three screens in the auditorium; each task force vehicle and "enemy" is represented as an individual, color-coded dot of light. One screen shows an overall view of the entire battle area, and the other two can provide closeups of action in selected areas.

When an exercise is underway, the proceedings are recorded on tape for playback to the trainees after the problem is completed.

The flexibility of the 14A6A makes it possible to use the trainer in an almost limitless number of problems. The number and types of ships and aircraft in a task force may be varied; so may their initial positions, weapons, and sensor and communications gear.

The trainer can also be used to develop, analyze and evaluate tactical concepts for the school.

MANNING *one of the 14A6A's 16 ASW aircraft control centers are ASW School's Lt. David B. Himelstein and Russel M. Brown, AX2.*

AIRCREWMAN *Brown mans the ASW Sensor Control Panel of an HS-type aircraft control center, one of 16 depicting ASW aircraft.*

ENSIGN BAGBY *took the first step toward becoming a Patrol Plane Commander when his wife pinned on his Navy "Wings of Gold."*

AFTER REPORTING *to VP-44, Ltjg. Bagby (3rd from left) works at navigation table. In first crew, he served as Navigator/Third Pilot.*

MAKING OF A PATROL PLANE COMMANDER

TRAINING *to quality as copilot, Bagby listens to NATOPS officer, LCdr. Jim Thomas.*

AS COPILOT, *Bagby copies a clearance as the aircraft taxies out to line at Argentia.*

RELYING *on experience and training, Ltjg. Bagby ponders question in PPC NATOPS quiz.*

THE CHALLENGES of Naval Aviation are various, but certainly none is more exhilarating than that which occurs when a young Naval Aviator begins his first tour as a Plane Commander on patrol. Patrol aviation not only offers him the opportunity to gain knowledge and experience but also provides him the challenge of directing a crew on ASW patrols.

He is flying an aircraft designed for ASW missions, the Lockheed P-3A *Orion*. He and his crew are capable of locating and destroying enemy submarines, for the P-3 is a single weapon system that can operate completely independently. The Patrol Plane Commander has responsibilities that in many ways are comparable to those of the C.O. in a combatant surface ship.

By Ltjg. Leo P. McGinty, Jr.
Patrol Squadron Forty-Four

Before he is ready to be a Plane Commander of an *Orion*, the young lieutenant has undergone a careful and thorough training program. Let's take a look at a new Patrol Plane Commander, Lt. Jim Bagby, an officer with Patrol Squadron 44.

Turn the pages back to November 21, 1963. On that day, after 16 months in the Naval Aviation Training Command, Ens. Bagby was designated a Naval Aviator at Corpus Christi, Texas, and was given his orders to Patrol Squadron 44. This achievement, noteworthy as it may seem, was to be only the first in a series of training stages that would lead him to the command of a VP-44 P-3A and its crew.

The very day he received his wings, he checked in with VT-29 at Corpus for navigation training, since his first job in an operational squadron would be third pilot/navigator. Hours of classroom instruction on point-to-point tactical navigation were augmented by practical navigation in VT-29's TC-117 and T-29 aircraft.

After six weeks of training, Jim packed his bags and headed east to Norfolk, Va., and the Fleet Airborne Electronics Training Unit (FAETULant) for his first introduction to antisubmarine warfare. The first eight weeks were devoted to classroom instruction on the latest tactics and equipment used aboard the P-3A. This was

CDR. J. H. McDONALD, *VP-44 C.O., gives Ltjg. Bagby his hard-won PPC certificate.*

NOW A PPC, *Ltjg. Bagby inspects and briefs his crew prior to an operational patrol.*

Photographs by W. G. Riggs, PH3, and R. J. McCarthy, AN

VP-44 SKIPPER *congratulates Lt. Bagby on being a first-tour PPC with his own plane.*

the foundation so necessary to the ASW neophyte before his introduction to the aircraft he would fly and employ for the next three years.

In mid-March 1964, Ltjg. Bagby reported to VP-30 Det. Alpha (now VP-30) at NAS PATUXENT RIVER, Md. Here he underwent hours of ground instruction on the many complex systems of the P-3A and began his familiarization and instrument training in the four-engine, turboprop aircraft. Later in the tactical phase, he learned to maneuver and navigate the P-3A through all the tactical patterns of an operational mission.

Finally, in June 1964, seven training-filled months after his designation as a Naval Aviator, Ltjg. Bagby reported to VP-44 at Patuxent River. He was now in an operational squadron, but his training was only beginning. Following a prescribed squadron syllabus, he attended ground training lectures and flew operational and training flights. Three months later he was a designated Patrol Plane Third Pilot (PP3P). This meant he was the navigator in a crew and shared the time in the cockpit with the other two pilots in the crew. Flying in this position, he deployed with the squadron to Argentia, Nfld., where his training continued under the supervision of his Plane Commander.

After compiling sufficient pilot time, 650 hours, and completing the squadron flight syllabus and a written examination, Ltjg. Bagby flew a "solo" check flight with his Commanding Officer at Argentia in conditions that would challenge the most experienced pilot. He was then designated PP2P and elevated to the position of copilot in his crew.

As copilot he began to understand the responsibilities and problems encountered by the PPC. Not only did he gain the knowledge required of the Plane Commander, but he also broadened his experience upon which every leader must draw in directing a mission. As second in command, he was a first-hand observer of the decisions made by the Plane Commander, which involved the safety of the crew and the accomplishment of the mission.

As copilot, he became aware of the important role the PPC plays in crew coordination, the secret of a successful solution to the ASW problem. As a copilot in the Fleet-wide exercises, Ltjg. Bagby began to qualify for the position of Patrol Plane Commander.

After six months as copilot, Ltjg. Bagby passed his NATOPS exam and check flight, plus a check flight by the commanding officer. During these flights he demonstrated his ability to command an entire crew on an operational flight.

He was designated a Patrol Plane Commander on December 13, 1965, just 17 months after reporting to the squadron. Later that same month he received word, while on a deployment to Bermuda, that he had been promoted to the rank of Lieutenant.

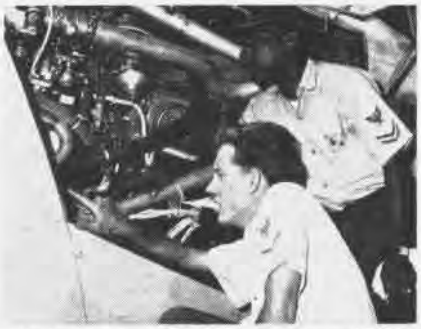
Now the techniques of decision-making and leadership he had observed in others were his. As PPC, he alone was responsible for the performance and safety of the other 12 crewmen aboard and a multi-million dollar aircraft. It was his to command. It had become his responsibility to weigh carefully and judiciously the factors involved in completing a mission.

The high point of Lt. Bagby's first tour came in June, only two years after reporting to VP-44 when he was assigned his own crew and aircraft. (It has been the practice of VP-44 to have a minimum of two first-tour plane-holding PPC's among the 12 crews.)

Is this too much responsibility to place on a young naval officer? The challenge is great, but the standards are high enough to assure that it will be met. Lt. Bagby proved that he was ready to shoulder the responsibility to "get the job done." He and his contemporaries who gain such positions of distinction have taken the first big step toward becoming the Navy's leaders of tomorrow.

THE PPC *of a P-3 Orion is responsible for safety of his crew and success of mission.*

FLEET AIR WINGS ON PATROL



THE MEMBERS *of VP-778 on their two-week period of active duty training in Hawaii had expert direction. VP-22, commanded by Cdr. J. D. Fuller, gave the word on the P-3 Orion. In the picture at upper left, D. R. Swenson, ADR3 (left), receives instruction from R. R. Blecha, ADJ2, on the P-3's ordnance system. In lower row of photographs, left to right, instruction goes on: S. A. Bayer, AMS2, and C. L. Gray, ADJ2 (front), study Orion radar system: G. T. Bearss, ATR2, (left), VP-22 flight technician, describes APN-153 Doppler navigation system to K. A. Hahn, AE3; J. C. Shine, ADR2, VP-22 mechanic, explains intricacies of the T-56 engine, used in the Orion, to C. W. Scott, ADR3, who is also a mechanic attached to VP-778. The Reserve squadron reports that VP-22's training rates a capital T.*

ON THE SIXTH of August, Patrol Squadron One, led by Commander A. E. Clemente, returned to NAS WHIDBEY ISLAND after a six and a half month deployment with the Seventh Fleet in Vietnam and WestPac.

All 12 of the squadron patrol bombers with 144 officers and men returned en masse to be greeted by Commander Fleet Air, Whidbey, and Fleet Air Wing Four, Rear Admiral Joseph A. Jaap, and hundreds of relatives, friends and sweethearts. *The Cameron Highlanders,* a Scottish bagpipe band from Bellingham, Wash., provided the music.

While deployed, VP-1 spent two-thirds of its time operating from an air base outside Saigon. Its aircraft made low-level, surveillance flights in support of Operation *Market Time,* the coastal blockade of South Vietnam.

* * *

Early this summer, the *Mad Foxes* of VP-5 welcomed their first P-3 *Orion* with a planeside "Welcome Aboard" ceremony. Captain Harry B. Scott, Commander Fleet Air Wing 11, largest Fleet operational unit under Commander Fleet Air, Jacksonville, joined the officers, men and dependents in welcoming the aircraft to the "Foxes' Den."

Commander M. D. Marsh, VP-5 C.O., had flown the *Orion* to Jacksonville from NAS PATUXENT RIVER where his crew and three other crews had completed more than six weeks of intensive training in the P-3.

* * *

August 1 marked the end of an era in the Hawaiian and mid-Pacific area with the departure of VP-4's last *Neptune.* The squadron lead was passed from the P-2 *Neptune* to the P-3 *Orion* that day.

Introduced to the islands in 1950, the Hawaiian-based P-2's fulfilled their many missions with honor.

The squadron, commanded by Cdr. R. T. Duncan, Jr., has logged more than 70,000 accident-free flight hours during the past 87 months while flying *Neptunes* and

transitioning to *Orions*. The accumulation began more than seven years ago in Naha, Okinawa. Since then the squadron has won the Chief of Naval Operations Aviation Safety Awards in 1960, 1961 and 1963.

* * *

At NAS MOFFETT FIELD, Captain Leslie T. Barco relieved Captain John W. Crowe as Commander Fleet Air Wing Ten.

The new Commodore of the wing was Assistant for Planning in the Air, Surface and Electronic Warfare Division of DCNO (Development) prior to his Moffett assignment.

During WW II, he served with Scouting Squadron 70 and in the Aleutians, later with other patrol outfits.

During the Korean conflict, he was attached to the staff of ComCarDivs 17 and One. He commanded VP-16 and was the first C. O. of VP-30, the replacement ASW squadron for the Atlantic Fleet. Subsequently, he was Operations Officer for Commander, Fleet Air Whidbey.

* * *

Reenlistments have been staged in many places, but a reenlistment on a life raft off the coast may be a first for VP-23, based at NAS BRUNSWICK, Maine.

Donald R. Turner, AD2, was reenlisted for six years by Lt. James H. Gompper, PPC of Air Crew Two. At the time, the crew was undergoing survival training at Langley AFB, Virginia.

* * *

Shipping over one mile high for a stack of one-dollar bills 12 feet high were three members of Patrol Squadron Seven: Henry R. Rustmann, ATN2, Austin M. Jackson, AX2, and Floyd A. Beatty, AX2.

The ceremony was conducted aboard one of the squadron's *Neptunes* while airborne with Ltjg. Danon D. Liston at the controls. The squadron's Executive Officer and the PPC, Commander John R. Swadener, officiated.

The combined total of re-enlistment bonuses was over $22,000, which is approximately four feet of one dollar bills per man. A day earlier, John D. Terry, AO2, also of VP-7, had shipped over, bringing the total to $27,000.

* * *

VP-18, stationed at Roosevelt Roads, P. R., is beginning to consider itself a training squadron. This past season it has had two contingents of midshipmen to host as well as four Reserve VP units.

Special tours and instruction were given the visiting midshipmen as well as indoctrination and training flights. Complete survival instructions were given and the midshipmen were thoroughly briefed on what to expect during the flights.

* * *

Over 12½ years (100,000 hours) of accident-free flying were marked for VP-22 when its Commanding Officer, Commander Jack D. Fuller, logged the record-making flight.

VP-22 is no stranger to safety awards. It has won the Commander Naval Air Force, U. S. Pacific Fleet, Quarterly Aviation Safety Award consistently since 1954. In 1956 and 1959, it also won the CNO Aviation Safety Award. The squadron presently holds the Navy Battle E award for combat excellence and the Isbell Trophy for excellence in ASW operations.

* * *

Is it coincidence or fate that brings and keeps together two young naval officers? Or is it a Navy detailer in Washington, D.C.?

VP-7 reports that two lieutenants have, since their initial meeting, pursued almost identical careers. They are Lt. Dale V. Raebel and Lt. Franklin H. Gerwe, Jr.

As NavCads in VT-1, they met at Saufley Field in November 1961 and were both members of the NavCad Choir. At VT-2 at Whiting Field, they transitioned into the T-28 *Trojan* and later landed, one after the other, for their carquals aboard the USS *Antietam*.

They trained in multi-engine aircraft at Corpus Christi under the same instructor. Both received orders to a training squadron flying the P-2 *Neptune*, a plane they later were to fly as Patrol Plane Commanders.

Commissioned as ensigns, with file numbers in succession, they received their Navy Wings of Gold.

After training in the Fleet Airborne Electronics Training Unit in Norfolk, Va., they were assigned to VP-30 and then to VP-7.

On February 1, 1966, they became part of the Regular Navy and were promoted to the rank of lieutenant. On the home front, they married two sisters.

In their most recent transfer to VT-9 at NAS MERIDIAN, Miss., they are still together—qualifying as instructors in the T-2 *Buckeye*.

TO BE A FLIGHT *engineer in a patrol aircraft requires skill and versatility, efficiency and thoroughness. He must be a true professional. Such a crew member is VP-8's Jerome C. Matthews, AD1, Crew 11's Chief Flight Engineer. Three hours before takeoff, he is hard at work, checking and making sure that all is well. Above, at left, he checks individual oxygen equipment. In flight, his place is between the pilot and the copilot. The middle picture shows him supervising the ASW sensor gear checkout. After the flight (right), he puts down the gripes for Maintenance Chief R. J. Merritt. Matthews will find the aircraft to be in an up-status for next flight.*

SELECTED AIR RESERVE

CAPT. SIMONSEN PRESENTS SWORD TO ENS. SIMONSEN

CALIFORNIA LEGISLATURE HONORS NARTU ALAMEDA

Swearing Them In

When his son graduated from the University of South Carolina, Captain Carl D. Simonsen, C.O. of NARTU JACKSONVILLE, swore him into the Navy as an ensign. After the oath, Captain Simonsen gave Charles Michael his sword (see photo above) and also swore in three other Navy ensigns, five second lieutenants in the Air Force and a Marine Corps second lieutenant.

Young Simonsen became Navy-oriented when he was born at NAAS SHELTON, Washington, Oct. 7, 1944.

He was in the NROTC at the University of South Carolina for all four of his undergraduate years. He is now assigned to CNABaTra for flight training at Pensacola.

Los Al Wins Again

The NAS LOS ALAMITOS Procurement Team has proved itself first in CNAResTra, for fiscal year 1966, by winning both the Chance Vought and Bear Trap trophies for outstanding Officer Candidate procurement.

The Chance Vought Trophy is awarded annually to the number one station in the 18-station Naval Air Reserve Training Command in Aviation Officer Candidate procurement. The Bear Trap Trophy is awarded annually to the station that shows the greatest amount of improvement in such procurement from its previous fiscal year.

The Los Alamitos recruiting team captured both trophies this year by enlisting 335 Aviation Officer Candidates. This figure was 186 men over their quota of 149, which gave them a 224% attainment of quota.

Los Al's Enlisted Recruiting Department also made an impressive showing this year by placing second in the Command's competition for the Lockheed Trophy, awarded for outstanding enlisted recruiting.

Legislature Honors Alameda

A few weeks ago, Assemblyman Robert W. Crown (center in photograph above) presented a resolution, adopted by the California State Legislature, to Captains Jack M. Hestilow (left) and Jim B. Bock (right) at NARTU ALAMEDA. The resolution listed the past achievements of the Bay Area's Naval Air Reservists in commemoration of the 50th Anniversary of the Naval Air Reserve Program.

Captain Bock has ended two years as C.O. of the NARTU, relinquishing the post to Captain Hestilow. Captain Bock is now serving as Naval Air Reserve Coordinator on the staff of CNO.

Olympic Star Joins Reserve

In August, Stanley Cwiklinski, a member of the gold-medal-winning Vesper Boat Club in the 1964 Olympics in Tokyo, turned to another means of speed, a Navy jet. He was sworn into the Aviation Officer Candidate Program at NAS WILLOW GROVE by Captain Nelson R. Charles, station C. O.

September 28 he reported to Pensacola for preflight indoctrination.

Maine Honors Reservists

Governor John Reed of Maine proclaimed the month of August as Naval Air Reserve Month in recognition of its 50th Anniversary. Witnesses to the Governor's signature were Captains R. L. White and David C. Rains, C. O. of NAS BRUNSWICK, and Commanders R. Greeley and Robert A. Ouellette.

Among the special events scheduled for the anniversary observance was a reunion dinner dance at the Officer's Club, NAS BRUNSWICK, held on the 29th of August.

Captain Watts Heads AWS-87(L)

Captain Donald L. Watts, a Naval Air Reserve pilot who holds 13 of the Navy's most important awards, has assumed command of the 250-member Air Wing Staff 87 (L) at NARTU ALAMEDA.

He relieves Captain Sam Jackson as head of the Weekend Warrior unit which is the administrative body for NARTU ALAMEDA's 29 tactical and non-tactical squadrons and units. He thus becomes the top drilling Naval Air Reservist in the Bay Area where 3,000 now train.

In WW II, flying from the decks of aircraft carriers *Monterey* and *Intrepid* in a Navy *Hellcat*, Captain Watts flew some 55 missions. During the Second Battle of the Philippine Sea, he sank a *Natori*-class Japanese light cruiser—a feat which earned him the coveted Silver Star. He also was on active duty in the Korean conflict when he flew 62 missions with VF-874.

Captain Watts has been affiliated continuously with the Reserve program since 1940 and, most recently, has served as Assistant Chief of Staff in charge of readiness for Air Wing Staff 87 (L).

Assigned Overseas

The first Maintenance Instructor Team of the Naval Air Reserve Training Command to be assigned overseas has completed special training and is now deployed in Thailand. Normally associated with the TAR's, these active duty reservists are instructing Thailand AF crews as a UH-34 Maintenance team, known as the MTT 5-67.

"YOU'LL NEED *a mop," says LCdr. K. H. Tribou after swearing his young son Edward into the Naval Air Reserve at Willow Grove. Airman Tribou participated this past summer in the station's accelerated training program.*

The eight members of the team were chosen from various activities throughout the Naval Air Reserve Training Command for their extensive knowledge of the H-34 helicopter.

The men attended a special instructors' course at NAMTG MEMPHIS and then reported to MCAF SANTA ANA, Calif., where they participated in the UH-34D maintenance course. There they instructed others, thus gaining valuable teaching experience. The team is headed by ADRC Ellis C. Bessey, a member of NARTU JACKSONVILLE.

Speaking of the MTT 5-67 assignment, Rear Admiral Richard L. Fowler, Chief of Naval Air Reserve Training, said, "I think it's especially appropriate for the Naval Air Reserve to celebrate its 50th Anniversary with another 'first'."

Air Reserve Birthplace Marked

Fifty years ago the Naval Air Reserve was born on the shore of Huntington Bay, Long Island, N. Y. To commemorate that event, Naval Aviators of 1916 and 1966 were recently present at the unveiling of a historic marker installed by the Town of Huntington. The marker honors the Yale Unit and the Naval Air Reserve.

In the picture below, third from left, is Mr. Artemus L. Gates, first Naval Air Reserve pilot to become a designated Naval Aviator. He was issued Naval Aviator number 65. To his left is Mr. Kenneth R. Smith who was Naval Aviator number 87.

Standing to the left of Mr. Smith is Commander Thomas A. Williamson, Jr., Naval Aviator number 13,224.

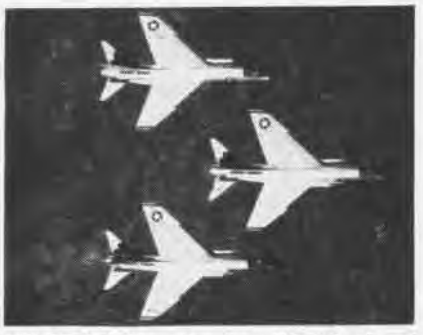
Mr. Gates and Mr. Smith were two of the original 12 members of the first Yale Unit, which formed the nucleus of the first Naval Reserve Flying Corps, from which the U. S. Naval Aviation Force, Foreign Service, grew.

Others participating in the ceremony (left to right) were Captain John E. McQuary, C. O. of NAS NEW YORK, and Mr. John P. Kane, Town Supervisor of Huntington.

RESERVE INSTRUCTOR TEAM DEPLOYED TO S.E. ASIA

NAVAL AIR RESERVE BIRTHPLACE IS GIVEN MARKER

AT SEA WITH THE CARRIERS



THREE *F-8 Crusaders from VF-162 aboard Oriskany on a mission over South Vietnam.*

THI LONG *railroad bridge was heavily damaged by A-4 Skyhawks flying from Ranger.*

HANCOCK *steams under the Golden Gate Bridge. The attack carrier returned to home port, NAS Alameda, Calif., after a nine-month cruise to the combat zone off Vietnam.*

PACIFIC FLEET

ORISKANY (CVA-34)

A five-month period in the States, half of it spent at sea, is not much of a respite for crew members of a carrier which supported more than 12,000 combat sorties in 6½ months "on the line" in the South China Sea last year.

But that's all the men of *Oriskany* had. They're back at war.

The same five months is likewise not much time for pilots and other personnel of the *Oriskany*-based attack air wing that was credited with being the Navy's most-decorated, with more than 1,100 awards, when they returned to their home bases Dec. 16, 1965.

But that's all the men of CVW-16 had. They're back at war, too.

Fleet reports tell the story:

"Black smoke rising to 20,000 feet and visible from a distance of 140 miles was the result of a strike against the Dong Nahm petroleum-oil-lubricant (POL) storage area 16 miles northwest of Haiphong by A-4 *Skyhawks* from the Seventh Fleet carrier *Oriskany*. . . ."

"Aircraft from . . . *Oriskany* hit a POL storage area near Vinh. . . ."

"The newly-rebuilt Tam Da Bridge, a vital link in the only rail line between Hanoi and Vinh, was knocked down again Friday as Attack Squadron 163 *Skyhawk* pilots from . . . *Oriskany* pounded it with 1,000-pound bombs. . . ."

The men of *Oriskany* and CVW-16 were back at war. And for one of them, Ltjg. Robert F. Adams, a VF-162 pilot, it is a war with very real dangers.

For the second time in less than a year, Ltjg. Adams was plucked from North Vietnamese territory after his aircraft was shot out from under him. Last Oct. 5, he was rescued from the Gulf of Tonkin after his F-8 *Crusader* was hit by a surface-to-air missile (SAM).

In his second brush with death, Ltjg. Adams was unable to get his damaged plane out of North Vietnam when it was struck by conventional ground fire. He ejected in a mountainous region and guided in a rescue helicopter after he landed in a heavily-wooded area. The pilot avoided possible capture by moving away from the landing site when he heard loudspeakers blaring in a nearby village.

The VF-162 pilot wasn't bragging about them, but his two rescues make him the holder of some rather dubious "firsts": He is reportedly the first pilot to survive a SAM hit, and he is also said to be the first pilot to be rescued from North Vietnamese territory twice.

For Ltjg. Adams, the war in Vietnam is very close indeed.

VIP visitors aboard the *Big O* while the ship was on the line included Secretary of the Navy Paul H. Nitze and his party, Admiral

Horacio M. Rivero, VCNO, and Vice Admiral John J. Hyland, ComSeventhFlt. SecNav Nitze also boarded the carriers *Ranger, Intrepid* and *Constellation* during his tour of Seventh Fleet units.

The 108,000th arrested landing aboard *Oriskany* was made by Commander Robert E. Spruitt, CAW-16, in an A-4E *Skyhawk*. No. 111,000 was the next arrestment reported by *Oriskany*; it was made by Lt. John A. Feldhouse, VA-152.

RANGER (CVA-61)

Ranger pilots continued to strike at a variety of military targets—communications lines, POL sites, transportation facilities, railroad sidings and storage depots among them—as the carrier operated off Vietnam.

Ranger crewmen were in the record-claiming business after they and personnel from the ammunition ship USS *Pyro* teamed up to transfer 254 tons of ammo and Fleet freight in an hour and 13 minutes. The tonnage, which was computed to average 209 per hour, was said to be the best yet using four transfer rigs.

HANCOCK (CVA-19)

NAS ALAMEDA-based *Hancock*, with squadrons of CVW-21 embarked, has returned to home port after a WestPac cruise that lasted almost nine months.

PIED PIPER *is Captain Charles H. Carr, who is the new C.O. of USS Valley Forge.*

Away from Alameda for 264 days, *Hancock* steamed some 75,000 miles—most of them in waters off Vietnam—during her second combat cruise with units of the Seventh Fleet. Her pilots shot down two MIG-17's, flew more than 11,000 sorties, dropped more than 16 million pounds of ordnance on enemy targets and participated in strikes against fuel storage areas near Haiphong.

The ship logged more than 14,900 launches and 14,300 arrested landings during the deployment. Her aircraft consumed more than 13 million gallons of JP-5 and 1.5 million gallons of AvGas. Fuel requirements were 208 percent greater than they were during the ship's 1964-65 cruise.

On that deployment, *Hancock* aircraft, along with planes from *Coral Sea* and *Ranger*, were launched on the first responsive strikes against North Vietnam.

VALLEY FORGE (LPH-8)

The only American-born member of the *Royal Scottish Pipers Society* (see cut) assumed command of the *Happy Valley* when Captain Charles H. Carr relieved Captain Richard O. Madson—and crewmen are afraid reveille will never be the same again.

Complete with a costume that includes kilts and other appropriate paraphernalia, Captain Carr has been playing the bagpipe for about eight years. Purpose of the society to which he belongs, he says, is to maintain "the history and purity of the bagpipe."

Valley Forge's new C.O. is also, incidentally, a recent graduate of the Naval War College, holder of a masters' degree from George Washington University, a veteran of the Korean conflict as an A-1 *Skyraider* pilot and holder of the Distinguished Flying Cross, Bronze Star, five Air Medals and Purple Heart.

WINNER *of Admiral Flatley Award, ASW carrier Bennington operates in the Pacific.*

AIRCREWMEN *of VS-25 aboard Yorktown have become "Centurions" the hard way. They include (top, L-R) Jenkins, Latour, Petty; (bottom) Baker, Boerner, Miller, Birkett.*

BENNINGTON (CVS-20)

Big Benn and four embarked ASW squadrons joined more than 40 other ships to participate in a major First Fleet exercise, *Belaying Pin*, off the coast of Southern California. The eight-day training exercise was designed to simulate conditions in Southeast Asia.

YORKTOWN (CVS-10)

With *Yorktown* back in home port, Long Beach, Calif., after a seven-month WestPac cruise with other units of ASW Group Three, Rear Admiral Fillmore B. Gilkeson was relieved as group commander by Rear Admiral Harry L. Harty, Jr., during a ceremony aboard the

KEY PERSONNEL *of HS-11 use one of the squadrons' helicopters to advertise a claim for the most flight hours in a month's time.*

antisubmarine warfare carrier.

Seven VS-25 crewmen became "Centurions" the hard way after they rode through 100 arrested landings each, aboard *Yorktown*. All aircrewmen, they were not allowed to ride in squadron aircraft during pilot carquals or refresher landings and made all their touchdowns during operational flights that lasted from four to six hours.

The enlisted Centurions include F. E. Petty, ATC; R. P. Jenkins, AO2; J. I. Baker, AX2; W. G. Miller, AO2; J. L. Latour, ATN3; W. K. Boerner, AE3; and B. B. Birkett, AX3.

CONSTELLATION (CVA-64)

CVW-15 pilots aboard *Connie*, in their first month of action since the carrier rejoined Seventh Fleet units off Vietnam, have shown why they earned the nickname "Fabulous Fifteen" during WW II and Korea.

In that month's time, they shot down a MiG-17, sank five North Vietnamese PT boats, blew up thousands of gallons of vital petroleum supplies and pounded bridges, trucks, barges, highways and other military targets.

Lt. William McGuigan, in a VF-161 F-4 *Phantom II*, shot down one of six attacking North Vietnamese MiG-17's near the Co Trai Bridge, some 20 miles from Hanoi. The plane was downed during a running battle between the MiG's and four *Phantoms*, which were flying protective cover for CVW-15 A-4 *Skyhawks* and A-6 *Intruders* that had just bombed the bridge.

HORNET (CVS-12)

Hornet and embarked squadrons were among units conducting an unsuccessful SAR mission for the downed Royal Tai DC3 that was carrying General Joseph W. Stilwell, Jr., Army Special Forces Commanding General, Fort Bragg, N.C.

KITTY HAWK (CVA-63)

Captain Paul E. Pugh has relieved Captain Martin D. Carmody as C.O. of *Kitty Hawk*.

PRINCETON (LPH-5)

Princeton and other units of the Seventh Fleet Amphibious Ready Group were operating offshore just south of the Demilitarized Zone that divides North and South Vietnam, supporting ground troops involved in Operation *Hastings*.

The LPH switched to the support role after sending Marines ashore as part of the Seventh Fleet Special Landing Force ordered into the inland operation. They originally made the amphibious assault from *Princeton* to participate in Operation *Deckhouse Two*.

F. D. ROOSEVELT (CVA-42)

FDR is the latest East Coast carrier to join the Seventh Fleet for duty in the waters off Vietnam. Home-ported in Mayport, Fla., CVA-42 deployed to WestPac to become the second Atlantic Fleet carrier then operating in the South China Sea. The other was the CVS

AFTER *making FDR's 152,000th arrested landing in the South China Sea, Ltjg. Morris Kemple, Jr., climbs down from his Skyhawk.*

Intrepid, which was provided with light attack capabilities before she deployed.

Piloting an A-4C *Skyhawk*, Ltjg. Morris Kemple, Jr., VA-172, made *FDR's* 152,000th arrestment.

ATLANTIC FLEET

WASP (CVS-18)

Record-claimers, take note. Personnel of HS-11 say the 1,100 hours their pilots flew in June are the most ever flown by an East Coast HS squadron in one month. More than 70 percent of the flights were made during a 10-day cruise.

The previous record was reportedly 1,084.5 hours, set by HS-5. "Now, *Double One* is second to none," HS-11 personnel claim.

SHANGRI LA (CVA-38)

A Navy pilot, who has flown more than 60 different aircraft models and who has accumulated more than 970 carrier landings during his career, is *Shangri La's* new Executive Officer. Commander A. J. Nemoff relieved Commander H. A. Winter as X.O. just after *Shang* returned to home port, Mayport, from a six-month overhaul at the Philadelphia Naval Shipyard.

Commander Nemoff came to CVA-38 from NATC PATUXENT RIVER, Md., where he was chief project officer of the Flight Test Division. A member of the Society of Experimental Test Pilots, he was involved in research, development and testing of aircraft.

Renovation of a portion of *Shang*'s flight deck, a project started in Philadelphia, continued as the carrier returned to Mayport from a shakedown cruise that took her to Guantanamo Bay, Cuba. The carrier was scheduled to deploy to the Sixth Fleet in the Mediterranean in September.

RANDOLPH (CVS-15)

Randolph returned to home port, Norfolk, after a 3½-month cruise to seven countries in Northern Europe—a deployment crew members have already dubbed *Randy's* own "Goodwill Invasion."

The deployment was by no means all in-port time, however. *Randy* and her embarked ASW Air Group 60 participated in a 30-ship, five-nation NATO exercise off Norway, and, with other ships of ASW Group Four, the CVS joined in several other underway operations.

Even so, the portion of the deployment best remembered by crewmen were port calls to one city in each of the countries the ship visited. They included Bergen, Norway, in the heart of the fiord country; Rotterdam, the Netherlands, called "the world's busiest port"; Copenhagen, the capital of Denmark; Scotland's capital city, Edinburgh; Portsmouth, England, home of the British Navy; Belfast, capital of Northern Ireland; and Hamburg, West Germany.

Activities of crew members in port are typified by this report from the ASW carrier:

"H H Danke"—freely translated, "Thank you, Hamburg"—was the sentiment expressed, quite literally, by *Randolph's* crew as the carrier left West Germany's largest port city after a five-day stay.

In appreciation for the courtesies extended them while their ship was in port, *Randy* crewmen spelled out the message of thanks on the flight deck. (The spell-out, along with other events during *Randy's* stay in Hamburg, is included in a NANEWS picture story on the next page.)

"The welcome mat was out in Hamburg," reported Ltjg. J. S. Davis from the CVS. "Many sailors were befriended and taken into local homes. . . . Tours were arranged; they included excursions through Hamburg, a tour of the border area along the USSR sector and a one-day trip to Berlin."

More than 330 *Randolph* crewmen and personnel from embarked Air Group 60 were airlifted to West Berlin for a visit to the divided city. Ltjg. Davis said they were credited with comprising the largest single group of Americans ever to tour West Berlin. Nine members of the group were chosen to be guests of Berlin's Mayor, Willy Brandt, at a private reception.

Back at sea, *Randy* sailors proved it was not all play and no work: They claimed to have set a new Atlantic Fleet record for underway replenishment with a rate of 164.8 tons in 35 minutes.

SAFETY *Council President, Howard Pyle, addresses Lex crewmen during ceremony.*

WITH *Independence anchored off Barcelona, RAdm. G. P. Koch inspects the ship's crew.*

FACE *to face with an infamous wall, Randolph crewmen pause to view East Berlin.*

LEXINGTON (CVS-16)

More than 405 *Lex* men have joined some 3,000 Pensacola area Navy men as graduates of a special driver improvement program. They were congratulated during a ceremony aboard the CVS by Howard Pyle, President of the National Safety Council, who lauded their participation in the eight-hour course.

Thirteen aircraft and maintenance specialists of the U.S. Air Force's precision flying team, the *Thunderbirds*, were guests aboard the aviation training carrier for a one-day cruise, as were 32 enlisted and eight officer Waves from NAS PENSACOLA; the latter were invited for the day at sea as part of the celebration of the Waves' 24th "birthday."

Arrested landings No. 159,000 and 160,000 were made aboard CVS-16 by Ltjg. Joe H. Weatherman, VT-5 student pilot, in a T-28 *Trojan*, and Lt. Robert W. McFerren, VA-42, in an A-6A *Intruder*.

RANDY SAILORS VISIT HAMBURG, BERLIN

Photographed by H. A. Voumard, PH2, USN

DEPLOYED TO EASTERN ATLANTIC, RANDOLPH VISITED WEST GERMANY

WHEN THEIR ship pulled into Hamburg, West Germany, for a five-day stay, crew members of the USS *Randolph* took advantage of the opportunity to tour free Germany's largest port—and, thanks to an airlift, many of them visited West Berlin. In fact, they comprised what was called the largest American group ever to tour the western sector.

GERMANS *by the thousands accepted invitation to tour Randy during the port call.*

SPELL-OUT *forms the words "H H Danke," Randy's way of thanking Hamburg citizens.*

ALONGSIDE *the destroyer USS Weeks, Randolph is moored in Hamburg as visitors stream aboard. More than 35,000 toured the ship.*

IN BERLIN, *officers and enlisted men from Randolph, accompanied by their wives, view once-busy Potsdamer Platz—then and now.*

Navy Trains with Air Force

In an Army V/STOL Simulator

Two Navy lieutenants, William R. Casey and Gary W. Mau, recently completed a special familiarization course in an XV-5A flight simulator at the Ryan Aeronautical Company in San Diego. They were part of a class of 15 test pilots from the Air Force Research Pilot School at Edwards AFB, Calif., where the Army XV-5A V/STOL research aircraft is being tested.

The flight simulator, the only one of its kind, consists of a display screen and projector, an instrumented cockpit, an XV-5A mechanism and a computer system.

Three-dimensional images, representing an area of three square miles, are projected on a panoramic screen. The computer makes the landscape react immediately to any changes in cockpit controls, thus providing realistic flight conditions.

The simulator can create all directions of motion (forward, backward, sideways, up and down) with a limitation of 30-degree roll and 20-degree pitch.

A-7A Tests at Pax River

A Thousand Hours Now Amassed

On July 28, the 1,000th test flight hour and the 681st flight were reached in the A-7A *Corsair II* flight test program. It was ten months after the initial plane's first flight.

The milestone hour was reached at NATC PATUXENT RIVER by the No. 6 airplane during an armament separation demonstration in which rockets and 20mm cannon were fired. Lt. S. M. Cobb was the pilot.

Army Test-fires Chaparral

Is Modified Navy Sidewinder 1C

The U. S. Army's newest air defense guided missile system, *Chaparral*, has been successfully test-fired at White Sands Missile Range, New Mexico.

The missile, a Navy-developed *Sidewinder* 1C modified for ground-to-air launch, is aimed by the gunner in a turret mount. The missile automatically guides on the target's heat source after launch.

All test objectives were met.

IN DALLAS, NAVAL OFFICERS AND MEN ARE TRAINED IN MAINTENANCE

A-7 TECHNICIANS TRAINED

FIRST OPERATIONAL test of the Navy contractual requirement of 11.5 maintenance hours of work of each flight hour of the A-7A *Corsair II* is scheduled for next spring, utilizing Navy technicians now being trained at the LTV Aerospace Corp. plant, Dallas, Texas.

A 90-day test involving a minimum of 600 flight-hours by the new light attack bomber will be held at NAS CECIL FIELD, Fla., to see if the plane meets contract guarantees by the manufacturer. This is the first new Navy plane to come under such a maintainability-reliability evaluation now a part of contracts.

A group of 96 officers and men have been attending ground school and getting on-the-job training in the A-7A at the Dallas plant preparatory for this evaluation test. The team which will keep the planes flying during those 90 days will be composed of both factory-trained Navy men and technicians indoctrinated by the Naval Air Maintenance Training Group.

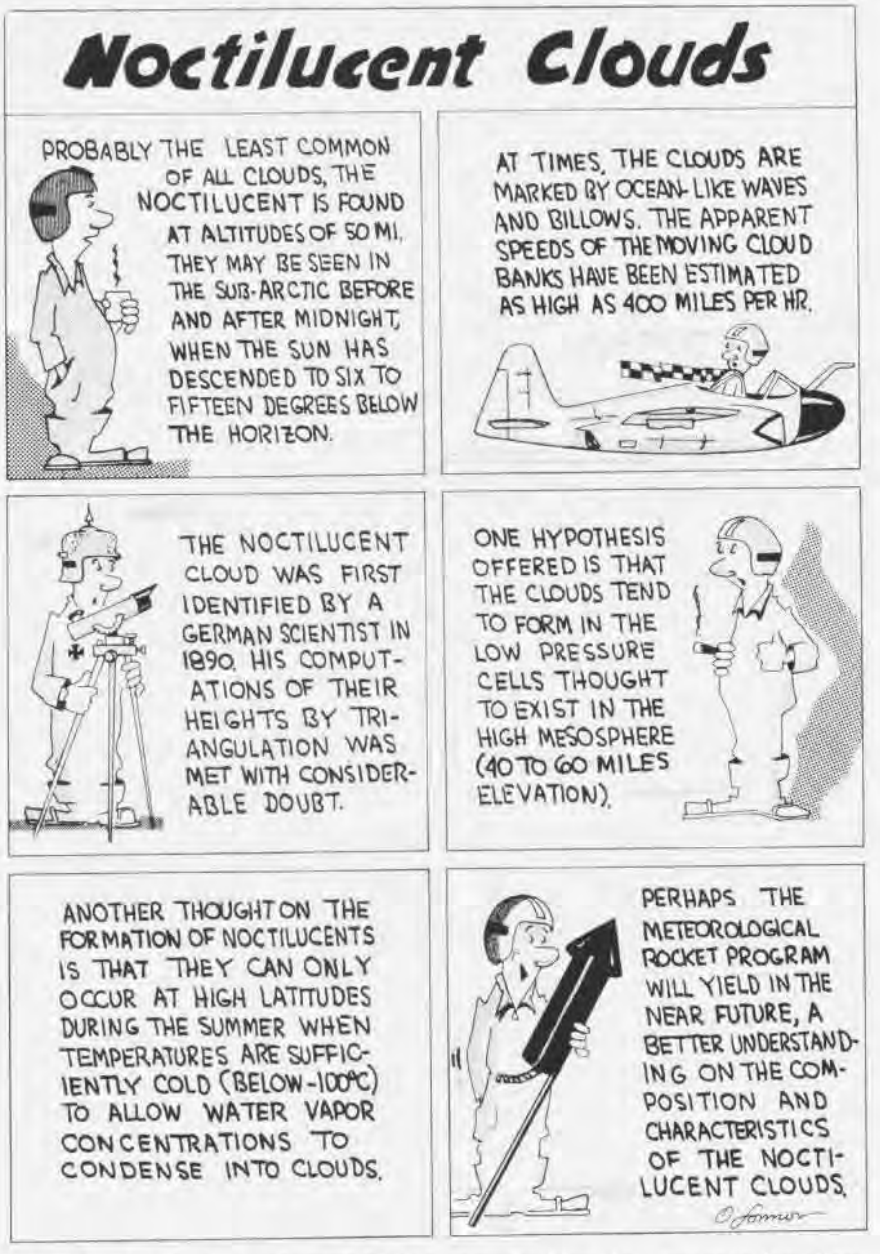
Training in Dallas is being conducted by the LTV product support department, with two new A-7A's assigned to the Navy men to disassemble and reassemble for practice. The new program for the first time gives the men an opportunity to work on a plane instead of watching the work being performed by company technicians.

Some of the 96 men in the advanced training cadre have been in Dallas since last April being trained in ground school in their specialties. For three weeks in August, however, they moved to a training hangar where they performed a wide variety of maintenance tasks on A-7A's Nos. 14 and 15. These included removal and reinstallation of engines, removing outer wing panels, checking hydraulic and electrical system components, and loading weapons on wing and fuselage pylons.

First A-7's will start arriving at the Fleet's "Corsair College" training squadron, VA-174, Cecil Field, early this month and at VA-122, the West Coast training squadron at NAS LEMOORE, Calif., later. Six planes will be assigned for the 90-day guarantee tests at Cecil Field, scheduled to start May 1, with NATC PATUXENT RIVER, Md., as monitor for the program.

At the same time it was training the 96 maintenance officers and enlisted men, LTV also was conducting a week's ground school for key pilots who will serve as flight instructors at Cecil Field and Lemoore. A total of 24 pilots are being trained, including five to ten hours of flight time by each pilot.

When they return to their duty stations, these men in turn will train pilots assigned to other new squadrons receiving the *Corsair II*.



Night Lighting for SATS

Lakehurst is Evaluating System

The Naval Air Test Facility (Ship Installations) at NAS LAKEHURST is conducting evaluation tests of night lighting for use by the Marine Corps in its Short Airfield for Tactical Support (SATS) program.

The lighting includes ten rows of four lights each located at the approach to the runway. The last row consists of 20 lights which give a T-bar effect. The first five rows also have a strobe light in the center, flashing in sequence for directional line-up information.

Forty white, deck edge lights outline the runway. These lights can only be seen when the aircraft is lined up for landing.

Two bars, of four green lights each, indicate where the runway begins for landing purposes. A lighted wind sock is located at one side of the runway as is also a control tower with a rotating green and white beacon.

Red or green lights tell the pilot whether the runway is in a go or no-go status. On the left side of the SATS is a Fresnel lens system. Red lights signal all high obstructions around the landing area.

Should the tailhook of the landing aircraft miss the arresting wire, a red light at the terminal end of the runway signals the pilot that the wire was missed and that he should take off for another attempt. To develop this system, standard shipboard lights were used. Similar lights are now being modified for the SATS program.

The facility is also developing a floodlight system to enable a pilot to see the runway matting. Such a floodlight also facilitates the work of ground personnel.

VR-24 Moves to Naples

Detachment Gets New Home, Too

In August, VR-24 moved to a new home port at NAF NAPLES, Italy, former home of VR-24 Detachment. The detachment replaced VR-21 at Rota, Spain.

At the same time, Commander G. J. Jogan was relieved as C.O. of the squadron, but reported as OinC of the Rota detachment.

Captain William J. Scott is the new C.O. of the parent squadron which provides carrier-on-board delivery service to the Sixth Fleet. C-130 *Hercules* and C-118 transport aircraft are based at Rota.

VTOL Research Organized

Project Set up at Cornell Lab

A research effort to establish improved handling qualities specifications for VTOL aircraft is being organized at Cornell Aeronautical Laboratory (CAL), Buffalo, N. Y., under an $830,000 contract with the Air Force Flight Dynamics Laboratory, Systems Engineering Group, Wright-Patterson AFB.

During the first phase of the three-year program, CAL engineers will review and investigate all VTOL handling qualities data and attempt to devise a general format for the specifications. Aircraft such as the XC-142, P.1127, X-22A, XV-5, X-14, BALZAC, VJ-101 and the XV-4 will be included in the review.

Acceptance of the completed requirements and efforts directed at their adoption as an official military specification will be the responsibility of the Air Force Flight Dynamics Laboratory.

PERSONAL GLIMPSES

Editor's Corner

Roads and Crossroads. After a station-wide contest, NS ROOSEVELT ROADS, Puerto Rico, selected as its official slogan the phrase, "Crossroads of the Caribbean."

PILOTS vs. CONTROLLERS. Hugh Riddle of the Chicago O'Hare Tower, wrote the following in the *Journal of the ATC* for May:

"It is often said that the controllers and pilots will forever be at odds with each other. This feeling is probably due to the differences of opinion that are exchanged in the day to day exercise of their duties. For the long pull, however, the areas of agreement should exceed the areas of disagreement. Controllers and pilots will be worried about many of the same things. No one else in the aviation industry carries anywhere near the unmonitored responsibility of either the pilot or controller.

"In IFR weather the 'honor system' operates without a double-check of any sort. The pilot assumes the controller has not put him less than 1,000 feet or three miles from other traffic. The controller has to assume that the pilot is complying with any clearance given, unless otherwise stated. Nowhere else in aviation are the consequences so great for even a small human error. The base area of understanding is thereby established. Each respects the other's responsibility."

What's Up, Doc? A recent issue of the NAS MOFFETT FIELD, Calif., base newspaper carried the following item as a "news flash," which it said came from an "expert informed source": "The Moffett *News* has heard a report . . . that the large numbers of rabbits, which formerly inhabited [an] area at the end of Moffett's runway, have deserted the field for some happier hunting ground. The cause of the exodus was not immediately known."

FUTURE OF FLYING (circa 1911). That same Moffett *News* edition carried another article, which it credited to John A. Vorburger, SA, VR-8. This one presented an interesting forecast of the potential commercial value of aircraft, as it might have been considered in 1911.

Among other predictions, the article said flatly: "It is unlikely that aeroplanes carrying many passengers will be built in our time." It also prophesied that, for future commercial use, the dirigible held far more promise than the airplane.

"As a vehicle of sport," the article concluded, "the flying machine is destined to become what the bicycle was a decade ago."

A Light Snack. If the commissarymen aboard your ship or station seem to have trouble cooking up any new, exotic dishes, this recipe may be just what they need. It was gleaned from the *White Falcon*, the newspaper published for personnel of the Naval Station at Keflavik, Iceland.

Elephant Soup (Chunk Style)

Needed: One medium-sized elephant (imported). Salt and pepper.

Cut elephant into bite-sized pieces. Salt and pepper to taste. Brown in extra-large skillet. Pour juicy gravy over meat.

Simmer for four weeks at 650 degrees. Will serve 3,800 persons. (If more are expected, add one or two rabbits—but go easy as some folks object to hare in their soup.)

KEEP YOUR YARD CLEAN. Rear Admiral J. H. McQuilkin, Commander of the San Francisco Bay Naval Shipyard, received a note recently from one of his employees:

"I am confronted with waysides bestrewn with scraps of paper, empty cans, pop bottles (whole and broken) and other interesting impedimenta. Since I have been about the shipyard for several years, I have acquired somewhat of a proprietary affection for its stark and formerly uncluttered vistas of bay mud, approaching fog, etc., and have therefore fallen to picking up bits and pieces (with special attention to broken glass) and depositing same in various refuse cans. The occupation is a happy one and work is progressing as well as can be expected for so limited an effort, but sometimes I wonder if I might get a little help from the Navy."

"A bit lyrical perhaps," Rear Admiral McQuilkin commented, "but I think it makes the point."

Hearing by the Earful. In a Flight Surgeon's report for the VF-126 publication, *Fighting Seahawks' Newsletter*, Lt. H. F. Davis made some pointed comments about the possibility of hearing loss to personnel who work on the flight line. Among them:

1. Continued exposure, during an eight-hour workday, to noise that exceeds 85 decibels will eventually cause hearing loss.
2. Eighty-five decibels is enough noise to force you to shout at a person three feet away (which must, of course, add to the decibels).
3. It may take several months for an impairment to result from exposure to too much noise, but if the decibel level goes beyond 85 the time it takes damage to occur is shortened considerably.
4. A jet engine turning up creates more than 100 decibels of noise over a quarter-mile area.
5. As the delicate mechanism that enables a person to hear begins to succumb to the noise level, high-pitched sounds (such as violin music) start to fade out; hearing failure, if not corrected, can then extend into the low-frequency range (conversation).

"What can you do to protect your hi-fi investment?" the doctor asked. "First, be aware of the noise hazard. Second, obtain properly fitted ear protection devices and wear them in the presence of noise. Third, have your hearing checked at least yearly."

Lt. Davis made the point that, by wearing earplugs or a "Mickey Mouse" head set or a combination of the two, flight line personnel actually can hear what they should hear better. The protective devices, he said, eliminate unwanted noise, and the result is like filtering static out of radio reception: You get to hear what you want to hear.

"When people tell me they're getting used to the noise, it just means to me that they're going deaf," the Flight Surgeon concluded. "Take care of your ears now so you won't spend all of your G.I. bill to learn lip reading."

LETTERS

Seaplane Information Wanted

SIRS: I am in the process of collecting information for the purpose of writing a history of seaplane aviation. I know there are many seaplane sailors in the Fleet, many of them veterans of the PBY and JRM. I would greatly appreciate any material any reader could send me, such as facts and figures concerning altitude, speed, endurance or distance records set in seaplanes; true anecdotes concerning seaplane operations, especially those which are humorous or unusual; sea stories; or tales of seaplanes being utilized in unorthodox ways in either peace or war.

I would be very grateful for any material at all concerning the R3Y, the P6M or the *Sea Dart*.

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The Blue Angels' Numbers

SIRS: The article, entitled, "Twenty Years with the Blue Angels," in the June 1966 issue of *Naval Aviation News*, with its accompanying photographs in particular, evokes a question. When, throughout the Navy, odd numbers are to starboard and even numbers to port, why do the *Blue Angels'* formation indicate the contrary?

NELSON P. JACKSON, LCDR.
Executive Officer

USS *Ernest G. Small* (DDR-838)

¶ Lt. Dave Rottgering, *Blue Angels'* Public Affairs Officer, answers the query as follows:

"Although, as you say, in the surface Navy the odd numbers are usually stationed to starboard and the even numbers to port, the same is not true for aviation as you know it in the Fleet or for the U.S. Navy Flight Demonstration Team.

"The reason is that the right wingman is regarded as the skipper's wingman and has the responsibility to 'set' all echelon formations; therefore, he is assigned the billet as the number two aircraft. The second section leader is always the number three aircraft and, when joined with the lead aircraft, ties his section on the left wing. His wingman, the number four aircraft, will always remain on his wing regardless of whether number three is flying loose division (separate sections) or a tight parade position."

NAVAL AVIATION FILMS

Among the latest motion picture films released by the Film Distribution Department, U.S. Naval Photographic Center, the following should prove of particular interest to personnel in Naval Aviation:

MN-10124A (unclassified) *The C-13 Catapult*. Procedures used by members of the catapult crew during launching cycle. 14 minutes.

MN-10172 (unclassified) *Cross Servicing of Aircraft*. Shows that 70 percent of standard Navy ground support equipment can service *Buccaneer* aircraft without modification; special adapter which allows 100 percent servicing, and cross servicing kits which allow 100 percent servicing of all NATO aircraft, being made up. 14 minutes.

MN-10333 (unclassified) *Aircraft Crash Fire Incident Simulation Tests of the Light Water Twinned Agent System*. Introduction of the twinned agent (light water and purple-K power) fire extinguishers into the aircraft firefighting and rescue service. 18 minutes.

MA-10336 (unclassified) *Missilry on the March*. The continuing technology progress in missilry at the White Sands Missile Range. 12 minutes.

The film MV-9604, *Spatial Disorientation in Flight*, has been replaced by MV-9604A2, *Pilot Vertigo—Sensory Illusions in Flight*.

Instructions for obtaining prints of newly released films are contained in OpNav Instruction 1551.1D.

Speed on TransPac Flight

Record for the KC-130 Hercules

In August, the Marines announced that in July a KC-130 *Hercules* attached to Marine Aerial Refueler/Transport Squadron 352, had flown non-stop from Atsugi, Japan, to MCAS EL TORO, Calif., in a record time for the KC-130 of 15.9 hours. The old record was 16.3 hours. Pilot for the latest record-making flight was Maj. J. E. Fithian.

On its 4,800-mile flight, via the Great Circle Route, the turboprop craft flew in a jet stream of 120 knots at an altitude of 31,000 feet. Plans had been made to go for the record if there were no cargo to bring back on the return flight from the Far East.

The aircraft carried one tank, normally used for inflight refueling, to carry extra fuel for the flight. When the *Hercules* arrived at El Toro, it still had fuel for two and a half hours.

Modified Engine Tested

Dash-Ten Will Power the F-4J

On July 26, the Service Test Division of NATC PATUXENT RIVER, Md., conducted the first flight of a 300-hour accelerated service trial of the J79-GE-10. A modified F-4B is being used for the test.

The new engines are programmed for installation in the F-4J, the newest in the Navy's F-4 series. Design changes in the engine will provide increased thrust and lower specific fuel consumption for the F-4J. Completion date for the test is late this month.

VA-55 Wins Safety Award

For Fourth Quarter of 1965

Vice Admiral Thomas F. Connolly, Commander Naval Air Force, Pacific Fleet, recently presented the Quarterly Aviation Safety Award to VA-55 for commendable achievement in the field of aviation safety in the fourth quarter of 1965.

The squadron compiled a total of 1,108.5 accident-free flight hours during the fourth quarter of 1965.

The squadron, home-ported at NAS LEMOORE, is commanded by Commander R. E. Holt.

FOUR TRAINING *versions of the Navy's Phoenix air-to-air missile, which will arm the Navy F-111B air superiority fighter, are mounted on this General Dynamics/U. S. Air Force F-111A which is being used for weapons separation tests at Eglin AFB, Florida. Two inboard pylons under each wing swivel to keep weapons parallel to the airplane airstream as its wings are swept. F-111's have flown at supersonic speeds close to sea level and at more than twice the speed of sound (Mach 2.3) at high altitudes. The wing-sweep is variable from 16° to 72.5° to provide this wide performance spectrum.*

SQUADRON INSIGNIA

Home-based at NAS North Island where it was originally commissioned January 20, 1951, Patrol Squadron 40, led by Commander H. E. Longino, is currently deployed to the Western Pacific. The squadron flies the Martin SP-5B Marlin, the only operational seaplane 'sub killer.' VP-40 was the first of the seaplane squadrons to return to extended seaplane operational tasks since the end of World War II.

NAVAL AVIATION
NEWS

BOMBS AND MAIL, ZIP OR BLOOP?

Sharp airplane operators are on target every time out, whether it's training or the real thing. Sharp aviation administrators will be on target with all official correspondence, too. Next year all government mail that is not ZIP coded properly will just go 'bloop'; get the ZIP habit NOW.