

NAVAL AVIATION

NEWS



47th Year of Publication

AUGUST 1966

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SAILORS FROM OUTER SPACE

Looking like nonchalant weekend sailors in a dinghy, Gemini 9 astronauts Cernan and Stafford were caught in this unusual shot just before their recovery in mid-Atlantic June 6. After 71 hours aloft and a space walk by Cdr. Cernan, Gemini 9 was brought down within three miles of USS Wasp with a TV audience watching the recovery for the first time via satellite-relayed transmissions. The most accurate of all American space shot recoveries, it brought the U.S. a step nearer the moon (see p. 15).

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- A Real Shoot-'em-up 19** *A new camera mount enables photographers to take motion pictures from helicopters; the story is backed up by still pictures on pp. 20-21 that show a movie-maker in action.*
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COVERS

The front cover (shot by Larry L. Wilson, PH1) celebrates USS Enterprise's arrival at her new home base, Alameda, after her first combat tour. . . . On the back cover is a picture of Lt. Ronald F. Bell, USN, as he is being plucked from Tonkin Gulf after ejection from his disabled F-8 Crusader. The photograph was taken by Navy Journalist C. R. Eggleston.

AUGUST 1966



NAVAL AVIATION NEWS



VICE ADMIRAL A. S. Heyward, Jr., Chief of Naval Air Training, NAS Pensacola, accepts from Mr. David T. Crockett, Jr. (second from left), Director of Marketing, Lockheed-Georgia, a scale model of the KC-130 Hercules for the Naval Aviation Museum. Lynn D. Pitchford and John J. Schlotman, Lockheed representatives from Eglin Air Force Base and Marietta, respectively, look on. The huge Hercules transport has been operational since 1960.

Mk. 46 Torpedo Operational An Airborne Weapon for ASW

The Mk. 46 torpedo, an improved underwater weapon for the Navy, is now operational with air units of the Navy's ASW force. It will be aboard surface ships in 1967. The weapon was developed to supplement and eventually replace the Mk. 44 torpedo.

Designed to meet the threat of high-speed, deep-diving nuclear submarines, the Mk. 46 torpedo goes into a circular search pattern once it is dropped in the target area until it "sees" its target with the aid of an acoustic seeker system. Once it locks on, the torpedo pursues the sub until it is destroyed.

The Mk. 46 may be launched from fixed-wing aircraft, helicopters and surface ships. Surface ships

can launch the Mk. 46 torpedo by the *Asroc* missile system which provides a long-range attack capability as well as over the side from torpedo tubes. The torpedo's speed and maneuverability are far superior to any submarine. It is expected to be the primary weapon for air and surface ASW forces.

Aerojet General Corporation of Azusa, Calif., was prime contractor for the Mk. 46 program, with the Naval Ordnance Test Station, Pasadena, designated as the technical director for NASC.

More MOL Pilots Picked Train for 30-day Space Flights

The Air Force has picked five more pilots for assignment to the Manned Orbiting Laboratory (MOL) program. This brings to 13

the number of men who will be in training for the 30-day space flights.

The latest group of MOL trainees is composed of three Air Force officers, one Navy and one Marine. All five are graduates of the USAF's Aerospace Research Pilot School, Edwards AFB, Calif.

The Navy selection is Lt. R. L. Grippen; the Marine representative is Capt. R. F. Overmyer. Captain Overmyer is the first Marine Corps pilot to become an MOL pilot. He joined nine Air Force and three Navy pilots chosen to conduct experiments in the near-Earth orbits as part of the defense portion of the space program.

The program calls for two-man crews to be launched into space inside a modified *Gemini* spacecraft by a *Titan III*C booster. Once in orbit, they will enter the laboratory attached to the spacecraft and work without space suits for 30 days.

Then they will re-enter the *Gemini* spacecraft, detach it from the laboratory and return to Earth. The Laboratory will burn up upon reentering the Earth's atmosphere.



CONDOR, a new air-to-surface missile being developed by North American Aviation for the Navy, is shown in an artist's drawing. The missile relies on television for guidance and is adaptable to armament systems of current and future aircraft.

Floodlighting Carrier Decks Installations Made on 10 Ships

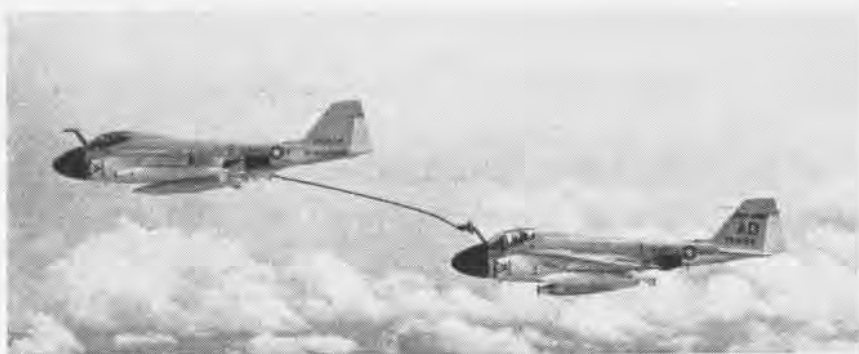
Overhead floodlighting on the flight decks of ten aircraft carriers has been installed in an effort to reduce night carrier landing accidents and improve the working conditions of flight deck crews.

Four of the ten carriers were operating in the Seventh Fleet in the South China Sea: *Hancock*, *Ranger*, *Kitty Hawk* and *Intrepid*. The other six carriers are *Saratoga*, *Bon Homme Richard*, *Coral Sea*, *Constellation*, *Roosevelt* and *Oriskany*.

Full assessment of the value of the white floodlights under all Fleet operating conditions is just beginning. The overhead floodlighting illuminates the carrier in natural colors and assists the pilot.

Lighting the entire flight deck also improves conditions for the flight deck crews, allowing them to work with greater safety and speed.

In 1964, the Navy tested a makeshift version of the lights aboard the *USS Saratoga*. During the tests it was disclosed that considerable latitude existed in the amount of lighting that could be employed without adversely affecting a pilot's night vision. The Navy then con-



A-6 TANKER demonstrator, a version of the operational A-6 Intruder stripped of its electronic equipment, successfully completed its first flight with Grumman's Ralph Dannell in the pilot's seat. Should the A-6 tanker go into production, it would feature 320-gallons per minute fuel transfer, air-to-air Tacan, visual attack capability and possibly an internal set of guns for suppressing ground activity. The tanker would be capable of transferring 21,500 pounds of fuel immediately after launch to a receiver aircraft or it is able to deliver 16,000 pounds of fuel 300 nautical miles from the aircraft carrier.

tracted for the lights and is installing them on carriers (both CVA and CVS types) during their regular yard periods.

1,899 New Pilots in FY 66 Training Command Exceeds Quota

Rear Admiral R. A. Macpherson, Chief of Naval Air Training, recently commended the pilots and crewmen of the Advanced Train-

ing Command for surpassing the Fiscal Year 1966 for new Naval Aviators.

A total of 1,332 Navy, Marine Corps and Coast Guard pilots were trained by the command in the fiscal year. Of this total, 592 jet pilots and 740 multi-engine pilots received their wings at Corpus Christi, Kingsville and Chase Field, Texas. Helicopter pilots, trained at Pensacola, brought the total to 1,899.

The Corpus Christi-based, multi-engine squadrons flew over 106,000 accident-free hours and made over 7,000 carrier landings.

Admiral Macpherson noted that FY 66 was the first fatality-free year for multi-engine squadrons in the training command's history.

10,000th Safe Flight Hour VMA-223 Hits Score in Vietnam

When Lieutenant Colonel Robert B. Sinclair returned safely to the expeditionary airfield at Chu Lai, Vietnam, after a strike mission, he discovered he'd flown the 10,000th accident-free flight hour for Marine Attack Squadron 223.

The feat was not a new accomplishment for the squadron. Last year, VMA-223 was awarded the Chief of Naval Operations Safety Award for an accident-free record.

Nearly 4,000 of the A-4E outfit's accident-free hours this year have been flown from an expeditionary airfield under combat conditions.



AT O'HARE INTERNATIONAL Airport, Rear Admiral Henry L. Miller presents a plaque honoring Lt. Edward H. (Butch) O'Hare, Navy Medal of Honor winner in World War II, to Chicago Mayor Richard J. Daley. The plaque was prepared by the crew of the destroyer named for the famous fighter pilot. In addition to the emblem of the ship, the plaque bears pictures of O'Hare, *USS O'Hare (DD-889)* and a composite of two of the ship's modern antisubmarine weapons, *DASH* and *ASROC*. The plaque will be prominently displayed at the Chicago O'Hare airport alongside the original dedication plaque.



GRAMPAW PETTIBONE

Ready and Professional

An instructor from an advanced Navy training base landed at a midwest Air Force base at the end of a routine training flight. Shortly after his arrival, while he was waiting for his aircraft to be refueled, an Air Force F-106 called in with an emergency. With darkness falling rapidly, the Air Force pilot found himself with a complete loss of his altimeter and airspeed indicator. Additionally, a hydraulic failure was manifesting itself.

Becoming aware of the F-106 pilot's plight, the transient instructor immediately manned his partially fueled bird, launched, and was vectored to rendezvous and assist the F-106.

Navy flew wing on the Air Force and herded the wandering F-106 around to the final approach. Keeping the F-106 pilot advised of his altitude and airspeed, the obliging professional brought his charge in for a safe landing.



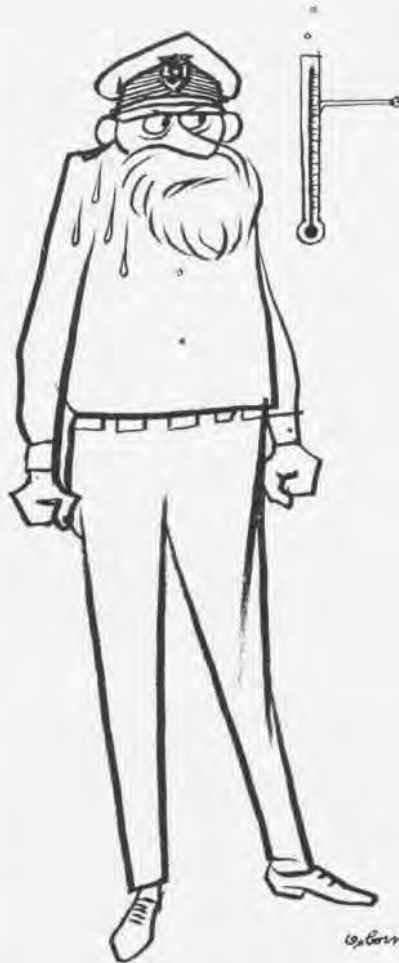
Grampaw Pettibone says:

Well done, lad. Your professional response made a happy ending to what might otherwise have been a spoiled day.

Spent Spad

At 1900, a group of *Spad* drivers began their brief for a night operational mission which included strafing, rocketry and bombing. Following the brief, the flight proceeded to the flight line. Pre-flight, engine run-up, take-off, rendezvous and flight to the target area were all routine and normal. They entered the pattern over the target and each pilot made one dummy and two live strafing runs.

During pullout from his second live run, this ace of *Spads* noted fumes in the cockpit and smoke around the engine. He checked the gas, mixture and fuel pump and switched to 100% oxygen. In a left turn downwind, he noticed

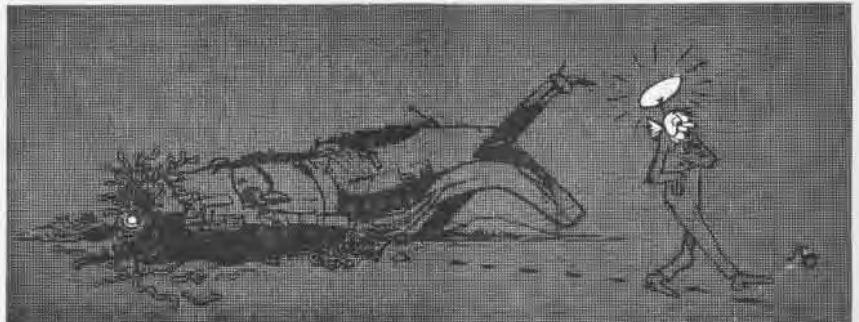


several backfires as afterfires from the engine with flames coming out of the starboard stacks. The driver of the sick *Spad* leveled the wings

and called the spotter plane to inform him of the situation. At this time, he was at approximately 7,500-8,000 feet altitude, indicating between 130-140 knots, and decided to shut down the engine by turning the gas, mixture and mags off. Another aircraft from the flight passed to starboard and notified the pilot that he had flames coming out of the right stack extending half way back on the wing.

At 6,000 feet in an attempt to gain altitude he tried a restart, but the engine continued backfiring and failed to develop power. At this point, an anxious wingman suggested bailing out. As he turned off the gas and proceeded with pre-bail out procedures, the distressed pilot noticed the ground coming up very fast and quickly attempted unsuccessfully to lower the flaps. Indicating 100 knots, the *Spad* impacted the ground.

Both wings snapped off on impact and the canopy tore loose as the fuselage skidded to a stop in an inverted position. The pilot's hard hat and oxygen mask were removed during the skid. After coming to a stop, he noticed an immediate pain in his right arm and left side of his face. Although his left arm was pinned beneath him, this youngster was able (with some difficulty) to unstrap with his right arm and crawl clear of the cockpit which was partially filled with sand. Strong odors of gasoline were present, but any existent fire had extinguished itself im-



mediately following the impact.

The fortunate flyer then walked away from the wreckage and attempted to ignite a day/night flare, but was unable to do so because of his injured right arm. Attempts to fire a pencil flare were also futile, however, he did manage to load his .38 pistol and fired five rounds of tracers.

An orbiting plane dropped a flare and a vehicle from the nearby target control tower arrived at the scene 15 minutes after the crash. The rescue helicopter arrived shortly thereafter and delivered the pilot to an NAAS.

 **Grampaw Pettibone says:**

Holy mackerel! This wasn't a close shave, it was a narrow escape. An injured arm and red face is a pretty cheap price to pay for a stunt like this. Our young intrepid birdman could've bought the farm pretty easy.

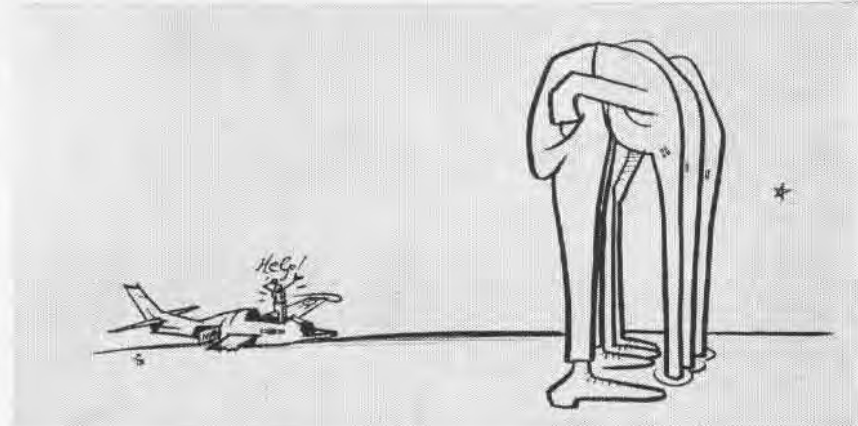
When that single engine turns to worms at night in the hills, there's only one smart thing to do and that's to go for the nylon let-down, providin' you've got enough altitude to make it worthwhile.

That old Spud is a mighty trustworthy bird and nobody hates to see a BuNo scratched from the list worse than your gray-haired friend, but to ride one in at night when you know there's nothin' but hills and rocks down there, just don't make sense. Bet this gent is glad he'd been thinkin' pure thoughts for the past few days, but it's a sure bet he plays it different if somethin' like this happens again.

Alpha to Omega

It was fam night at the local training field and a right good crowd was there. Ensign Alpha became airborne in his T-2A at 1845, all primed to perform his second night familiarization flight. He flew around the assigned course without incident and returned to practice night landings.

Initial entry into the pattern for runway 36L was uneventful and he added one touch-and-go landing to his score. After turning downwind, Alpha found himself behind Bravo executing very wide and deep approaches. Being extremely cautious, stalwart Alpha flew extra wide to maintain a proper interval in the pattern. As a result of this revolting development, he elected



to take three successive wave-offs rather than make less than satisfactory landings.

On the fourth approach, opportunity smiled and once again he effected a touch-and-go landing. Meanwhile, another aircraft (Charlie) entered the pattern just ahead of Alpha and behind Bravo. (Charlie had to fly a wide and deep approach to maintain a proper interval behind Bravo.) Bravo called at the 180 and entered final. Charlie, completely engrossed in his approach, neglected to call his position turning off the 180.

Alpha arrived and made his call, turning off the 180. Sufficiently jarred by this call, Charlie made his 180 position report although he was actually approaching a very deep 90 at the time. Alpha saw an aircraft land, which was Bravo. Hearing Charlie's late report off the 180, Alpha reasonably believed Charlie to be behind him and therefore concentrated on his interval with Bravo. (Charlie was wide to his starboard.)

The runway duty officer noted two aircraft close together past the 180, but failed to take any corrective action. As Alpha lined up in the groove, Charlie was about 50 feet above the runway and subsequently touched down immediately in front of Alpha, simultaneously adding power to take off. Caught in the jet wash, Alpha's speed pitched violently and drifted left.

Attempting to salvage his perilous plight, Alpha applied 100% power with intentions of waving off to the left. The port tip tank, however, contacted the runway approximately 10 feet inboard and 1,000 feet past the threshold. The

tip tank slid into the arresting gear chain and caused the *Buckeye* to roll to the right and pitch nose down. The nose gear was sheared off by the chain allowing the nose to contact the ground. Next the starboard wing came down and the starboard main mount struck the earth 10 feet from the edge of the runway. The gear sheared and the starboard wing buckled while en route to the final resting place 237 feet from the initial point of contact on the runway. Alpha, none the worse for wear, stepped over the side while the engine shut down of its own accord.

 **Grampaw Pettibone says:**

Sufferin' catfish! This was sure no time for the supervisory types to bury their head in the sand, but it's pretty plain to see that tower personnel and the Runway Duty Officer thought they had better things to do. A youngster on his second night hop rates some help and supervision, but all hands concerned let him down.

Preventable mishaps like this one are needlessly sacrificing lives, dollars and aircraft that we can ill afford. Any one person in a responsible position that night could've saved Uncle \$860,000 and a training plane that's in mighty short supply. Remember, there's no vision like *super vision*.

Quaker Quote

It's been said before and an NASC engineer for ejection seat systems says it should be said again. The famous saying of "olde Quaker jet pilots" runs thus:

"Have faith in thy seat, brethren, and delay not its timely use lest ye join those who didst hesitate too long."

FIVE DECADES OF AIRBORNE SAMARITANS



COAST GUARD OBSERVER KEEPS WATCH DURING ICE PATROL IN SKYMASTER

THIS MONTH U.S. Coast Guard Aviation celebrates its 50th Anniversary. On August 29, 1916, the Treasury Department was authorized to establish ten Coast Guard air stations along the coasts of the United States and on the Great Lakes. In five decades the Airborne Samaritans saved 8,000 lives at sea.

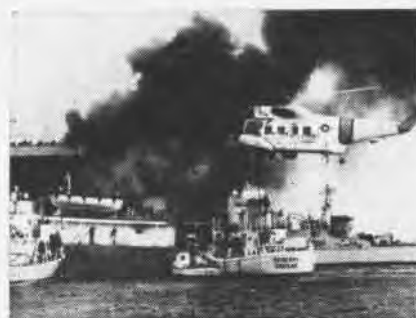
Admiral Willard J. Smith, USCG, who became Commandant of the Coast Guard June 1, is the first Coast Guard aviator to assume the position. Captain Chester A. Richmond, USCG, is the Chief of the Aviation Units Division Office of Coast Guard Operations.

Today with approximately 500 aviators, the Coast Guard maintains air stations located at Salem, Mass.; Brooklyn, N.Y.; Elizabeth City, N.C.; Opa Locka and St. Petersburg, Fla.; Biloxi, Miss.; Traverse City and Detroit, Mich.; San Diego and San Francisco, Calif.; Astoria,

Ore.; Port Angeles, Wash.; Sangley Point, R.P.; Bermuda; Naples, Italy. In addition, Coast Guard aircraft fly from bases at Barber's Point, Hawaii; San Juan, Puerto Rico; Kodiak and Anette, Alaska; Los Angeles, Calif.; Quonset Point, R. I.; Washington, D. C.; Savannah, Ga.; Argentia, Nfld.; Corpus Christi and Houston, Texas; New Orleans, La.

In general, Coast Guard aviators receive the same training as their Navy and Marine counterparts. This year the Coast Guard has inaugurated an aviation cadet program whereby enlisted men are trained by the Navy and commissioned upon completing flight training. The first ten, trained at Pensacola and Corpus Christi, recently were graduated.

The Navy has been training Coast Guard aviators since April 1916 when 2nd Lt. Charles E. Sugden (Naval Aviator 43) and



COAST GUARD helicopter prepares to dump foam on decks of a blazing freighter.



HOVERING OVER a burning vessel off the coast, helicopter waits for possible rescue.



ELEVEN PEOPLE and a dog were rescued after pleasure boat broke up during a storm.



BOAT HULL on helicopter allows a practice water pickup of an airman (foreground).

3rd Lt. Elmer F. Stone (Naval Aviator 38) reported to the newly-established Naval Aeronautical Training Detachment at Pensacola, Fla. In that same year in the legislation that established the air stations, Congress appropriated funds for the establishment of an Aerial Coast Patrol to operate as an auxiliary of the Coast Guard. When plans were presented for the establishment of a separate Coast Guard aviation school, Congress refused funds, so the Navy continued to train Coast Guard pilots at Pensacola. When WW I broke out, Coast Guard aviation consisted of 18 pilots, an engineer-

fly across the Atlantic via the Azores. Lt. Stone was the copilot of the only one of the three aircraft to succeed, the NC-4.

In 1920, with six HS-2L flying boats on loan from the Navy, the first Coast Guard air station was established at Morehead City, N.C. After some 15 months of operation it was closed and the planes were returned to the Navy.

There was no substantial Coast Guard aviation activity until early in 1925. The Coast Guard then asked the Navy to lend an aircraft to assist in intercepting "rumrunners." The Navy made a UC-1 seaplane available and it was based

craft and equipment, and Coast Guard aviation was on its way.

Up to WW II, the Coast Guard was active in anti-smuggling activities. As more appropriations were granted, Coast Guard aviation expanded. By 1940, the Coast Guard was operating 50 airplanes.

DURING WW II the Coast Guard operated nine air stations: Salem, Mass.; Brooklyn, N.Y.; Elizabeth City, N. C.; Miami and St. Petersburg, Fla.; Biloxi, Miss.; San Diego and San Francisco, Calif.; and Port Angeles, Wash. There was a detachment at Traverse City, Mich., for patrol of



OS2U-3 KINGFISHERS FLEW CONVOY COVER IN WW II BACKBONE OF SAR EFFORT IS THE HU-16 AMPHIBIAN

ing officer and an office sign that read "Inspector of Aviation."

Throughout WW I, Coast Guard aviators and surface forces served with the Navy. For example, Lt. Sugden became the Commanding Officer of NAS ILE TUDY, France, and was decorated by the French Government with the Award of Chevalier of the Legion of Honor. Another, 2nd Lt. P. B. Eaton, was Commanding Officer of NAS CHATHAM, Mass.

When the war was over, the entire Coast Guard returned to the peacetime jurisdiction of the Treasury Department and its aviation units almost slipped into oblivion, but not quite.

In 1919, Coast Guard's Lt. Stone was the only non-Navy crewman when three Navy flying boats, NC-1, NC-3 and NC-4, attempted to

for a time at the Naval Reserve Air Station, Squantum, Mass. Later it was moved to Ten Pound Island, Gloucester Harbor, Mass. From there, daily flights were conducted; illegal transporting of liquor in that area declined sharply.

These patrol flights were used to good advantage. Coast Guard aviation students were trained and experiments conducted in radio communications. One outgrowth of these experiments was the Coast Guard development of the first loop-type radio direction finder.

The effectiveness of the one-plane operation impressed Congress which thereupon appropriated funds for the purchase of five aircraft, Coast Guard's first assigned planes.

In 1930, Congress appropriated more money for additional air-

the Great Lakes, and a small parachute group in southeastern Alaska. Patrol Bombing Squadron Six, also a Coast Guard unit, was attached to the Naval Greenland Fleet Air Group.

In 1939 with the beginning of the war in Europe, the U.S. Government organized a neutrality patrol and the Greenland forces were inaugurated. Coast Guard personnel, vessels and aircraft participated actively. Then, in April 1941, with the signing of an agreement with Denmark for the protection of Greenland, Coast Guard aviation responsibilities were increased. Cutter-based planes took part in widespread antisubmarine and coastal patrol activities in enforcing neutrality on the high seas.

Seven months later, on November 1, 1941, President Franklin D.



ICE RECONNAISSANCE helicopter returns to the stern of the Coast Guard icebreaker *Westwind* with a report on ice conditions as the ship leaves Goose Bay, Labrador.



COAST GUARD uses this Fairchild twin-engine C-123 for logistical support missions.



HELICOPTER HANGAR on *Northwind's* stern protects men and machines in Arctic.

Roosevelt issued an order placing the Coast Guard under the operational control of the Navy. Routine duties in this country were subordinated to national defense.

In the summer of 1943, the Coast Guard was directed to organize an air patrol squadron to provide coverage for convoys, carry out antisubmarine patrols, deliver mail, undertake rescue missions and survey ice conditions.

The Greenland Patrol and Patrol Bombing Squadron Six, the only naval squadron manned entirely by Coast Guard personnel, lived with poor weather and difficult terrain. Fjords and harbors were closed by ice packs during the winters, raging crosswinds prevailed, and that part of the land that wasn't mountainous was an ice cap.

The squadron's main base at Narsarsuaq had a single concrete runway down a sheltered fjord. An incline to the east permitted landing uphill and taking off downhill, regardless of the wind. During a 15-month period that ended in November 1944, the squadron flew well over 6,000 hours and almost 650,000 miles.

Perhaps the most daring rescue mission was accomplished by Lt.

John A. Pritchard, Jr., who with his radioman, Benjamin A. Bottoms, RMI, lost his life attempting to save the crew of an American *Flying Fortress* that was stranded about 40 miles from Comanche Bay in November 1942. Both men received the Distinguished Flying Cross posthumously for the rescue.

Pritchard took off from the cutter *Northland* in a Grumman amphibian for a point off the Denmark Strait between Iceland and the southeast coast of Greenland. Despite signals from the downed crew not to land, he retracted the wheels and set the plane down on a long down-slope covered with heavy ice and snow. He returned to the ship with two of the three survivors. Pritchard never came back from the return trip to pick up the last man.

In December 1942, the Coast Guard took part in establishing the first U.S. air-sea rescue unit at San Diego.

When independent rescue activities on the part of the Army, Navy, Marine Corps and Coast Guard began to show signs of duplication and misdirected effort, the Coast Guard suggested that a single

agency should be in charge of the effort. To this the Secretary of the Navy agreed and, in March 1944, established the Air Sea Rescue Agency, headed by the Commandant of the Coast Guard.

During WW II, the Coast Guard operated Navy aircraft, including Grumman JF, J4F and JRF amphibians; Consolidated PBV flying boats and amphibians; Consolidated PB2V and Martin PBM flying boats; Douglas R4D *Skytram* and R5D *Skymaster* transports; Vought OS2U scout observation aircraft and others.

From Pearl Harbor until the end of WW II, Coast Guard aircraft delivered 61 bombing attacks on enemy submarines. Ens H. C. White of USCG Squadron 212 is credited with sinking the German U-boat U-166 in the Gulf of Mexico in August 1942. Also during that period, Coast Guard airmen located some 1,000 survivors and took part in the rescue of 95 of these.

TO THE COAST GUARD should go the credit for its pioneering development of the helicopter which today is so versatile in its many military and civil applications. The Coast Guard was the

first to seize upon the possibilities of using the helicopter to save lives, deliver supplies, make observations and provide liaison.

In November 1943, the Coast Guard Air Station at Floyd Bennett Field was designated a helicopter training base. Shortly after this, the British Admiralty asked the Coast Guard to train a number of helicopter pilots and me-



COAST GUARD interest in the helicopter in its earliest days foresaw many new uses.

chanics for the British service. More than 100 pilots and 150 mechanics were trained.

A notable rescue was made when a Coast Guard helicopter was dismantled, flown to Labrador, re-assembled, and used to rescue 11 Canadian airmen who had been marooned for 13 days in a frozen wilderness. The helicopter made seven trips from Goose Bay to pick up the survivors.

When WW II ended, the Coast Guard was again returned to the Treasury Department and the wartime Air-Sea Rescue Agency was abandoned. However, the need for an air-sea rescue organization remained.

In 1956, the Secretaries of Commerce, Treasury and Defense, along with the chairmen of the Civil Aeronautics Board and the Federal Communications Commission, signed an agreement for a new air-sea rescue organization, designated the Search and Rescue (SAR) Agency. The Coast Guard was assigned responsibility for over-water SAR operations and the Air Force assumed over-land SAR.

Although the primary duty of Coast Guard aviation is the protection of life and property, it performs a number of collateral duties. Air Coast Guardsmen cooperate with the Treasury Department's alcohol tax unit in spotting illicit stills, assist in the enforcement of customs laws, and take part in the control and inspection of shipping. They assist the Immigration Service in preventing illegal entry of aliens into this country.

Coast Guard aviators often are called upon to intercept and escort aircraft in distress, disseminate severe weather warnings to small surface craft and isolated communities, patrol regattas, and assist in forest-fire control and flood relief. Included in the Coast Guard's

duties are the International Ice Patrol in the North Atlantic and the logistic supply requirements of isolated installations in the Pacific, Alaskan and Atlantic areas.

Located at strategic stations along all of our coastal areas, Coast Guard aviation stands ready and able to carry out emergency rescues, assist in flood evacuations, provide weather warnings, and perform other services deemed necessary in any other types of emergency. Air Coast Guardsmen are ready, if needed, to share the load in the national defense of this country. History has proved, in many lands and often under extreme conditions, that these men are trained and ready, the equipment is efficient; the spirit, willing.



HH-52 LANDS AFTER SEARCHING FLORIDA STRAITS FOR CUBAN REFUGEES

CNO'S PILOT ENDS 24-YEAR CAREER

NAVAL AVIATOR par excellence and Aircraft Commander for three Chiefs of Naval Operations, Commander Robert M. Hurt concluded his distinguished service career and retired on July 1.

When Admiral Arleigh Burke, CNO back in 1955, was casting about for a pilot who was highly experienced in the VC-118 aircraft, Rear Admiral T. B. Williams, formerly Vice Commander of the Military Air Transport Service, recommended Bob Hurt (then LCdr.) as "the finest transport pilot I have ever seen."

Thus Hurt found himself being transferred to VR-1 at Patuxent River, Md., where the VIP-configured VC-118's are based. His performance pleased his high-ranking charges so much he has had the job for the last 11 years of his service.

The pilot began his career in 1942 as a V-5 cadet and received his designation as a Naval Aviator in January 1944.

His first assignment, as a plowed-back instructor at Corpus Christi and Pensacola, was one in which his abilities were put to good use. He rose rapidly to the billet of Chief Flight Instructor in 1947 and, by the end of his tour in 1949, his enthusiastic spirit and perfectionist outlook had earned him not only a 4,000-hour flight time record, but also the telling—if not so affectionate—nickname of "Down Check Hurt."

Lt. Hurt was introduced into the realm of the "heavies" upon reporting to Air Transport Squadron Three which, at the time, was at Patuxent River. Here he became proficient in transport navigation techniques and multi-engine piloting procedures. Before the end of a short 11-month tour, he had already qualified as Aircraft Commander in both the C-47 and C-54.

Soon, because this was the year of the Berlin Airlift (Operation *Vittles*), Lt. Bob Hurt was a highly experienced trans-Atlantic pilot and navigator. To VR-3 fell the lot of ferrying replacement pilots and supplies to Frankfurt, Germany, in support of the airlift. Considering the slower speeds of aircraft in those days and the heavy

By Ens. Paul K. Brace, USNR

demands placed upon them, it's small wonder that Lt. Hurt was able to maintain a flight time average of better than 1,000 hours a year. (He has done almost as well since.)

With his assignment in 1949 to VR-6 at Westover AFB, Mass., Lt. Hurt became a member of the Navy's partnership in the Military Air Transport Service (now Military Airlift Command). Not long after the end of the Berlin Airlift, the pilots of VR-6 were confronted with the job of supplying the newly developed defense bases in Greenland. Operation *Bluejoy*, with Thule as a focal point, presented a massive problem of construction and logistic support.

From the start, the building of that northern outpost of U.S. defense required hundreds of 2,700-mile flights from Westover in possibly the most difficult conditions ever encountered. Besides carrying everything from bulldozers to bathroom fixtures, the VR-6 pilots, and especially Lt. Hurt, became pioneers in the development of polar navigation techniques and cold-weather flying doctrine.

But between flying the long, dangerous routes and adding the C-118 to his list of Aircraft Commander qualifications, Bob Hurt also found time to write a 50-page standard-

ization manual on C-54 operations. Shortly, he succeeded to the position of Chief Pilot in the squadron.

By February 1953, when he was transferred to MATS Headquarters, Andrews AFB, Lt. Hurt had earned a reputation among transport pilots as being one of the best in the business. At Andrews he served on the Standardization Branch of the Chief Pilot's Division, was instructor and Flight Examiner for seven types of multi-engine aircraft and became Assistant Chief Pilot for the Commander and staff of MATS in both C-54 and C-118 models. It was at this point that he became CNO's pilot.

It is not true, as some might imagine, that a pilot for CNO has nothing to do when "the Boss" stays home. In addition to serving Admirals Burke, George Anderson and David L. McDonald, Commander Hurt has been in great demand to fly others. Under Secretaries, Members of Congress, military leaders of our own country and foreign nations have been flown by Commander Hurt.

In VR-1, Commander Hurt has also served as Training Officer, Chief Flight Inspector, and Four-engine Flight Officer. By keeping himself current in C-131 and C-130 transports, he has for several years been NavAirLant's NATOPS evaluator for both types as well as the C-118. It is no mean task to sort out all the records this "pilot's pilot" has amassed.

At last count, Commander Hurt's logbooks revealed a grand total of no less than 21,226 hours, of which at least 18,700 are pilot time. The incalculable mileage represented by these hours was accumulated in the 24 years of Commander Hurt's service to the Navy.

Commander Hurt will continue to fly. He has already signed on as Chief Pilot for the Emerald Shillelagh Chowder and Marching Society at Dulles International Airport, a private air travel association which provides members with world-wide touring service in a DC-7. Before the end of the year, Commander Hurt will again visit many of the foreign cities he saw during his notable Navy career.



COMMANDER ROBERT M. HURT, USN



NAVAL AVIATION'S 3-M SYSTEM ELIMINATES NEED FOR MAINTENANCE MEN TO WORRY ABOUT SUPPLY METHODS

3-M and 3-Level Maintenance

SUPPLY: KEY TO MAINTENANCE SUCCESS

Fourth in a Series

By John D. Burlage, JO1

WHEN THEY were building the Standard Navy Maintenance and Material Management (3-M) System for Naval Aviation, planners were determined to design a program that would dig the gophers out of the aircraft maintenance back yard.

Yep, gophers.

For the uninitiated, a "gopher" is a highly-trained maintenance technician who, in order to simply do his job, must take the time to go fer this, go fer that, go fer parts, fer paper work, fer any of a hundred time-consuming things.

The Navy has always had gophers; it probably will always have them. Even so, 3-M's planners felt that men whose valuable time and training should be used to fix airplanes were poor candidates for the job. They figured that digging up the paper work for repair parts, rooting out replacements and burrowing into supply stocks was an assignment that better suited somebody else in the Navy's complex organization.

Who else? Why, the supply experts, of course.

So 3-M's planners took from aviation maintenance personnel virtually all the requirements of supply—filling out requisitions, cross-checking stock numbers, delivering items, managing parts and dozens of others—and dropped them right on the Supply Department.

It must have been a heck of a blow.

Fortunately, the planners applied some soothing balm in the right area. Their 3-M Manual, the "bible" for proper implementation and utilization of the system, has this to say on the subject:

"The basic intent of the [3-M System] for Aviation is to provide the means for increasing the degree of readiness of weapons systems to the maximum extent possible, and concentrating the effort of maintenance (time, manpower, and materials) only on that which is required.

"The supply organization, particularly at the local level, can do much toward achieving these two ends.

This can be done by instituting procedures offering the ultimate in responsiveness to maintenance material requirements. . . .

"One aspect of these procedures is fundamental: extremely close liaison must be established and maintained between supply and maintenance (on the organizational and intermediate levels) in pursuing the common goal of achieving the maximum degree of weapon system and operational readiness."

That's the idea. If you want to make radical changes to firmly entrenched procedures in a field such as aviation maintenance and its supply habits, you'd best be able to say it will contribute to a better end result.

The meatier portion of these radical changes boils down to this: Under 3-M, a maintenance man working at the organizational (squadron or other operating unit) level places a demand on the supply system for what he needs to repair a "down" aircraft. Once he has registered his requirement, the problem of obtaining whatever component he needs is no longer his.

This new concept is part of 3-M's *Improved Maintenance and Material Control Procedures*, one of three broad areas incorporated into the system. Along with *Planned Maintenance* and *Maintenance Data Collection*, these improved procedures are designed specifically to make the very big job of keeping the Navy's aircraft flying as speedy, economical and successful as possible.

In practice, there is a bit more to the increased supply responsibility called for by 3-M than a simple matter of Joe Doe, aviation mechanic, calling Tom Smith in Supply and announcing, "Tom, I need a new frammis for one of my squadron's F-4's. How about getting it over here?" The Navy's aviation supply operation is simply too big to get that basic.

The best example of the complexity of the aviation supply business comes from the Aviation Supply Office in Philadelphia (NANews, April 1966, p. 12). This "sugar daddy" of aircraft maintenance has an inventory worth more than \$12 billion, manages some 400,000 different items and issues more than \$1 billion worth of aviation stores a year. Figures like that represent a dandy reason why the Supply Department

doesn't just throw its stocks up for grabs. Improved Material Control is, after all, also one of 3-M's finer features.

A person interested in learning a bit more about this new way of aviation maintenance supply procedures may go to any number of sources for information. Two of the best of them, however, are the 3-M Manual and a gentleman named Curtis Fleming.

Supply officers who discover their activities are at the top of the list for transition to 3-M may use both the manual and Fleming as guides—the manual because it tells them the "why" and the "what" of the system, and Fleming because his position as 3-M coordinator for the Naval Supply Systems Command (formerly the Bureau of Supplies and Accounts) requires him to monitor efforts of field teams organized to help facilities make the change to 3-M's procedures.

While the manual lists responsibilities and provides for establishment of new organizations within a given Supply Department, it does not concern itself with the "how" of transition to 3-M. That is a responsibility left to commanders, supply officers and the members of the field teams.

The manual says the responsibilities it dictates are functional in nature. While they must be undertaken by the organizations it designates, it says, "no attempt has been made to indicate the geographic location where the function is to be performed, nor the number of people required to perform the function. These elements will vary between each station and ship."

The new organizations the manual requires must be established when an activity's Supply Department goes to 3-M, but it gives considerable leeway in their location within the supply and maintenance complexes: "It is recognized that geographic and structural differences make each air station and ship distinctive. No attempt has been made . . . to specify a standard physical location for these organizations. However, in the interest of response to maintenance material requirements, each station, group and ship should endeavor to locate its organizations as close as possible to the areas where maintenance is performed."

There is enough versatility in this aspect of the sys-



SUPPLY, MAINTENANCE MEN WORK WELL UNDER 3-M



B. S. BEATTY, AKAN, RYAH-3, USES TEL-AUTOWRITER

tem to enable the supply setup to be "splintered" so it can better support maintenance activities spread over large areas. Taking advantage of such versatility is important if you consider that, under 3-M, top-priority material (coded from one to three) that is held in stock by the local Supply Department must be processed and delivered within an hour after a maintenance unit asks for it. Lower priorities don't give the supply people much room to move either; material grouped in categories from four to eight must reach the requesting activity within two hours, and that labeled from nine to 20 must be where it can be used within 24 hours.

How an activity determines what goes where under 3-M is described by Fleming:

"An initial visit to the station is made by a field team composed of personnel from the Bureau of Naval

enables field team members to call upon experience gained from installations previously transitioned to 3-M in order to make the change as painless as possible. In the supply representative's case, his initial evaluation of station facilities enables him to go to the Supply Officer and list possible alternatives that may be used to implement the system.

"Once the methods are determined, the Supply Officer finds he has a certain number of days to get the job done. He must solve his requirements for additional personnel, which may mean he must ask for a re-allocation of men from other areas to meet the demands 3-M places on him.

"He decides what new equipment he must have—vehicles, communications devices and the like—and, when he's ready to implement the system, he gets off a letter to BUWEPs for necessary resources.



CARRIERS, CVW'S ALSO USE 3-M'S SUPPLY METHODS

Weapons [now the Naval Air Systems Command], the Bureau of Supplies and Accounts and one of its subordinate units, the Fleet Material Support Office located in Mechanicsburg, Pa.

"During this first visit, the field team gives what amounts to a staff presentation for the whole station—that is, for the divisions and departments that will have requirements placed upon them. In some cases, these activities will establish coordinator billets if they're directly involved.

"After they give their presentations, team members split up; data processing and maintenance personnel meet with their like numbers from the station, and the field team's supply representative starts working with the Supply Officer and his staff. At this point, his intention is to help the Supply Officer determine what he has on hand, in terms of facilities, equipment and personnel, that can be used to help implement 3-M. With the other team members, he must work up an operation that will succeed because of, or in spite of, the station's geographical makeup—hangar location in relation to warehouses and, to some extent, the proximity of the aircraft maintenance department to squadrons and delivery facilities.

"The point is to tailor 3-M to the needs of that particular air station; their background in the program



BECAUSE OF 3-M, THESE MEN CAN DO THEIR OWN JOB

"This transition is not easy. We have to remember that, in many cases, implementation of 3-M puts the Supply Department into a whole new world. It places emphasis on areas that never concerned the supply organization before."

What areas? "For one thing," Fleming explains, "the documentation of material requirements, material turn-in and material control now slips over completely to the Supply Department. Formerly, if a squadron wanted to turn in a component and get a new one, its personnel had to prepare the required paperwork. The nature of maintenance personnel and the load they had to carry was such that days and weeks might be eaten up by delays before the supply man saw either document or component: he figured, in turn, that if maintenance didn't need what it asked for any faster than that, why hurry? It was, I suppose, a normal reaction."

The reaction may have been normal, but it also virtually guaranteed that the wheels of progress in both supply and maintenance could be ground practically to a halt.

Getting the wheels rolling again, and keeping them in motion, is 3-M's job. It accomplishes this mission by dictating the switch of paperwork preparation from the maintenance to the supply end of the operation.



STOREKEEPERS CHECK PUBS FOR PART STOCK NUMBERS

Fleming explains how the system works as follows:

"The system says, in effect, that the Supply Department will assume this burden, and it should require from the mechanic only the essential details: part number, manufacturer's code, quantity and a few other little pieces of information. Since Supply assumes responsibility for the requisition portion of the cycle, many time-consuming procedures are eliminated—among them, requirements for documents to be signed by a responsible maintenance official and a complete check-off of funding by whoever has that chore."

In its detailed discussion of the supply organization's new responsibilities, which will come under closer scrutiny in the next article of this NANews series, the 3-M Manual is extremely blunt about who handles the paperwork. "The maintenance organization," it says, "will *not* prepare supply documents for material required in direct support of weapon system maintenance. Such documents will be prepared solely by the supply support center [SSC—the maintenance organization's single point of contact with Supply under 3-M]. The maintenance organization will verbally notify [Supply through its SSC] of the need for such material. . . ."

AS OUTLINED previously in this series, the process of placing demands on Supply and getting them answered quickly is further speeded by the use of such mechanical aids as tel-autewriter facsimile transmitting and receiving devices, closed-loop telephone circuits and radios. Their proper use is almost an absolute certainty because, as Fleming points out, "a man can't tie up the line calling his wife to see what she's planning for supper if the phone links him only with Supply or a shop. He can't, that is, unless his wife works at Supply or is a Navy aviation mechanic."

There is still another point to be made for turning paperwork requirements over to Supply. It has been made before from the maintenance side, but Fleming

takes a good hard look at it through Supply's eyes:

"One of the frustrating things about maintenance before 3-M was this: Say I'm a maintenance officer and I want to call up Supply and ask about the hot requisition I had a man drop off there a couple of hours ago. Whom do I call? Where is my requisition in that vast supply complex?

"Well, if I know Bessie, maybe I'll call her and ask her to run down my chit for me. So she drops what she's doing, runs all over the house, but she can't find it. She's lost time from her job, upset her boss and a half-dozen other people, and I'm no better off than when we started.

"Or, let's assume I'm a maintenance chief with a red-hot requisition on my hands. If I want to keep tabs on my chit, I may decide to hand-carry it through Supply all the way. Now, you multiply me by 10 or 15 others like me and you can imagine what a mess I can make of a storekeeper's day.

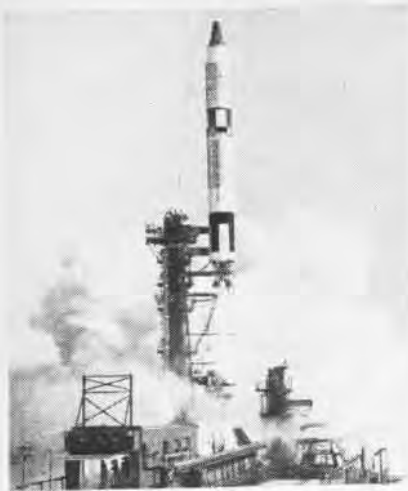
"The thing about 3-M is its ability to eliminate maintenance people from the supply area—and in some cases, we think this is the best thing that ever could have happened."

How 3-M manages to keep maintenance men in maintenance spaces and supply people, for the most part, in supply spaces—and out of each other's hair—brings into play the new internal organizations the system calls for both ashore and afloat. They and the new methods they use are a primary reason why nobody should have to be a "gopher" under 3-M.

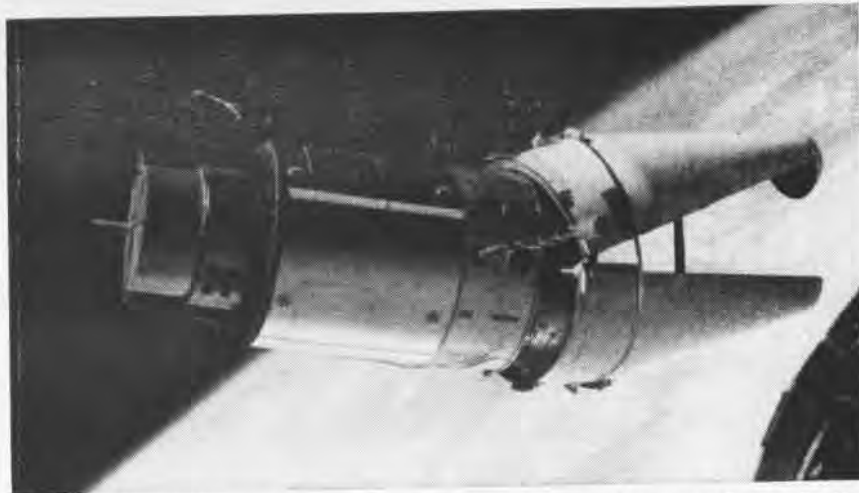
Next: Supply gets a face-lifting.



HIGH-PRIORITY ITEMS ARE DELIVERED IN AN HOUR



CARRYING Astronauts Thomas P. Stafford and Eugene A. Cernan, Gemini is launched.



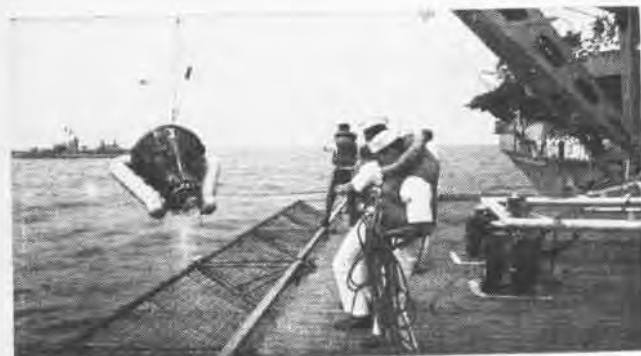
ANGRY ALLIGATOR is the description Stafford gave the Augmented Target Docking Adaptor launched before Gemini 9. Fiber-glass cover failed to separate from the vehicle.

LAUNCH AND RECOVERY OF GEMINI 9



THEIR RIDE completed, astronauts Stafford (L) and Cernan give a "thumbs up" to crewmen of prime recovery ship, USS Wasp, after

landing in the Atlantic. In a flawless re-entry witnessed by TV viewers, Gemini spacecraft landed only 3½ miles from the Wasp.



WASP SAILORS hoist spacecraft aboard carrier with astronauts still inside. Gemini 9 launch occurred June 3; recovery, June 6.



ASTRONAUTS are welcomed aboard Wasp by RAdm. W. N. Leonard, task group commander, and Capt. G. E. Hartley, Wasp skipper.

ONE TIME SEAPLANE TENDER IN NEW ROLE

A FORMER Navy seaplane tender, the USS *Albemarle*, now the USNS (U.S. Navy Ship) *Corpus Christi Bay*, has a new and important role in Vietnam. Operated by the U.S. Army and manned by an MSTS crew while anchored in Cam Ranh Bay, the 538-foot ship is the only facility in Vietnam performing major repairs on more than 1,000 helicopters. She represents a new concept in support of a war effort.

Ever since the early '50's, the vast arsenal of U.S. aircraft, each requiring its own particular parts, has strained supply channels and maintenance facilities. *Corpus Christi Bay* and ships like her will, it is expected, significantly reduce the number of parts shipped to the United States for repair and thus speed up service.

Land-based helicopter support bases are not always feasible. Not only are they costly and time-consuming to build, but they are also difficult to guard. After a crisis is over, it may no longer be economically or politically sound to maintain them. They then have to be disassembled or abandoned. A floating aircraft maintenance facility like the *Corpus Christi Bay* overcomes these disadvantages.

The *Corpus Christi Bay* is able to function for 30 days without any resupply of aircraft repair parts. She can be moved on an hour's notice and be fully operational en route and at her destination.



MEN AT WORK IN HYDRAULICS SHOP

In the first two months of operation in Vietnam, the *Corpus Christi Bay* assumed 10 percent of the total Aeronautical Depot Maintenance Center (ARADMAC) work load. Previously the center had performed all depot maintenance on all Army aircraft. ARADMAC is located at Corpus Christi, Texas, the locality after which the ship is named.

When the *Corpus Christi Bay* left Texas for Cam Ranh Bay, she carried repair parts and tools which would last a 60-day period in the United States. Since parts take two months to reach Vietnam, the operations staff, immediately upon arrival, began projecting requirements—this time for 90 days. The

next projection will be for 180. Facilities on board the *Corpus Christi Bay* include chemical, metal, avionics, calibration, plating processing and engine repair laboratories. The lab facilities consumed most of the \$75 million required to renovate the ship.

Two helipads, one at each end of the ship, make it possible for as many as four helicopters to land on the ship at one time. One is kept free for a possible emergency.

The communications system on board keeps the Army commander, Lieutenant Colonel Harry O. Davis, in contact with a liaison man in Saigon. The Saigon representative reports helicopter problems so that the ship can prepare facilities before the parts arrive. The ship can make contact with any port facility or aircraft in the area.

The *Corpus Christi Bay* is equipped with two 20-ton cranes to lift helicopter parts from the transporting craft and lower them through the rear hatch to the primary work area. The ship can ingest any completely assembled helicopter, except the *Chinook*, whose rotor blades must be removed for it to enter the hatch.

Once in the main working area, parts, some weighing tons, travel via monorail to different parts of the ship for test, repair, replacement and assembly.

The *Corpus Christi Bay* is capable of furnishing her own security while in port. She is equipped



USNS CORPUS CHRISTI BAY CARRIES CREW OF OVER 350



ARMY CH-47 CHINOOK WILL LAND ON SHIP'S HELIPAD

with water lights which illuminate the outside of the ship and the water for 30 feet around. Guards carry rifles and concussion grenades; scuba divers periodically survey the ship's hull. Her J-boat can be launched to provide area security, but at Cam Ranh Bay, a harbor patrol guards all ships so the *Corpus Christi Bay's* J-boat is not needed.

Fully air-conditioned, the 16,000-ton ship is completely self-sufficient. Laundry facilities, a post office, physical exercise equipment and movies are available.

The repair battalion of 320 enlisted men is composed of Army personnel. The crew of 140 MSTB personnel handle all ship's duties. They maintain and operate the ship as well as cook and serve the food.

Because of her unique capabilities, the *Corpus Christi Bay* has helped the war effort in other ways than repairing and maintaining helicopters. On the mainland when quarry workers were busy blasting, breaking and hauling rock to be used for dock facilities, the ship several times sharpened their drills.

At one time, 43 Japanese dump trucks were inoperable for lack of the same part. Using their facilities, ship's specialists fabricated the necessary parts exactly and got the trucks moving again.

The *Corpus Christi Bay*, commissioned by the Navy in 1940 as USS *Albatross*, a seaplane tender, was mothballed in 1950. She was re-commissioned in 1957 for research and development. In 1963 she was lent to the Army. In 1964, the Army began renovating the ship for use as a helicopter repair ship, named it the *Corpus Christi Bay* and designated it T-ARVH-1 (aircraft repair ship, helicopter).

The USNS *Curtis*, another ex-seaplane tender, will soon be dry-docked in the U.S. for a similar renovation. Ships once thought obsolete are now being considered for support operations, but military planners are holding up actual renovation in order to determine the effectiveness of the *Corpus Christi Bay*.

So far the *Corpus Christi Bay* seems to be providing a good solution to the problem of maintenance in Vietnam, well worth its cost.



BRITISH AMBASSADOR TO U.S. ACCEPTS MODIFIED MCDONNELL PHANTOM

ROYAL NAVY GETS FIRST OF F-4K'S

IN A CEREMONY June 28th at St. Louis, Mo., Britain's Ambassador to the United States, Sir Patrick Dean, accepted delivery of the first *Phantom II* built by the McDonnell Aircraft Corporation for the Royal Navy. Dubbed the F-4K, the modified version of the *Phantom* is the first of 200 ordered by Great Britain.

Rear Admiral Allen M. Shinn, USN, Commander NASC, spoke on the same occasion. He praised the F-4K as being the latest and "in some ways the greatest of the line."

Much of the equipment on the modified fighters, including the electronic and navigation/attack systems, will be manufactured by British industry. The F-4K and its RAF counterpart, the F-4M, are powered by Rolls Royce *Spey* turbofan engines.

Whereas the nose landing gear on the U.S. Navy *Phantom's* is extendible 20 inches for improved takeoff attitude during catapulting, the one on the F-4K can be extended a total of 40 inches. An increased ground angle-of-attack reduces the required wind-over-the-deck, and thus carrier speeds, by 11 knots. The main landing gear and arresting hook have been strengthened to permit the F-4K to land at weights as high as 38,000 pounds with 24-fps. sink rate.

A foldable nose radome section, including the radar antenna, reduces the total length of the aircraft to just under 52 feet.

The F-4K is equipped with a high-powered, forward-looking radar and missile computer system, the prime function of which is to prepare, launch and guide *Sparrow* or *Sidewinder* missiles for air-to-air attack. This radar permits target detection and automatic tracking at extremely long range under all-weather conditions day or night. Coupled with this radar, the *Phantom's* long range, air-to-air missile armament of radar-guided *Sparrow III's* and infrared, heat-seeking *Sidewinders* enables it to complete intercept missions at great ranges.

Like all U.S. fighter versions of the *Phantom*, the F-4K will be able to carry more than eight tons of external payload (conventional or nuclear bombs, fuel tanks, air-ground missiles, rockets, mines, napalm and cannon) on five stations under wings and fuselage.

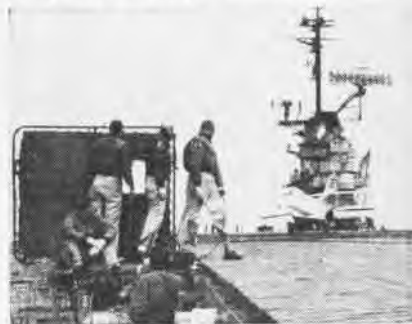
The F-4K uses drooped ailerons to reduce landing speed for operations on British carriers. This feature is also in U.S. Navy *Phantom II's*, beginning with the last F-4B's. A slotted stabilator is incorporated with the drooped aileron as a result of the Naval Air Test Center's initial evaluation.



A VT-22 COUGAR FLIES OVER HOME BASE, NAAS KINGSVILLE, TEXAS



STUDENTS CHECK TARGET BANNER



LANDING ON LEXINGTON'S DECK

ADVANCED JET TRAINING AT VT-22

ONE OF THE SIX jet training squadrons in the Naval Advanced Training Command is VT-22 at NAAS KINGSVILLE, Texas. The goal of the squadron is to train prospective Naval Aviators to the point where they will require very little additional training to make them combat-ready pilots. Close liaison with Combat Readiness Air Wings insures a smooth transition.

The student receives his advanced training in 20 weeks at VT-22. After three weeks in ground school, he is ready for the more than 40 flights he will make in the squadron's *Cougars*.

He will have professional instruction, for VT-22's average instructor has a minimum of one Fleet tour and 2,000 hours of flight.

Once a student is ready to fly, he is assigned an instructor who takes him through familiarization, basic instruments and instrument navigation. Together they are a teaching-learning team. The student learns what the instructor expects, and the instructor concentrates on strengthening the student at his weak points. This becomes, in

effect, a tutorial relationship from which the student derives great benefit. His particular problems can be solved and his weaknesses can be eradicated.

Forty hours of the 140-hour syllabus are devoted to instrument training. On five cross-country hops, the student practices all phases of instrument navigation under actual flight conditions and earns his Standard Instrument Card.

Formation flying requires nine flights. Two airplanes make the first three flights, an instructor flying the lead plane. The student sits in the front seat of the second plane with an instructor in the rear cockpit to give on-the-spot instruction. On the next three flights, the instructor is still flight leader, but the student solos in the second airplane. The last three flights (four-plane) give the student an opportunity to practice all types of formation flight, including tactical wing and section flying.

Low-level navigation is next. On six flights, chart preparation and fuel control are stressed. Generally, these hops are flown at 500 feet to

provide a good workout at high-speed, low-level flight.

Five combined rocket and bomb delivery hops and one strafing flight constitute the next training phase. Both 30 and 45-degree deliveries are practiced. Two raked targets are available to the squadron. Competition is keen for "top bomber" of the day.

Air-to-air gunnery is comprised of seven hops. The first, an introduction to the pattern, is followed by three camera and three firing flights. The film from the camera assessment provides an excellent training aid for evaluating each run. The student needs a good sense of timing and a steady hand to establish the exact pursuit curve that leads to the firing cone. After each "live" hop, the students eagerly await the return of the target banner to count their hits.

The last phase of training before the student wins his wings is carrier landings. The student completes 11 FLMP hops before "hitting" the carrier.

VT-22 has an average on-board count of 40 aviator-instructors, 60 students and 200 enlisted men.

USS Duluth in Training New LPD to Join Pacific Fleet

On June 3, USS *Duluth* (LPD-6) joined the Atlantic Fleet Amphibious Force, Little Creek, Va., for training prior to joining the Pacific Fleet. The newest amphibious transport dock, named for the city of Duluth, Minn., was christened last August by Vice President Hubert H. Humphrey's daughter, Mrs. Bruce Solomonson.

Duluth, sixth of a class of new ships, with a complement of 30 officers and 460 enlisted men, can carry 930 combat troops and 2,000 tons of supplies and equipment.

LPD-6 can also transport and launch six troop-carrying helicopters, and hold nine medium landing craft and ballast down to discharge them from her well-deck.

Vietnam Service Lauded HS-2 Given Unit Commendation

Helicopter Antisubmarine Squadron Two has been awarded the Navy Unit Commendation Ribbon for meritorious service in Vietnam from October 9, 1965, to February 3, 1966.

The citation, signed by Secretary of the Navy Paul H. Nitze, reads in part: "Consistently maintaining a high standard of combat readiness, Helicopter Antisubmarine Squadron Two developed the technique of both day and night in-flight refueling from a destroyer and, with this technique and an improvised means of carrying additional fuel internally, routinely performed hazardous search and rescue missions over hostile areas, frequently at distances as great as 250 miles from a safe landing site.

"During this period, the squadron accomplished the first night-rescue from enemy territory by a Navy helicopter in North Vietnam. Additionally, in the face of adverse weather conditions, [HS-2] rescued several persons, who crashed in hostile waters, and evacuated numerous medical patients from destroyers, three [of them] at night."

Admiral Roy L. Johnson, Commander in Chief of the Pacific Fleet, sent HS-2 a message of congratulation for carrying out arduous sea-air rescue commitments in addition to ASW responsibilities.

MOVIES SHOT FROM HELOS

A NEW ADVANCE in Navy photography, the use of a special camera mount in helicopters, is now operational in Vietnam.

Known as the Nelson Tyler Mount, the new piece of equipment completely isolates photographic equipment—as well as the photographer—from aircraft vibrations. Its use is shown in photographs below and on pp. 20, 21.

Taking movies from helicopters is not a new thing, but the methods

mount and related gear in Vietnam. He says of it:

"Operating the mount successfully does not require any additional specialized training. The photographer does need to have a background in aerial photography, and he has to get used to the gear."

Although the camera used with the mount weighs about 50 pounds, it comes out to about two ounces in actual pressure when it's properly balanced.

The photographer has excellent control over both mount and camera. The mount has friction controls to vary the ease with which the camera is moved. The movie-maker controls the camera's motor and its focus and zoom lens; he can also vary the speed of zoom movement to match the speed of the helicopter in which he flies.



PREPARING FOR A PHOTO MISSION

used in the past were rarely successful; constant helicopter vibrations resulted in jerky pictures. Now, however, the new mount isolates helo-mounted movie cameras from the aircraft so they can be used to follow action over the kind of terrain that would make the use of other types of photographic gear impossible.

The Navy, at this writing, had five of the mounts, two of them under control of the Pacific Fleet Combat Camera Group. The unit has one in operation in Vietnam; it's been proven under fire, and the resulting movies were said to be comparable to those taken on the ground.

Navy Chief Photographer's Mate Richard Smith, a qualified air crewman and graduate of Syracuse University's photojournalism school, is responsible for operating the



CAMERA IS CHECKED OUT BY SMITH

Nelson Tyler, the mount's inventor, is a young man involved in filming commercial movies in Hollywood. Interested in the aerial end of his business, he experimented until he came up with the mount the Navy is using.

Commercially the rig has been used in the filming of several major motion pictures; it has also played a part in TV commercials.

The Navy became interested in the mount because of the efforts of Commander Walt Fraser, OinC of the PacFlt Combat Camera Group, who heard of Tyler's invention and tried it out. He persuaded authorities to buy five of them.

W HELO-MOUNTED

By *Ed R. Boling, JOC*

A successful result of the installation of the new Nelson camera mount to take movie footage from airborne helicopters, a task that was once hampered by aircraft vibrations. Such photography was at one time difficult that used to be transmitted to the cameraman and his crew, Chief Photographer's Mate Richard Smith, a photo-enthusiast, for maintaining the helo-borne movie gear, and other operations in Vietnam and have flown photographic missions for intelligence purposes, in several kinds of helicopters.



the new Nelson Tyler camera mount to take movie footage from airborne helicopters, a task that was once hampered by aircraft vibrations.



HELO PILOT Capt. J. L. Usher, USMC, and Smith check charts of the Da Nang area before a mission. A Navy coordinator watches.



WITH SMITH seated in the open door, an Army UH-1 Iroquois helo lifts off on photographic mission somewhere in South Vietnam.



AT WORK with his helo-mounted motion picture camera, Smith is depicted sighting in on his "target" and preparing to "shoot."



TECHNICAL MANAGEMENT DEPARTMENT IS RESPONSIBLE FOR THOUSANDS OF MANUALS, MILLIONS OF PAGES

THE TIE-LINE TO TECHNICAL SERVICES

DISCOVERING a person's occupation by asking questions is the principal format for a popular TV program. If a member of the panel were to ask Captain C. W. Pittman, Jr., "Does your organization perform a service?" he would answer, "Yes, definitely."

Captain Pittman is the new Commanding Officer of the Naval Air Technical Services Facility (NATSF). Although it has a complement of only 347 civilian personnel and 10 military personnel, this facility turns out an almost incredible amount of work. Computers help make this task possible

*By Joseph J. Selsky
and Harry Gebelein*

in fulfilling NATSF's increasing responsibilities as directed by the Commander, Naval Air Systems Command (NASC).

The facility, located at 700 Robbins Avenue, Philadelphia, Pa., consists of four departments, titled as follows in accordance with their missions: Technical Manual Management, Aeronautical Maintenance Management Information, Engineering Support Services and Engineering Data Management.

Service is NATSF's business:

each department makes an important contribution to the direct support of Naval Aviation. Captain Blanchard says, "It also provides indirect services to other agencies, military and civilian, which are directly involved in various aspects of Fleet support."

In effect, NATSF provides the services-behind-the-services to give the Navy reliable planes with built-in safety, the best instruction on how to operate and maintain them, the best tools to keep them combat ready and the complete engineering data drawings required to maintain them efficiently.

The facility is a field activity of NASC. Primary support is provided by the Assistant Commander of Logistics and Fleet Support, NASC. But its tasks also involve in one way or another, most of the Assistant Commanders of NASC.

NATSF was first established when what was once the BuAer Publications Division moved from Washington to the Naval Supply Depot, Philadelphia, in August 1954. By 1958, the scope of service had widened and the Naval Air Publications Facility, as it had come to be called, was renamed the Naval Air Technical Services Facility. A look at the departments as they work and serve is in order.

THE TECHNICAL Manual Management Department, abbreviated to TM, is directed by Commander C. W. Rich, a Naval Aviator. His deputy is C. E. Ashmore, an expert in aircraft maintenance. These men are backed up by two "pros" in the field of technical publications: Margaret Putnam and Melba Moore.

TM's mission is to procure, print and control distribution of technical publications for NASC. They also publish periodicals, training literature and meteorological charts for DCNO (Air). In short, they make sure that the people in the operating activities have the information they need when they need it. "Get It to the Field on Time" might well be the title for TM's fight song.

On "the most wanted list" for pilots and aviation mechanics are NATOPS flight manuals and all manner of instructions—operational, maintenance, structural repair, inspection requirements, overhaul—and illustrated parts breakdowns.

When a new aircraft or piece of equipment is to be added to Navy's inventory, program managers of both NASC and NATSF determine in conference what publications will be needed. Then procurement specialists in TM prepare the specifications for each type of publication, developing and coordinating them. When an aircraft procurement is involved, the publication is a part of the aircraft contract. At every step in publication, TM is on the job, establishing deadlines and proofing the material to be sure

that it meets Navy's specifications.

In light of the statistics which follow, the program for which TM is responsible is no small one.

- An average of over 6,000,000 pages are printed each week.
- Approximately 5,000 manuals or changes to existing manuals were procured, printed and distributed in the last fiscal year.
- About \$27 million were budgeted for the FY 1966 publications.
- An additional sum of \$1.7 mil-

and the special technical reports.

AMMID was established in 1958 to manage BuWeps' Material Reliability Program. The title changed several times, its name now connecting it properly to the new responsibilities associated with the Standard Navy Maintenance and Material Management System, called 3-M.

Commander Teal's deputy is Mr. J. S. Kusiv, a veteran engineer formerly associated with the O&R



AMMID'S ANALYSIS DIVISION STUDIES FEEDBACK DATA FROM THE FLEET

lion was expended on the technical documentation necessary to support new aircraft equipments.

- About \$10.9 million are expended for the procurement of publications and data for out-of-production aircraft.
- Approximately half of some 42,000 line items are under inventory control.
- Publications are distributed to approximately 6,500 addressees.

AT THE HELM of the Aeronautical Maintenance Management Information Department (AMMID) is Commander T. W. Teal, a Navy pilot who combines with flying a skilled hand in pioneering new concepts in data collection. He administers a realm filled with reams of machine-processed tabulations

establishment. The department is organized into two divisions: one called Analysis and the other Data Management.

AMMID's duties are manifold. The department manages the Unsatisfactory Material/Condition Report (UR) System and the Technical Directives Control Center. It manages and generates detailed information in support of the aeronautical Component Repair Program; publishes two periodicals; standardizes, maintains and controls the aircraft maintenance Work Unit Code Manuals and maintains Configuration Status Accounting. It also functions as the Maintenance Management Information Center.

Maintenance standards are achieved by various methods. With

the increasing use of computers, it is now possible not only to gather a great deal of information but to develop it quickly and surely in such ways as to reach significant conclusions and establish a basis for recommendations.

But statistics do not always tell the whole story. There must still be a form which allows for detailed narrative reporting of special situations which could not be reported under 3-M statistical reporting procedures. A further and equally important requirement is a reporting medium which will provide fast reaction time, and this requirement the Unsatisfactory Material Condition Report (UR) fills. UR's are on their way to action information addresses within 24 hours of their receipt at NATSF. Actions taken as a result of the UR's and the earlier FUR's have, in effect, kept planes in the air and increased safety.

AMMID's Analysis Division makes most of its studies upon request of NASC or one of its field support activities. The principal source of data used for its analyses are the 3-M and UR systems. The division also draws upon technical documentation from other sources and makes field trips to examine the hardware under study. The object of the studies is to establish reliability and maintainability factors which will indicate failure rates, optimum forced removal times, readiness posture, repairability, weapons system utilization, mission and cost effectiveness. These factors are analyzed in order to improve not only programs for current aircraft but also future designs.

Recently AMMID completed the standardization of the aircraft maintenance Work Unit Code Manuals (WUC). This was necessary because the WUC's for the 3-M program were initially prepared by the aircraft manufacturers and the O&R departments. Since there were many participants, codes and nomenclature were diverse. The work of standardizing was, therefore, imperative.

Space does not permit a detailed description of all that goes into the varied documents for which AMMID is responsible. It is responsible not only for data relating

to component repair but also to NASC for the administration of the Technical Directives Control System for weapons systems and their equipment. This function includes the review, format control, numbering, print requisitioning, advance distribution and indexing of all NASC-promulgated, letter-type technical directives. Application and compliance data status files related to these directives are also maintained for each aircraft, power plant and selected equipments.

AMMID prepares two regularly scheduled publications. The Aeronautical Material Reliability Digest, distributed monthly to all Naval Aviation activities, publicizes specific failures or problem areas and recommends improvements in material and maintenance procedures. The Avionics Equipment Reliability Data Analysis Report is a 300-page publication which provides Naval managers of avionics equipment a rapid index of equipment installation, reliability, maintainability and general performance. This publication is updated and distributed quarterly.

THE THIRD NATSF unit, Engineering Support Services Department (ES), assists the Commander, NASC, by providing engineering and technical support for tasks related to weapons systems and their supporting equipment. The department is headed by LCdr. J. R. Allen, assisted by Manager-Engineer J. P. Harkins. Right now, ES is responsible for 16 tasks assigned by NASC.

With almost every procurement of weapons systems, the Navy is a potential buyer of great numbers of tools and test equipment for maintenance. Since the Navy cannot afford to throw away an aeronautical component each time one breaks down, tools are needed to fix them. However, there are already on hand in Navy a myriad of tools. Without some kind of control, the chances of buying something the Navy already has are great. Controlling the number and kinds of support items in the aeronautical inventory to only those really needed is a function of the ES department.

Before a contractor prepares a manual covering a repairable com-

ponent or an accessory, he submits a list of the special tools and test equipment he recommends to maintain it. ES screens this list and eliminates undesirable, unnecessary, inappropriate or already-on-hand tools.

ES reviews the operation, service and overhaul publications which the contractor prepares on general and standard support equipment; checks for the technical content and the appropriateness of the illustrations; prepares technical manuals on government-designed support equipments; and reviews engineering drawings of selected support equipments.

Other important tasks are the coordination of the Navy Calibration Program for NASC and the preparation of the Metrology Requirements List. ES frequently represents NASC at selection and allowance conferences on avionics, calibration requirements and test bench publications used by Navy and Marine Corps activities.

THROUGH TECHNICAL manuals, reliability and performance data, and checking of support equipment, NATSF serves Naval Aviation. There is a fourth area of service — engineering drawings. These link designers, maintainers and procurers of aircraft parts. This important operation belongs to Engineering Data Management Department (ED). Its task is gigantic in scope. The department handles millions of items annually and does business with approximately 2,500 contractors. The head of the department is Commander N. H. McDade; his assistant is P. H. Daggett, Jr.

ED services both the Fleet maintenance and manufacturing establishment and the supply support facility. Drawings acquired by ED are, for the most part, delivered as a line item in hardware contracts issued by NASC, the Aviation Supply Office (ASO), the Navy Purchasing Office and other procuring activities. ED's Data Control Branch reviews outstanding contracts to assist NASC and other procuring activities in formulating the requirement for data that must be prepared and delivered.

When the contractor furnishes drawings on 35mm microfilm, an

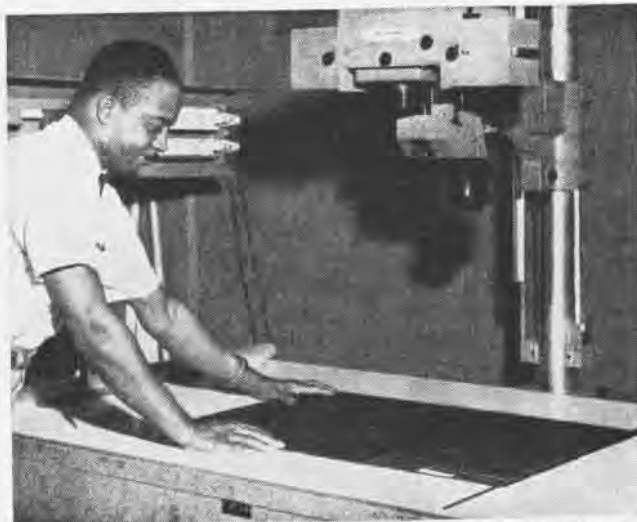
Electric Accounting Machine (EAM) card for each frame of the microfilm is also required. From film and EAM cards, aperture cards are prepared. The aperture card is a modified EAM card with a small opening the size of a frame of microfilm. Each aperture card has been keypunched and contains such information as drawing number, revision letter, drawing size, contractor identification, proprietary designation and security classification.

All submitted material is inspected for legibility of the micro-

a magnified image of the drawing for viewing. "Hard copies" of the drawing in original size can also be made. Best of all, the card or a whole deck of them can be mailed or shipped economically with an almost non-existent chance of any damage to the drawing itself.

The possibilities of the aperture card technique are endless. Economies derived in the areas of handling, packaging, storage and mailing costs have been substantial. That is why there is a present effort in ED to purge the unneeded and convert to microfilm all paper

The new system of aperture cards saves money. In FY 1963, ASO mailed out about 290,000 copies of blueprints with invitations for bids. In FY 1965, ED furnished ASO 1,072,000 aperture cards for bid sets at a cost of \$64,500 in machine, material and man-hour charges. An equivalent number of blueprints would have cost \$358,000. And the space reduction for mailing was even better at a ratio of 20:1. Furthermore, a by-product of the use of aperture cards was the reduction in procurement lead time of at least three weeks.



ENGINEERS LOOK OVER AN EJECTION SEAT DOLLY AN ENGINEERING DRAWING IS PUT ON MICROFILM

film, proper keypunching and sequential order of the aperture card and compliance with the contract requirement. Less than one-half of one percent of the submitted material is rejected, as compared with 50 percent before application of ED quality control.

After inspection, the roll of microfilm and aperture cards are sent to ED's micro-reproduction shop where automatic machinery cuts and puts each frame of the microfilm into its corresponding aperture card. The card and the drawing it holds are ready now to fulfill Navy-wide requirements. For example, the card can be punched, interpreted, sorted and processed. Duplicates of the drawing in any number desired can be made from this card at high speed. Users can insert reproduced cards into microfilm readers and obtain

drawings retained on older contracts. ED can do the job.

Approximately 5,500,000 reproductions of drawings are made annually to service the Naval Establishment. The Overhaul and Repair Departments as well as other rework activities account for approximately 4,000,000 of this number. O&R's receive, on automatic distribution, a duplicate aperture set of all drawings applicable to the aircraft, engines and equipments they maintain. An average of 10,000 drawings per week is pulled from ED files to meet this need.

ED's single largest customer is ASO. To meet the requirements of ASO's competitive bidding process, ED provides ASO with "bid sets" of the drawing documentation for mailing to its potential suppliers of aircraft materials.

The above figures are not static, nor is ED. ED's Advanced Planning Branch is developing new techniques of data management systems. For example, to eliminate duplication of data held by the several services, ED has developed and tested a system for exchanging data with the Air Force Logistics Command, utilizing the Automated Digital Network (AUTODIN). The results of this test indicate a permanent exchange is desirable and an agreement is being implemented so as to take full advantage of the system.

In today's Navy, support services play a vital role. Without them, some missions could not be fulfilled; some functions would have to stop. Servicing today's weapon systems is a specialized business—the *only* business of the U.S. Naval Air Technical Services Facility.

ULTRA-CLEAN BEARING SHOP IS OPENED

THE ULTRA-CLEAN Bearing Processing Facility, recently opened at Overhaul and Repair Department, NAS NORTH ISLAND, culminates 25 years of pioneering effort in bearing processing and the design of "clean" shops. North Island claims that it is the cleanest shop, manned by the cleanest craftsmen, anywhere in the far-flung facilities of the Department of Defense.

In this shop, about one million bearings, representing about 1,500 types, will be processed each year. They range in size from 5/16" to 16" outside diameter and cost as little as 60 cents or as much as \$500 each.

The shop is categorized as a "Class 100" clean room. This means the filtering system, the best available today, will intercept air-borne contaminants so effectively that, per cubic foot of air, not more than 100 particles of 0.5 microns or larger can enter the room.

Personnel who work in the shop are covered from head to toe in lint-free garments and enter the shop through air showers. Rigid requirements as to personal cleanliness are met by the employees. One requirement is that men must be clean shaven and the women wear no cosmetics except lipstick.

At its opening, the facility was dedicated to the Fleet Operating Forces by Captain R. M. Kercheval, Commanding Officer. Congressman Bob Wilson, member of the House Military Affairs Committee, witnessed the ceremony (center in photo).

In speaking of the value of the shop, Captain Kercheval (right in photo) said, "The lives of men, the accuracy of weapons, and the reliability of weapons systems are controlled to a marked degree by the condition of the bearings used. The reliability is increased when the bearings are processed in a shop which is controlled as to heat, humidity, airborne contaminants and air pressure. Thus, we confidently expect the quality level of North Island-processed bearings to become higher as the result of their processing in the Ultra-Clean Production Facility at this station."

By Eretta Sudsbury

Captain J. F. Daniels, Jr., O&R Officer (left in picture), introduced ten employees who helped pioneer bearing reclamation at North Island and the ultra-clean shop: H. S. Hultquist, S. L. Chisholm, M. E. Tompkins, N. N. Rudd, Robert Even, D. F. Brady, K. A. Rush, Virgil Allphin, David Stanley and L. H. Roberts.

The new, prefabricated, all-steel, airtight, free-standing enclosure is located in a building constructed



LEADERS AT THE SHOP DEDICATION

as a warehouse in 1923. The 52'x 80' enclosure has a laminated, glare-free interior and provides shadowless illumination.

The temperature is constant at 72 degrees, not varying more than a degree up or down. Relative humidity is maintained at a maximum of 45 percent. Sound is controlled at a maximum of 55 decibels, as energy transmitted by air-carried vibrations can disrupt the fine precision measurements required in processing miniature bearings.

One entire wall of the shop contains the laminar cross flow air-handling system which cleans the air entering the work area. The super-interceptor filters screen out airborne fragments as small as a particle of cigarette smoke.

The facility is equipped with advanced testing, gaging, lubricating and cleaning machines. Many were custom-built to meet the exacting requirements for processing aerospace bearings.

O&R NORTH ISLAND has, over the past several years, constructed shops with controlled atmospheric condi-

tions for overhaul of instruments, hydraulic equipment and electronic test equipment.

Bearing processing at North Island began 25 years ago when WW II shortages made salvage of used bearings essential. In 1942, it was common practice to replace any questionable bearing; in fact, many bureau directives required 100% bearing replacement when accessories were overhauled, as seals and gaskets are now replaced.

Late in the '50's, a clean room module, the first on North Island, was installed to handle precision jet engine bearings, noise-free bearings for radar equipment and high speed electrical bearings.

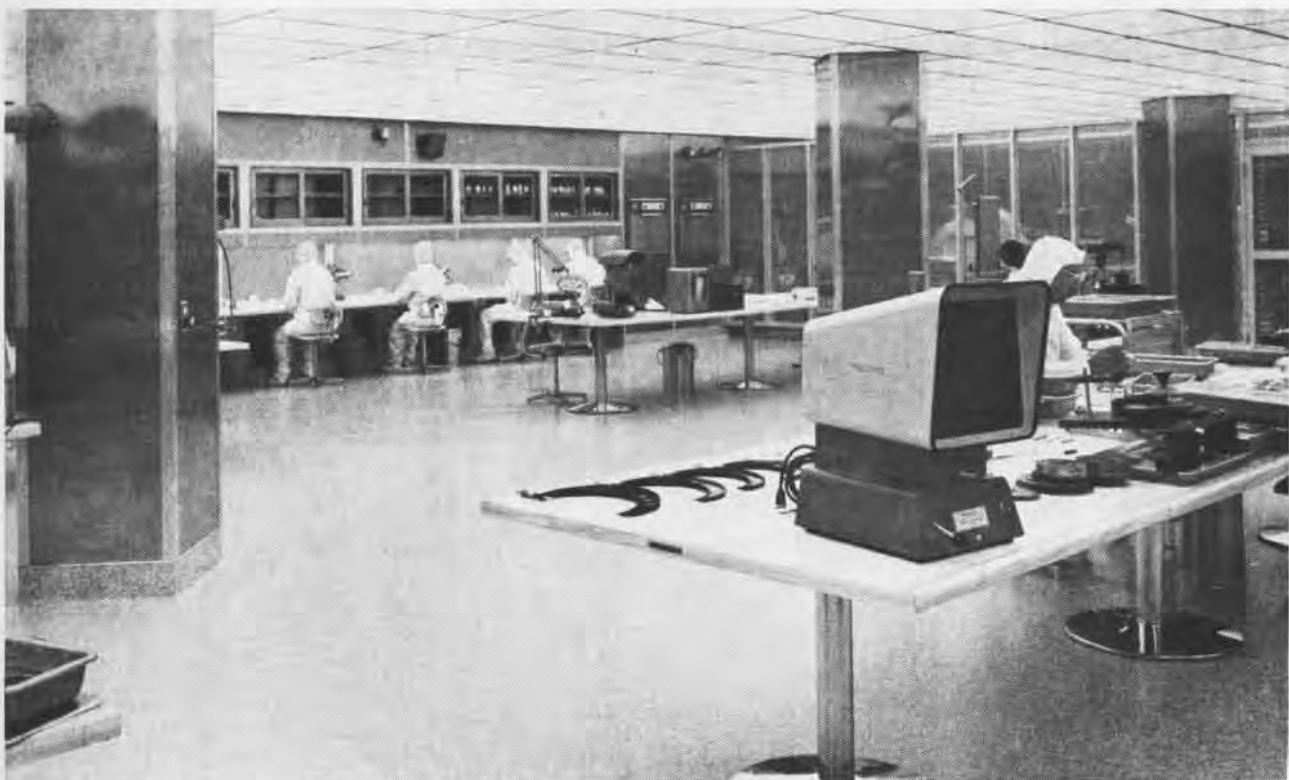
All the pioneer efforts of O&R NORTH ISLAND led to its being assigned the task of developing standard bearing processing instructions for Navy-wide use. The first bearing instructions were issued in 1954 as a NAVAER Handbook, "Maintenance of Aeronautical Anti-Friction Bearings." The manual is still maintained by the O&R Materials Engineering Division.

There were still other tasks. A test and development project was assigned North Island which made the station responsible for developing standard test equipment and facilities for all O&R's. Most of the personnel recognized at the Bearing Shop dedication were involved in that assignment.

Contacts were made with private industry, the Air Force, BuShips and other defense activities. Their representatives met at a Bearing Equipment Conference at North Island in October 1960.

Following the conference, BuWeps asked North Island to develop both standard equipment and facilities for processing aircraft bearings. Over half a million dollars were spent in evaluating new equipment and procuring it for all O&R's.

At the same time, other O&R's developed bearing shops for housing the new equipment. The new Ultra-Clean Bearing Facility, now operating at North Island, was based upon specifications from the Materials Engineering Division.



PANORAMIC VIEW OF THE ULTRA-CLEAN BEARING PROCESSING FACILITY LOCATED AT NAS NORTH ISLAND



TWO BEARINGS—NOT THE LARGEST NOR THE SMALLEST



CONCENTRICITY GAGE MOUNTED ON VIBRATION BLOCK



A. C. CAIN OPERATES THE INTERNAL DIAMETER GAGE

FLEET AIR WINGS ON PATROL



SALISBURY SOUND'S covey of seaplanes lies at buoys around Cam Ranh Bay. One in foreground is being prepared for hoisting.



ALDIS LAMP signal from buoy watch crewmen tells the tender ship that all is secure aboard the airplane at the end of the day.



HOT MEALS are delivered to buoy watch members from AV-13 by small boat. Crew's flight rations also are provided by the tender.



WATCH SECTION takes the sun on Marlin wing. Crew awaits supply boats and is ready to turn up engines in emergency or high winds.

Recent operations out of Cam Ranh Bay, South Vietnam, gave seaplane pilots and crews a sample of "life afloat" in a manner reminiscent of World War II days when seaplanes were more abundant in number.

The P-5 *Marlin* seaplanes of Patrol Squadrons 40, 48 and 50 arrived this spring for a concentrated 24 days of operations at Cam Ranh Bay, working with the USS *Salisbury Sound* (AV-13).

Each crew was scheduled for a flight each day, usually 10 hours of flying on *Market Time* surveillance duty. With a crew of 12 assigned to each aircraft, seaplane buoy watches were maintained on board each flying boat during non-flying hours. Four members of each crew—one officer, three enlisted men—

were "on watch" aboard the aircraft while the other eight crew members were sent to the *Sally* for hot showers, food and clean beds. Crews alternated daily on the watches.

The *Salisbury Sound*, which provided complete support for all assigned crews, hoisted 11 aircraft aboard for maintenance and two engine changes were made.

The long-legged P-3 *Orion* makes the entire world "home" to the deploying squadrons of the U.S. Navy. The recent history of VP-8 serves as an illustration. During the past year the squadron has deployed from its NAS PATUXENT RIVER home to Iceland, Norway, Puerto Rico, Newfoundland and the Azores. Then, late in May,

VP-8 relieved VP-28 at NS SANGLEY POINT, R. P., only 26 hours of flight time from its Maryland base. The VP-28 crews headed for Hawaii and their homes after logging more than 8,500 hours in support of the Seventh Fleet on ASW, search and surveillance missions.

* * *

A number of fortunate things happened to the crew of a VP-31 *Neptune* after the unfortunate ditching of the aircraft in the Pacific off San Diego in May. The plane's four engines (two props, two jets) all quit but the pilot managed to make a forced landing at sea within 300 yards of a Coast Guard cutter. All crew members exited safely without injury.

The cutter happened to have on board 26 airline stewardesses learn-

ing correct procedures for ditching an aircraft at sea. One of the rescued crewmen said, after his pick-up, "By this time I didn't know if it was a good dream or a bad one. I mean like 26 girls is almost too much to ask a fellow to believe after he's just been dumped unexpectedly into the drink."

Although the *Neptune* sank in 68 feet of water, salvage crews had it completely out of the water and back on the squadron's ramp within 24 hours.

* * *

VP-26 bade farewell to a fast-moving sailor. He is Darrell Whitney, AO2, who was accepted for the Navy Enlisted Scientific Education Program. Whitney, who made his rate in only 37 months, had qualified as a squadron ordnance man and plane captain. At the time of his new assignment, he had been serving as assistant squadron duty officer. He faces four years of college and will then receive a commission.

* * *

Twenty-two years ago, Edward C. Waller was an apprentice seaman in the Naval Reserve. He took a competitive exam for the Naval Academy prep school, was accepted and in 1945 went to the academy as a midshipman. In late June, 1966, now a commander, Waller took command of VP-44 at NAS PATUXENT RIVER, relieving Commander Jack McDonald. The

new C.O. has served as squadron executive officer and, from 1963 to 1965, he was program officer for A-NEW, airborne ASW weapon system under Navy development.

* * *

VP-17 has been increasing its operational and personal relationships with Canadian Maritime Pacific Squadron 407. At the same time, a VP-17 crew is departing from NAS WHIDBEY ISLAND, a 407 crew is departing from Comox, B. C. The Americans land in Canada and the Canadians visit Whidbey. Maintenance is no problem since both squadrons fly the SP-2H *Neptune*. A 10-hour operational track is given each crew.

* * *

The pilot was a little hesitant as he slowly edged the SP-2H *Neptune* into a parking space at Iwakuni. He had ample reason. Just in front of the parking spot was a case of cold beer.

This was VP-42's way of welcoming the initial four-plane echelon of their replacement, VP-2.

* * *

Captain W. T. Rapp assumed duties as Commander Fleet Air Wing Three at NAS BRUNSWICK, Maine, on June 28, relieving Captain T. R. McClellan.

* * *

VP-23's Combat Aircrew #3, headed by LCdr. G. M. Fowler, touched down at NAS BRUNSWICK June 15th to complete the squadron's 10,000th flight hour of the

fiscal year. Flying the SP-2H *Neptune*, VP-23 logged the majority of its hours on surveillance and ASW missions.

* * *

The *Mad Foxes* of VP-5 acquired a new airplane and a new mascot at their NAS JACKSONVILLE home base. Welcoming the arrival of the first P-3 *Orion* for VP-5 was Captain Harry Scott, Commander Fleet Air Wing 11. In the cockpit was Commander M. D. Marsh, the squadron C. O., who, with three other crews, had participated in transition training at NAS PATUXENT RIVER, Maryland.

The mascot, a three-month-old fox, was delivered to Jacksonville by an aircrew from VP-26, NAS BRUNSWICK. Arrangements for the little animal had been made through the Maine Fish and Game Commission. VP-5 had established a home cage for the fox prior to its delivery.

VP-5 has been flying the *Neptune* since 1948 and is the last operational squadron to fly the "Echo" version, the SP-2E.

* * *

Another Brunswick squadron, VP-23, bade farewell to one of its senior enlisted men. Chief Petty Officer Roland Dugan was guest of honor at inspection ceremonies in the squadron hangar. Commander T. F. Wentworth, Jr., C.O., presented a squadron plaque and National Ensign to Dugan, who finished 29 years of service, ten in the Brunswick area.



COMMANDER McDonald (R), former C.O., congratulates Commander Waller on his assuming command of VP-44 at Patuxent River.



A NEPTUNE from Canadian Maritime Squadron 407 arrives at Whidbey Island to substitute for a VP-17 aircrew at Comox, B.C.

SELECTED AIR RESERVE



MRS. ETHERIDGE IS BRIEFED BY LT. D. I. CORLEY



VICE PRESIDENT HUMPHREY WITH CAPTAIN SCOTT



NEW TAIL INSIGNIA FOR NARTU NORFOLK AIRCRAFT

Anniversary Highlights

NARTU MEMPHIS highlighted the 50th Anniversary of the Naval Air Reserves by indoctrinating a veteran aviatrix in the jet age of Naval Aviation. Mrs. Dorothy Etheridge, aviation editor of the *Delta Democrat Times* of Greenwood, Miss., received her basic jet lesson in a T-1A from Lt. Daniel I. Corley, VA training officer. The pair then flew to Nashville to visit VA-792, training in A-4B's.

Also at Memphis, five candidates for the title of Miss Navy Relief donned flight gear for a ride on the blue and white Anniversary float in the 32nd Annual Cotton Carnival Parade. The float featured models of two aircraft—one ancient type, the other, a modern jet.

At NAS TWIN CITIES, Minneapolis, Minn., Vice President Hubert

H. Humphrey received a blue and gold Anniversary windbreaker from Captain William Scott, C. O. of the station. The commemorative windbreakers were also presented to guests who attended the station's Civilian Orientation Cruise at Pensacola.

New tail insignia for the NARTU's aircraft is Norfolk's way of marking the Anniversary. The white seagull on a blue field identifies the aircraft with the Tidewater area. In photo, Captain G. R. Crittenden, NARTU skipper, and Mr. Donald Shriver, Norfolk Chamber of Commerce, discuss the new marking. The insignia was adopted with the cooperation of the Chesapeake Bay Bridge-Tunnel Commission.

Over 46,000 persons watched the *Blue Angels'* aerial salute to the Naval Air Reserves at NAS SEATTLE when the station held its Anniver-

sary Air Show and Open House.

On June 7, Times Square was officially re-named Naval Air Reserve Square as one of the high points of NAS New York's observance of the Anniversary. On the same day, the City of New York issued an official proclamation commemorating the Reserves' 50 years.

On June 9, New Jersey Governor R. J. Hughes signed a proclamation officially recognizing the Reserves' Anniversary. The document was presented to Captain Norman E. Berg, C.O. of NARTU LAKEHURST, home of New Jersey's Reservists.

Record Claimed

When VA-727, home-based at NAS GLENVIEW, deployed to MCAS YUMA, Ariz., recently for the squadron's annual two-week training cruise, records toppled.

In the 14-day period, members

of the jet attack squadron, led by Commander Julian Hansen, flew their *Skyhawks* a total of 809.6 hours—a station record. According to an NAS GLENVIEW release, this is also a record for Naval Air Reserve squadrons flying the A-4B's. Another probable record—for Reserve pilots flying the *Skyhawk*—was set by Lt. Angelo Gravagan who flew 60.8 hours in the same period.

The squadron maintained a 96 percent availability rate for the A-4B's during the cruise.

Exchange Students

Recently four foreign exchange students were given an opportunity for a first-hand look at Naval Air Reserve Aviation when they toured NAS WILLOW GROVE, Pa. The students were official guests of Captain W. H. Martin, Commander of Air Wing Staff 93 (L).

In the picture, from left to right, are Bengt Wingstrand (Sweden), Haluk Ozdalga (Turkey), Joanna Van Moorsel (Holland), Maria Boven (Belgium), tour guide Edwin L. Grant, PRC, and Captain Martin.

All high school seniors, the students are living with families in the Willow Grove area while they finish their high school education. Miss Boven lives with Captain Martin's family.

Look at this Record

LCdr. Charles E. Brown, a member of NARTU-821 at NAS NEW ORLEANS, has established an en-

viable drill attendance record over the past 16 years. He has attended every monthly drill since joining the Reserves at NAS BIRMINGHAM, Ala., in December 1953.

He has taken 13 annual two-week training tours: two in California, three in Florida, four in Washington, D. C., and four at Norfolk.

During the past 13 years, LCdr. Brown has driven his automobile to attend drills as follows: from his home in Tuscaloosa, Ala., to NAS BIRMINGHAM, 1953-57, 6,520 miles; from his home in Tuscaloosa to NAS ATLANTA, 1957-62, 30,000 miles; and from his home in Shreveport, La., to NAS NEW ORLEANS, 1962-May 1966, 26,665 miles.

It all adds up to a grand total of 63,185 miles, which officials at NAS NEW ORLEANS believe is a distance record. They also point out that the perfect attendance record is outstanding and commendable.

Marine March

"The March of the Citizen-Marines," a new march saluting the U.S. Marine Corps Reserves' 50th Anniversary, was premiered by the Marine Band on June 5 at a Watergate concert in Washington, D. C. Thousands of residents and tourists attend the Watergate concerts held in the shadow of the Lincoln Memorial on the shore of the Potomac.

The new march was written by William C. Jolly, a former composer and arranger for the Marine Band. A special recording of the march will be furnished to all the Marine Corps Reserve Units.

New Assignment

Rear Admiral E. A. "Ace" Parker, Deputy Chief of the Naval Air Reserve Training Command, is scheduled to assume new duties this fall as Assistant Chief of Naval Personnel for Naval Reserve and Naval District Affairs.

Clothing to Vietnam

Personnel at NAS WILLOW GROVE participated in the people-to-people program recently. Twenty-six packages of clothing were loaded aboard a C-118 for delivery to needy civilians in Vietnam. The clothing was collected by the Defense Industrial Supply Center, Philadelphia.

Availability Record?

A 98 percent availability of the squadron's A-4B *Skyhawks* was maintained by VA-741 on its two weeks of active duty training at MCAS YUMA, ARIZ. The 12 pilots of the squadron, home-based at NARTU JACKSONVILLE, Fla., flew 306 sorties during the period.

Model Meet

An air show climaxed the 35th National Model Airplane Championship Meet held at NAS GLENVIEW July 25-31. Headliners on the program included the *Blue Angels*; the Army's world champion skydiving team, the *Golden Knights*; the "Flying Professor;" "Wild Bill" Forno with his WW II F8F *Bearcat*; Pete Meyers and his clipped-wing Piper *Cub*.



FOREIGN STUDENTS SHOWN HELO LANDING GEAR



RESERVES HAIL ANNIVERSARY NAME FOR TIMES SQUARE

AT SEA WITH THE CARRIERS



VIETNAM-A-GONE-GONE IS ASW CARRIER KEARSARGE AS THE SHIP DEPLOYS FOR DUTY WITH SEVENTH FLEET

PACIFIC FLEET

KEARSARGE (CVS-33)

When their carrier left Long Beach, Calif., for her second cruise in the waters off Vietnam, *Kearsarge* men made sure everybody knew they were bound for where the action is. They spelled out the words "Vietnam-A-Go-Go" on the flight deck. In 1964, *Kearsarge* was on a routine WestPac cruise when the first Gulf of Tonkin crisis erupted, and the CVS steamed out of Yokosuka, Japan, on short notice to provide ASW protection for Seventh Fleet units in the South China Sea.

Before they left home port, *Kay* men participated in a variety of activities that were consistent with their ship's policy of intensive and well-conducted community relations and public affairs programs.

Some of the more recent included an "adoption" ceremony by a chapter of the Navy League, answering a mother's "SOS," hosting more than 15,000 visitors during an open house, and continuing dancing lessons that earned some crewmen a Watusi with a group of

bunnies. Confusing? No, Sir!

Kay's C.O., Captain Willard L. Nyburg, and the ship's Exec, Captain Luther W. S. Laubach, were present for the ceremony during which the Las Vegas Council of the Navy League formally "adopted" the CVS. The adoption means that the organization will sponsor programs and projects to benefit the ship.

The mother of two Torrance High School girls sent an "SOS" to *Kay* after a mixup in hotel ballroom reservations scuttled plans for the school's junior-senior prom just 24 hours before it was to be held. This "SOS" was interpreted a bit differently than usual, however; it translated to "Save Our School!"

The plea from Mrs. Jean McClung did not go unheeded; Permission was granted to have the dance in *Kay's* hangar bay and a much-relieved committee chairwoman, Katie McClung, Mrs. McClung's junior daughter, quickly got the area into proper "dress" for the prom.

The kids, a report from the CVS said happily, had a ball.

Residents of the greater Los Angeles area—15,000 of them—boarded *Kay* during open house

held as part of Armed Forces Day.

It was titled "Long Beach Night" and it was the third dance held aboard the carrier for neighboring college students since the beginning of the year. Students from Long Beach City College and California State College were guests for this one.

All the practice they got during dances held aboard their ship came to good use for *Kay* men when Los Angeles TV personality Johnny Grant staged "Operation Starlift," a USO-type show, for crewmen. Included among the entertainers were six Playboy Bunnies from the Hollywood Playboy Club, who had no trouble getting partners for a fast Watusi number held on stage.

The *Kearsarge* release detailing events of the program had an apt description for the young ladies. It called them "morale-builders."

KITTY HAWK (CVA-63)

Kitty Hawk has returned to home port, San Diego, completing a deployment to the Far East that carried her into the thick of combat operations off Vietnam. The CVA's crew members were involved in combat activities right up to

the very end of the combat tour.

Pennsylvania's Governor William W. Scranton was flown aboard *Kitty Hawk* for a visit while the carrier was operating off Vietnam. He was greeted by Rear Admiral James R. Reedy, Commander Attack Carrier Striking Forces, Seventh Fleet, and Captain Martin D. Carmody, *Kitty Hawk's* skipper.

Commander Murray C. Cook received the Legion of Merit from Rear Admiral Henry L. Miller, Chief of Information, during a Washington ceremony. The award was presented to Commander Cook for his meritorious service in support of combat operations in Southeast Asia while he was serving as C.O. of VA-115 aboard *Kitty Hawk*.

The citation that accompanied the award praised the commander for his inspirational leadership and his personal involvement in every facet of squadron and air wing operations and tactical planning.

Commander Cook also recently received the Navy League's 1966 John Paul Jones Award. He was nominated for it by men in his squadron.

Squadron pilots of RVAH-13 aboard *Kitty Hawk* have claimed a flight time record for the RA-5C *Vigilante*. They flew the RA-5C 351 hours, on 195 sorties, in a single



INTREPID C.O. WITH THAI GUEST

month of combat operations over Vietnam.

BENNINGTON (CVS-20)

A six-month overhaul at the Long Beach Naval Shipyard completed, *Benn* was operating off the coast of California—and playing host to a variety of visitors. Among them were delegates attending the 1966 National Red Cross Board of Governors Reception and Open House in San Diego. Representing all 50 states and a number of foreign countries, they and more than

4,000 Red Cross volunteers boarded the CVS during an open house.

Benn crewmen also hosted representatives of the National Navy League convention being held in Santa Monica, then got the chance to invite some guests of their own choosing for a "family day" type cruise out of home port.

One of those guests was C. Van Epen, 82, a former second class boatswain's mate who served aboard the first *Bennington*, a 1,200-ton gunboat. He was among more than 2,000 dependents and friends of crewmen to come aboard.

Lt. Charles H. Livens, VA-125, received congratulations twice over when he made *Benn's* 89,000th arrested landing during carquals off California. He became a triple centurion at the same time.

INTREPID (CVS-11)

The *Fighting I* completed 14 days of sustained operations off the coast of South Vietnam, operations that included more than 1,100 combat sorties and the dropping of 1,400 tons of bombs on enemy targets.

The Third Atlantic Fleet carrier to serve off Vietnam, *Intrepid* was provided a light attack capability during an intensive overhaul before she deployed. Now, A-1 *Sky-*



SACRAMENTO UNREPS KITTY HAWK AND USS BACHE IN WESTPAC WATERS



BENN VISITORS VIEW VIGILANTE



LEGION OF MERIT TO CDR. COOK

raiders and A-4 Skyhawks give the ship her attack punch.

Flying an average of 90 sorties a day for the first 11 days of combat operations, CVW-10 pilots provided close air support for ground action and struck at Viet Cong base camps, headquarters facilities, bunkers, fortifications, and anti-aircraft and mortar positions.

The day before *Intrepid's* aircraft went into action, the ship was visited by Vice Admiral John J. Hyland, ComSeventhFlt. The visit had special significance for him; 21 years ago, as Commander Air Group 10, he flew strike missions off *Intrepid* in the same waters.

Intrepid may only recently have returned to the attack carrier game, but her flight deck and squadron crews are handling themselves like pro's already. A release said they scored what is believed to be the fastest aircraft launching time recorded by a U.S. carrier.

Nine A-4's and six A-1's, loaded with bombs and rockets, were catapulted from the ship in a flat seven minutes with only a 28-second interval between launches. The time beat a previous *Intrepid* record of 34 seconds and is thought to be the fastest time for launches using two steam catapults consecutively.

Vice Admiral Jit Sangkhadul, Commandant of the Thailand Armed Forces Staff College, was a guest of Captain Guiseppi Macri, *Intrepid's* C.O., aboard the carrier.

ENTERPRISE (CVAN-65)

Although they've spent many months in Pacific waters, *Enterprise* crew members got their first look at the ship's West Coast home port when the CVAN steamed into Alameda from a deployment to the waters off Vietnam. NANews will present a more detailed article on the *Big E's* arrival, as well as *Kitty Hawk's* return, in the next issue.

The 12,000th combat sortie since *Enterprise* joined Seventh Fleet forces off Vietnam was flown by Lt. Hart J. Schwarzenbach, Jr., VA-94. With a tally like that, it's little wonder that the nuclear carrier's C.O., Captain James L. Holloway III, has become a member of the Ten Thousand Trap Club.

The club is a highly exclusive (and unofficial) group with a membership restricted to carrier skipper whose ships log 10,000 arrested landings during their tours of duty. A rear admiral selectee, Captain Holloway took command of *Enterprise* July 17, 1965, when the number of arrests stood at 42,233. When the *Big E* became the first nuclear-powered ship in history to engage in combat, the landing rate soared to more than 2,650 a month



BROTHERS REUNITED IN CVAN-65

and recently passed the 62,000 mark.

Twin brothers, one of them a Marine serving in Vietnam and the other an *Enterprise* crew member, were reunited aboard the *Big E* at sea off Vietnam.

Arriving on a regularly scheduled C-1A *Trader* flight from Da Nang, where he is stationed with the First Marine Air Wing, Pfc. David E. Willkomm was greeted by his twin, John W., an RMSN assigned to the CVAN's Operations Department.

The ship also hosted two congressmen when Representatives Donald Rumsfeld (Ill.) and Howard Callaway (Ga.), members of the House Government Operations Committee, arrived in the ship's *Trader*.

CONSTELLATION (CVA-64)

Thirty-two *Constellation* crewmen were burned, five seriously, when a fuel tank of an F-4B *Phantom II* apparently ruptured as

the jet was launched from the Seventh Fleet carrier.

Burning jet fuel that spilled across the flight deck and catwalk was quickly extinguished by flight-deck firefighting crews. There was no damage to the ship and the *Phantom* returned safely.

Lt. Herbert E. Carter, a 34-year-old *Connie* pilot and assistant CIC officer, has written a novel entitled, "Never Look Back." The book, about an amnesiac who learns from newspaper headlines that he is a murderer and a gangster, has been published by Vantage Press.

HANCOCK (CVA-19)

The Navy surgeon who replanted the nearly-severed arm of *Hancock* crew member James H. Wolff said just before the seaman left the deployed carrier that the limb was healing well.

Wolff nearly lost his right arm when a line he was holding was pulled into a winch. The line caught around his wrist and pulled his right arm from its socket, leaving it attached by only a few inches of skin and three minor muscles. A quick-thinking shipmate reversed the winch and freed Wolff, then applied first aid to slow the bleeding until the injured man could be taken to sickbay.

LCdr. Joseph Farrell, the surgeon who replanted the arm, said it was in good condition. Its chances of living, he said, were "close to 100 percent."

Dr. Farrell decided to attempt a replant of the arm after *Hancock's* medical staff gained control of the main blood supplies and gave transfusions to replace the lost blood. In a grueling, five-hour operation, the surgeon wired the arm back into its socket, reconnected blood vessels, sewed torn tissues, and laid nerves in place for possible future linkage.

When he left *Hancock*, Wolff was bound for a rehabilitation center where experts will help him try to regain full use of his arm.

PRINCETON (LPH-5)

Captain Richard L. Cochrane relieved Captain William R. McKinney as commander of the Seventh Fleet's Amphibious Ready Group in a ceremony aboard

Leo B. McCuddin was relieved as *Ranger's* C.O. by Captain W. M. Harnish.

ATLANTIC FLEET

LEXINGTON (CVS-16)

Arrested landings Nos. 154,000 and 155,000 were made aboard *Lex* as the ship with the most arrestments in the carrier Navy continued her winning ways. The first was made by Commander Alfred M. Howard, VT-24's C.O., in a TF-9J *Cougar*; the second was logged by Ens. C. G. Olson, Jr., VT-4 student pilot, in a *Buckeye*.

F. D. ROOSEVELT (CVA-42)

FDR reached two milestones in a two-week period when her crew celebrated the 21st anniversary of her launching and LCdr. Richard J. Damico, VA-12, made her 150,000th arrested landing in an A-4 *Skyhawk*.

INDEPENDENCE (CVA-62)

LCdr. Samuel P. Huhn, ComCarDiv Six's flag secretary, made *Independence's* 84,000th arrested landing in the ship's C-1A *Trader*.

The ship's crewmen played hosts to dependents and guests for a Family Day cruise that took the

visitors out of home port, Norfolk, for a day at sea.

Ltjg. Thomas V. Higgins, VF-101, made *Independence's* 85,000th arrested landing in an F-4 *Phantom*.

SARATOGA (CVA-60)

Sara's 108,000th arrestment was made by LCdr. R. J. Gage, VA-46, in an A-4 *Skyhawk*.

AMERICA (CVA-66)

America's C.O., Captain Lawrence Heyworth, Jr., is one of a relatively few naval officers who are both aviators and submariners. Recently, he got the chance to add some salt to his dolphins when he boarded the submarine USS *Croaker* and "took her down" off Malta.

BOXER (LPH-4)

Boxer has come of age. Crewmen of the LPH celebrated the 21st anniversary of the ship's commissioning with an appropriate ceremony, including a cake-cutting.

After returning from their second quick trip to the Pacific, during which their ship transported vitally needed men and equipment, *Boxer* crewmen received a "well done" message from Admiral Roy L. Johnson, CinCPacFlt, who praised their "flexibility" and "adeptness."



CAPT. McCUDDIN ABOARD RANGER

the ASW carrier, USS *Princeton*.

Two pilots from Marine Medium Helicopter Squadron 364 made the 38,000th helo landing aboard *Princeton* since the ship was redesignated an LPH in 1959. The pilots were 1st Lts. Ken Gross and H. Scott Roberts.

RANGER (CVA-61)

In a brief break between combat operations off Vietnam, Captain



USS FRANKLIN D. ROOSEVELT, NOW 21 YEARS OLD, OPERATES AS AN ATTACK CARRIER IN THE ATLANTIC FLEET

B-26 IS A TEACHING TOOL



VARIABLE STABILITY B-26 DEMONSTRATES SPECIAL FLIGHT PROBLEMS

THE CORNELL Aeronautical Laboratory (CAL), under contracts sponsored by the Navy and the Air Force, has been engaged in research on airplane handling qualities using a variable stability airplane. Such an airplane is one in which special equipment is installed to alter the response characteristics easily and quickly in flight. It is also being used as a training device.

A syllabus, developed by CAL in collaboration with the U.S. Naval Test Pilot School (TPS), Patuxent River, Md., exploits the capabilities of an instrumented B-26 as a laboratory, demonstration vehicle. The flight program is integrated with the TPS lectures on stability and control to give the student a theoretical background for the flight demonstration. TPS academic and flight instructors as well as CAL engineers, who act as demonstration pilots, agree on the terminology and points to be emphasized. This coordination of lectures and flight demonstration provides a sound approach to correlating theoretical study of the motion of an airplane and the way the motion appears to the pilot in flight.

The syllabus requires three two-hour flights for each pilot. Since there are 15 to 17 pilots in each TPS class, CAL engineers remain about a month in Patuxent to complete the syllabus. The syllabus is

proving invaluable to the study of stability and control.

In the B-26, the pilot controls in the cockpit are separated from the control surfaces, and both controls and control surfaces are driven by servos. A safety test pilot retains normal controls. The pilot's controls (control stick and rudder pedals) and the control surfaces (elevator, ailerons and rudder) are made to move in proportion to the pilot's command inputs, such as force on the control stick. In addition to the command inputs, the surfaces are made to move in proportion to such quantities as angle of attack, sideslip angle, or rate of roll or yaw. These extra inputs to the control surfaces alter the behavior of the airplane, giving it a prompt or slow response. The damping of the motion can be changed to make the airplane settle down steadily or bobble about.

Practically any desired combination of motions can be obtained by adjusting knobs which control the gains of these additional inputs. The additional signals are not fed to the servos which move the controls in the cockpit, so the pilot is not aware of the control surface motion required to change the motion of the airplane. He feels that he is, for the moment, flying an airplane that really has the response characteristics which the variable stability system provides.

In addition to providing variable stability flight instruction at TPS and the Air Force Aerospace Research Pilots' School, CAL participates in various research programs conducted by FAA, NASA and aerospace contractors. Recent programs included simulation of the flight qualities of the C-5A and supersonic transport, using variable stability airplanes.

Satellite System Feasible Could Be Used by Naval Aircraft

The Navy satellite navigation system—used by ships of the Fleet for more than two years to fix their positions at sea—is feasible for use by aircraft, according to tests conducted by The Johns Hopkins University Applied Physics Laboratory.

The system employs the Doppler shift or change in the frequency of a signal from a satellite with respect to the listener or the receiving station. From the Doppler signal and the satellite message giving its position in orbit, Navy ships are able to fix their positions in any weather, day or night, independent of any other radio, electronic or mechanical assistance.

Aircraft navigational fixes, based for the first time on satellite signals, were determined over measured courses and confirmed by precise ground-based markers.

Using satellite signals for aircraft navigation was first projected in 1959, when APL initiated the Doppler system for BuWebs, but aircraft speeding at varying altitudes posed problems not encountered in shipboard computations. New developments in the technology of accurate speed determination made possible the new tests.

100,000 Hours in FY 1966 VT-3 Accumulates High Score

In June, Training Squadron Three, home-based at NAAS WHITING FIELD, Fla., counted its 100,000th flight hour for FY 1966. Ens. Michael E. Langley, on a routine training flight in his T-28, flew the milestone hour.

Included in the total are 50,500 accident-free hours, accumulated by VT-3 since December 1965.

Commander A. R. Schuknecht is the unit's Commanding Officer.



ONE OF THE FUEL DRUMS TO MARK LIMITS OF SKIWAY IS LIGHTED



MAYFIELD IS HEADED FOR HOSPITAL

NAVY FLIES OUT MAN FROM ANTARCTIC

AN EMERGENCY flight into winter-darkened Antarctica saved a critically injured Navyman, Robert L. Mayfield, UT2.

On June 6, Mayfield lay in McMurdo dispensary, injured from a fall which had ruptured his bladder. Two days later, thanks to the skill and courage of a Navy pilot and his crew and the assistance of many Navy men, New Zealanders and Australians, Mayfield was resting comfortably in a Christchurch, New Zealand, hospital, his condition listed as good.

Mayfield had been injured in a fall June 1. The injury would not have been a serious one, had it occurred in the civilized world. But it happened at McMurdo, in the dead of the six-month Antarctic winter night, where men are cut off from the "outside" by the most hostile environment on earth. The McMurdo medical team did all it could with the available equipment but it was not enough. May-

field must go to Christchurch.

Advised of the necessity of flying Mayfield out if his life was to be saved, Rear Admiral F. E. Bakutis, the Operation *Deep Freeze* commander, requested ComNavAirLant's permission to use a VX-6 *Hercules* for the 12,000-mile trip from Quonset Point, R. I. Permission was granted and the plane readied. At McMurdo, Williams Field was being prepared for the *Hercules*' arrival.

The *Hercules*, carrying a supplemental 3,600-gallon internal fuel tank, began its flight, stopped at Andrews AFB to pick up Admiral Bakutis, his staff meteorologists and doctor and headed for New Zealand. Piloting the C-130 was Commander Marion Morris.

From Byrd Station, 600 miles inland from McMurdo, came word that the airstrip there was ready if an alternate were needed. The Royal New Zealand Air Force reported a *Sunderland* aircraft and a

Bristol 170 *Freighter* were on standby. The New Zealand frigate *Taranaki* was steaming south to her at-sea rescue station halfway between McMurdo and Christchurch.

The rescue *Hercules* stopped briefly at Christchurch before continuing its flight. At 4:10 P.M., June 7, the burning oil drums outlined the Williams Field skiway. Four minutes later the *Hercules* was on the ice.

While fresh fruits, vegetables and mail were offloaded, Mayfield was flown by helicopter the six miles across the ice shelf from the dispensary to the aircraft. By 7:20 P.M., the *Herc* was on its way and at 2:22 A.M., June 8, the airplane was back at Christchurch and Mayfield was put in an ambulance headed for the hospital.

The operation went well. Mayfield was all right. The air evacuation had succeeded. All that remained was the trip back to Quonset Point, VX-6's home base.



AT McMURDO STATION, ANTARCTICA, BURNING FUEL DRUMS MARK SIDES OF SKIWAY FOR EVACUATION AIRCRAFT

WASHINGTON WX



READERS OF NAVAL AVIATION NEWS WHO HAVE EXPERIENCED A WASHINGTON, D.C. SUMMER WON'T BE SURPRISED TO LEARN THAT THE NAVY DEPT. IS LOCATED IN THE HEART OF THE URBAN HEAT ISLAND.

A HEAT ISLAND IS DESCRIBED AS THE CENTER OF HIGHEST TEMPS. WITHIN THE D.C. AREA, THIS POINT VARIES ONLY SLIGHTLY FROM SEASON TO SEASON.



STATISTICS COLLECTED SINCE 1870 INDICATE WITHOUT TOO MUCH DOUBT, THAT DOWNTOWN WASHINGTON IS THE HOTTEST AND DRIEST OF ALL AREAS IN THE DISTRICT.



THE NORTHWEST AREA OF THE DISTRICT OF COLUMBIA EXPERIENCES THE COOLEST SUMMERS, WHILE SOUTHEAST WASHINGTON APPEARS TO HAVE THE HOTTEST.

AVIATORS FLYING FROM ANDREWS MIGHT ENCOUNTER ICE ON THE RUNWAYS BY THE LAST WEEK IN OCT. FREEZING TEMPERATURES HAVE OCCURRED IN THE DISTRICT AS EARLY AS 21 SEPTEMBER.

© CONNOR



DURING THE WINTER THE SUBURBS ARE FROM 5 TO 7 DEG. COLDER THAN DOWNTOWN D.C. THE REGION OF NASA HQ'S AT GREENBELT USUALLY RECORDS THE LOWEST TEMPS FOR THE ENTIRE METROPOLITAN AREA.

Carolina's First District. Captain J. W. Williams, base commander and C.O. of the USCG Aircraft Repair and Supply Center, then turned the runway operations over to Captain W. C. Morrill, skipper of the air station. First landing was made by Commander Tom Carter and Ltjg. Steve Carrier in a Lockheed HC-130W Hercules transport.



AERIAL OF ELIZABETH CITY RUNWAY

50,000 Accident-Free Hours Record for Hurricane Hunters

In June, VW-4 of NAS JACKSONVILLE counted its 50,000th accident-free hour. More than 10,000 hours of that total were accumulated during hurricane reconnaissance flights.

Operational since 1953, the squadron is the only one on the continent providing advance warning on approaching storms and hurricanes. One weather reconnaissance flight can provide information on an area of 1,500,000 miles. Information gathered on these flights saves lives and property throughout the Caribbean and southeastern United States.

From June through November, the Hurricane Hunters in their WC-121N Super Connies fly long hours over empty water into tropical storms and hurricanes, gathering weather information such as force and direction of winds and composition of storm clouds. Flying at altitudes of 500 to 1,000 feet, winds as high as 150 miles per hour are often encountered near the actual "eye" of the hurricane.

New Runway is Dedicated Opens at Elizabeth City, N.C.

A 7,200-foot, \$2,556,000 runway, equipped with what was termed the "ultimate" in lighting systems, has been dedicated at the U.S. Coast Guard Air Station at Elizabeth City, N.C.

With magnetic headings of 100 and 280 degrees, the runway features a modern Visual Approach Slope Indicator (VASI) lighting system. The system, installed by Bryant Electric Co. of Brevard, N.C., includes edge, threshold, cen-

terline, narrow gauge, high intensity end identifier, and visual approach slope indicator lights—670 in all.

The new runway was constructed by crushing old pavement for use as sub-base material. Necessary sub-base and sand were pumped from the Pasquotank River, while gravel and sand for concrete mixing were transported by barge to the air station. The finished product has a concrete thickness of 13 inches.

Featured speaker during the dedication ceremony was Congressman Walter B. Jones of North

Editor's Corner

In-Flight Refuel Milestone. One of the innovations introduced to the Vietnam area has been the "in-flight" refueling of the helicopters from destroyers. Choppers hover alongside destroyers and take on new fuel loads, thereby extending their radius of operations. The USS *Henry W. Tucker* (DD-875) recently marked her 75th refuel operation with a helicopter and 16th in a single month. *Tucker* was one of the first ships to participate in the new operation and claims to have been the first to pump fuel to a hovering helicopter at night.

AIRBORNE DENTAL WORK. Dental Technician Second Class Waldron Karp recently became the first dental technician ever to be awarded an Air Medal, according to the U.S. Navy Medical Newsletter. The explanation? He served with two Marine helicopter squadrons in Vietnam in 1964 and made numerous rescue and evacuation flights.

Fine and Noble Art. The following is an excerpt of a story by Andrew Shinnick, JO3, USS *Franklin D. Roosevelt*, in the ship's newspaper *Presidential*:

"When the word is passed to 'form a line' groans of dismay may be heard about the decks. Long experience seemingly gives a sailor

a feeling of dread whenever a line is formed—and for good reason. In most cases a line seems not to move at all, especially pay lines and chow lines. Sometimes they seem to move too fast—shot lines and dentist lines, in particular.

"With about 4,000 persons aboard ship, lines of some sort are almost inevitable several times a day. Lines are simply necessary to serve all the crew.

"To some sailors, it's a place to waste time. One sailor might observe the delicate intricacies of the exhaust pipes, vents, cables and wires overhead. Some find shelter from boredom by concentrating their attention on an object, such as a fire main, to guard against its disappearance. Others find delight in gazing at nothing at all. These sailors exist in line with no definite thoughts; they move when shoved, fill space and expel carbon dioxide.

"A great many sailors find waiting in line a time for useful meditation, study or reading. Some bring paperback books. Textbooks and training manuals are often spotted in line, especially when advancement exams are due soon. Other sailors make mental plans for the future, whether they involve his career, family, girl friend or liberty. Still others, especially

petty officers, find standing in line a useful place to hold a conference. Problems concerning a difficult job are mulled over or hashed out with a concerned shipmate. When this is done, just standing in line is a rewarding experience for the individuals, the ship and the Navy.

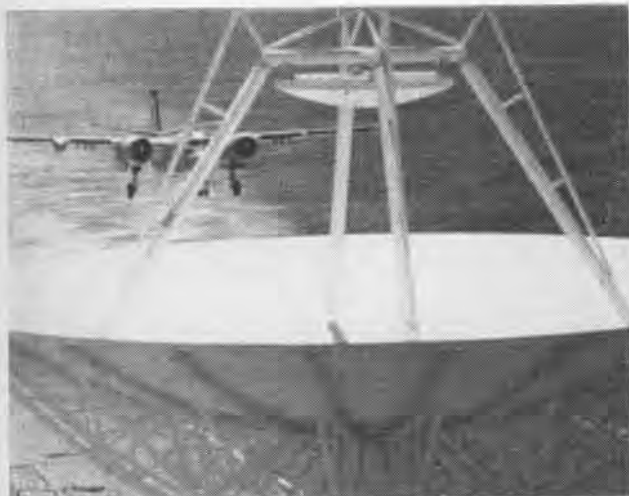
"Just standing in line is a fine and noble art that can be practiced well by the enterprising man. And the sailor who uses these precious moments wisely often finds that the line is not as long as he thought."

A LOT OF HOURS. In a "well done" message to the squadron upon reaching a 50,000-hour flight safety milestone, the VF-126 Newsletter reported the following:

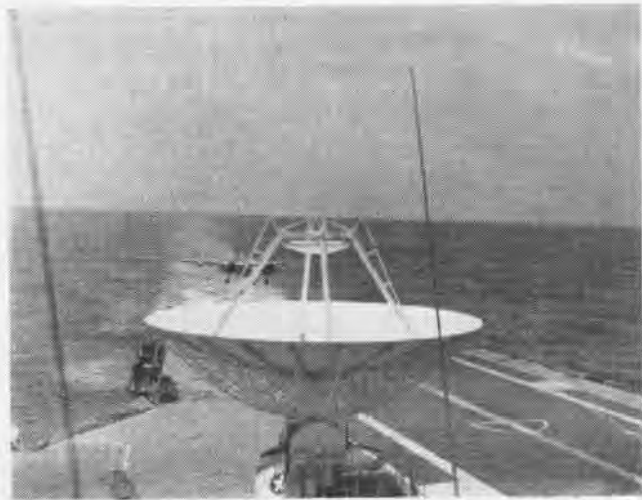
"What does 50,000 hours represent? In our business of training replacement pilots, if the average flight time per student is 20 hours, it could equal 2,500 students trained. It is 2,083 days, or 5.7 years. At a cruising speed around 700 mph, a single aircraft could travel 35 million miles, 1,400 times around the earth at the equator."

Extra-Hazardous R and R. In the Third MAF *Sea Tiger* (Vietnam) the following recreation note appeared:

"Marines stationed at the Marble Mountain Air Facility have . . . one of the most beautiful stretches of beach to be found in any combat zone. In the past few weeks, however, swimming has been a little on the hazardous side. On several occasions swimmers have had to evacuate the sea so that armed helicopters could come in and clear out the sharks."



IS THE PILOT LANDING THIS TRACKER IN A DISH?



IT'S ALL IN THE ANGLE: S-2E COMES ABOARD WASP

LETTERS

Boeing F4B Wanted

Sirs: As members of the West Coast training squadron for flight crews and maintenance men who operate the McDonnell F-4B *Phantom II* jet fighter in the Pacific Fleet, we are interested in the *Phantom's* early counterpart, the Boeing F4B biplane, flown in the early and middle '30's by the Navy and Marine Corps.

If any readers know where a Boeing F4B in restorable or flying condition is located, we would appreciate hearing from you.

DAVID A. MARTIN, LT.
Public Affairs Officer

Fighter Squadron 121
NAS Miramar, Calif. 92145

Nimitz Material Wanted

Sirs: Naval History has an excellent collection of correspondence, documents and personal memorabilia of the late Fleet Admiral Nimitz. We would like to add as much as possible to this priceless collection and would therefore appreciate receipt of any recollections, copies of correspondence, reminiscences, reflections or comments about Admiral Nimitz during any phase of his great career.

E. M. ELLER, REAR ADMIRAL (RET.)
Director of Naval History

Navy Department
Washington, D. C., 20350

New Class Supply Ship To Have Helicopter Platform

A 58-ton keel section for the USS *Wichita*, first of a new class of U.S. Navy supply ships, was laid June 16 at Quincy, Mass.

It will be the first of two auxiliary oiler replenishment (AOR) vessels that General Dynamics will build. The ship will be capable of providing one-stop replenishment for destroyers, using either modern transfer-at-sea techniques or helicopters operating from her landing-launching platform. She will carry petroleum products, refrigerated and dry provisions, consumables, ammunition, including missiles.

The USS *Wichita* is scheduled for delivery to the Navy in April 1968. She will have an over-all length of 659 feet, a beam of 96 feet, and will displace 37,360 tons fully loaded.

The ship is named for Wichita, Kans., and Wichita Falls, Texas. AOR's will be named for cities with Indian names of rivers or falls.

Navy Curator's Request Seeks Early Medals of Honor

A special collection of a number of Medals of Honor awarded to Civil War naval heroes is now on exhibition at the National Naval Memorial Museum in the Washington Navy Yard. The medals displayed are those which had not, for one reason or another, been presented to the recipients themselves or to their next of kin.

The Curator of the Department of the Navy now seeks to enlarge this collection. Because the blue ribbon from which the Navy's Medal of Honor hangs first appeared in 1913, medals awarded from that year until 1917 are needed.

Those especially desired are the rarer medals awarded for World War I because these were cross-shaped rather than star-shaped as their predecessors and successors.

Anyone who has one of these or other Medals of Honor which he is willing to place with the Curator or who knows of the location of one is urged to write to Rear Admiral E. M. Eller, USN (Ret.), Curator of the Department of the Navy, Office of the Chief of Naval Operations, Washington, D.C.

Fifth Year for a Satellite Navy's 4-A Still Transmitting

On June 29, 4-A, the Navy's experimental navigation satellite and the oldest operating satellite in space, marked its fifth anniversary

in orbit. It was the first to carry a nuclear power supply.

Experimental forerunner of the now-operational Navy Navigation System, the drum-shaped 175-pound satellite has travelled more than 724,000,000 miles and is still signalling the Navy tracking stations.

More than 200 American and foreign satellites have been orbited and ceased operation since the 4-A was boosted into space.

Research Rocket Launched Sent Aloft by Point Mugu Center

A *Hydra-Iris* rocket probe was fired early in June from Pacific waters by a team from the Naval Missile Center (NMC), Point Mugu. It carried a scientific payload to an altitude of 100 nautical miles, according to Captain C. O. Holmquist, Commander of the Center.

The operation, conducted at sea about 450 miles southwest of Acapulco, Mexico, was part of NMC's continuing investigation of the ballistic dynamics and other characteristics of water-launched vehicles. Secondary purpose of the flight was the collection of data concerning X-ray emissions from the Clouds of Magellan nebulae and from the star Alpha Centauri.

The X-ray astronomy experiment, designed and sponsored by the Lawrence Radiation Laboratory (LRL) of Livermore, Calif., provided 415 seconds of telemetered data concerning X-ray emissions.

It was the second such experiment NMC has conducted for LRL.

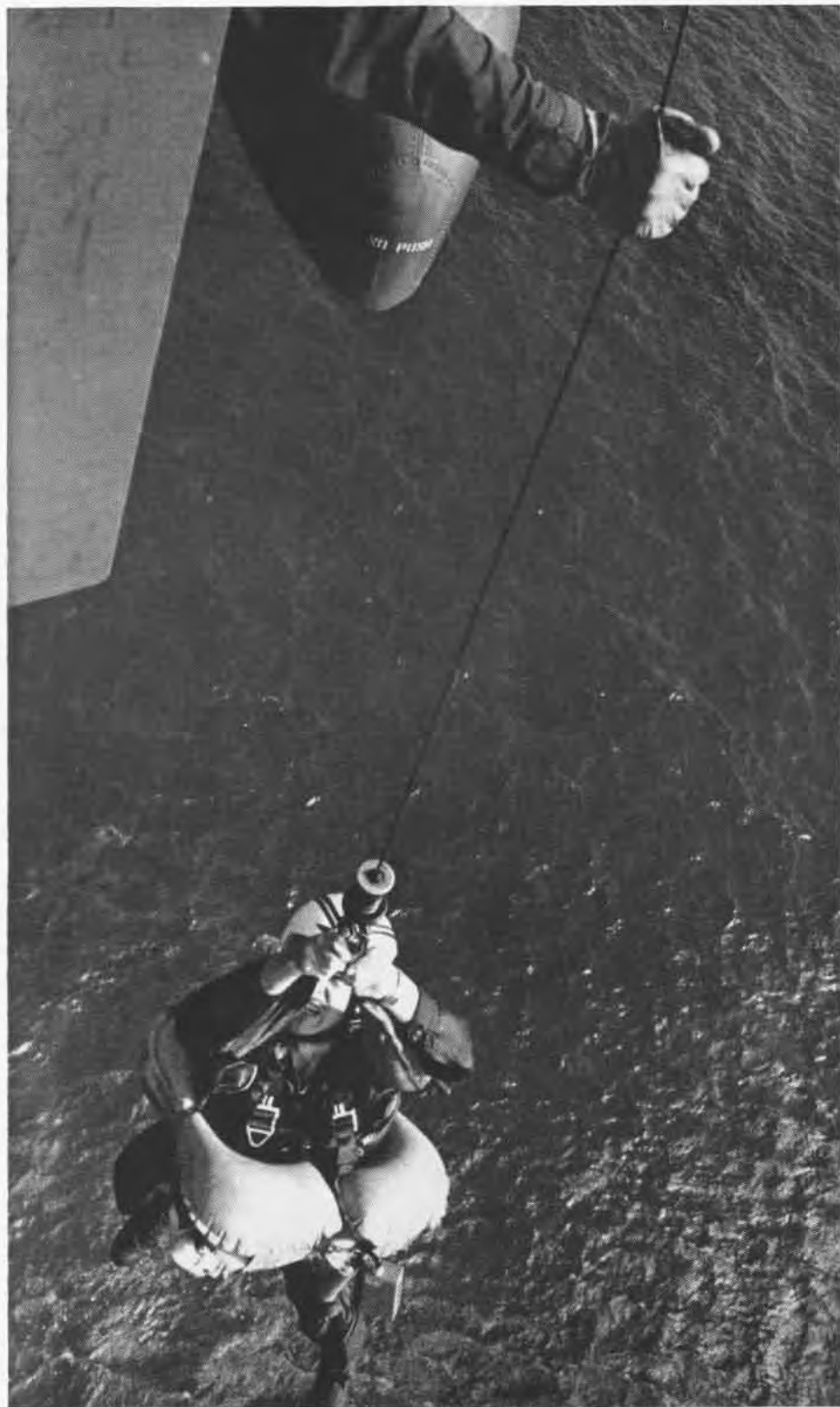


A PILOT REWORK of the Boeing Vertol H-46 Sea Knight has recently been completed at NAS North Island, and the Overhaul and Repair Department is now in full rework production of the new tandem rotor helicopter. The H-46 is powered by General Electric twin T-58-8 turbine engines which also are overhauled at North Island. The H-46 is being used in Vietnam where its rapid loading and unloading capability is vitally important.



Air Development Squadron Five develops day, night, and all-weather tactics, doctrine, and procedures for carrier aircraft and equipment. It also makes recommendations for weapons handling and delivery techniques. VX-5 is led by Cdr. A. T. Anderson.





EXPERT ON THE HOOK

An airman's survival—night or day, war or peace—depends on his own intimate working knowledge of his equipment and of rescue procedures.

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