

NAVAL AVIATION

NEWS



45th Year of Publication

MARCH 1964

NavWeps No. 00-75R-3





NAVY'S NEWEST ON THE LINE

Combat readiness of the U.S. Navy attack carrier forces will be enhanced this year with the introduction of three new aircraft to the Fleets. In the center line, top to bottom, are the A-6A Intruder, the A-5C Vigilante, and the E-2A Hawkeye. They join current aircraft of the attack carrier air wings, the A-4C Skyhawk, at top on both catapults; the F-8D Crusader, left, and the F-4B Phantom II, lower right, to add power, range and sophistication to America's deterrent forces during 1964.



Selected BEST INTERNAL PERIODICAL 1963-64 by Federal Editors Assoc.

NAVAL AVIATION NEWS

FORTY-FIFTH YEAR OF PUBLICATION MARCH 1964

■ IN THIS ISSUE

- Keeps 'em flying** 6 *The Aeronautical Engine Laboratory has contributed to the reliability of engines in Navy planes since it opened in 1917*
- From Launch to Landing** 13 *Quietly, efficiently, FAA has been modernizing its air control system and improving working conditions for air controllers.*
- Seal-Lift** 17 *Three Weddell seals from Antarctica find a new home at Coney Island.*
- Dam Neck and DASH** 19 *Detachment Two of VU-6 trains crews in the operation and maintenance of DASH.*
- They are Advanced in Texas** 20 *VT-31 is justly proud of its safety record at NAS Corpus Christi.*
- More Safe Flying** 22 *VT-28 also racks up an enviable safe flying record.*
- Hercules** 24 *The C-130 Hercules is inducted into the Navy's Atlantic Air Transport Wing.*
- E?** 28 *What is an E? VA-176 describes it in a two-page picture spread.*
- First of its Kind** 37 *Installed at NAS Willow Grove, Pa., is a prototype hydraulic GCA turntable.*

■ THE STAFF

Capt. Cecil E. Harris Head, Aviation Periodicals Office



Cdr. Paul Jayson Editor
 Izetta Winter Robb Managing Editor
 Lt. Rosario Rausa, Associate Editors
 Scot MacDonald, JOC
 Cdr. Mack Wortman, Contributing Editors
 Harold Andrews
 Janis C. Burns Assistant Editor
 James M. Springer Art Director

Issuance of this periodical approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS, P-35.

■ COVERS

Formation instructors from Training Squadron Three at Naval Air Auxiliary Air Station, Whiting Field, Florida, are the pilots in the spectacular Diamond Formation Team shown on the front cover. The team was organized in April 1962. . . . Aircraft on the USS Saratoga are featured in the picture shown above.

Published monthly by Chief of Naval Operations and Bureau of Naval Weapons to disseminate data on aircraft training and operations, space technology, missile, rocket and other aviation ordnance developments, aeronautical safety, aircraft design, power plants, aircraft recognition, technical maintenance and overhaul procedures. Send mail to Naval Aviation News, OP 05A5, Navy Department, Washington 25, D.C. Office located at 3704 Main Navy Bldg.; telephone Oxford 62252 or 61755. Annual subscription rate is \$2.50 check or money order (\$1.00 additional for foreign mailing) made payable and sent to Superintendent of Documents, Government Printing Office, Washington 25, D.C. Single copy costs \$25.



NAVAL AVIATION NEWS

America CVA-66 Launched Carrier to be Completed in 1965

On February 1, the eighth post-WW II attack carrier, USS *America* (CVA-66), was launched at Newport News, Va. Mrs. David L. McDonald, wife of the Chief of Naval Operations, sponsored the new ship. Secretary of the Navy Paul H. Nitze was the principal speaker.

The contract for the construction of *America* was awarded in November 1960. The keel was laid January 6, 1961, and the ship is expected to be completed in early 1965.

America has an overall length of approximately 1048 feet, a flight deck breadth of 252 feet, and will have a full load displacement of more than 77,000 tons. When operational at sea with air wing embarked, she will have a complement of 4900 officers and men.

She will carry surface-to-air *Terrier* missiles, the Naval Tactical Data System (NTDS), long range radar installations, a bow-mounted sonar for submarine detection, and an automatic landing system.

The new carrier will have four steam catapults and four deck-edge elevators. Her conventional power plant will deliver 200,000 shaft hp to propel her at speeds in excess of 30 knots. USS *America* will join the *Kitty Hawk*-class attack aircraft carriers.

Legless Aviator Honored Given Distinguished Flying Cross

Lt. Frank K. Ellis, Navy pilot who suffered the loss of both legs in a plane crash 20 months ago, received the nation's third highest peacetime award January 3 at NAS NORTH ISLAND. The Distinguished Flying Cross was presented by VAdm. Paul D. Stroop, Commander of Naval Air Force, Pacific.

Lt. Ellis received the DFC for heroism displayed on July 12, 1962. While flying an F-9 *Cougar*, he had mechanical trouble over a populated area. He elected to remain with the aircraft to insure that it would not crash in a residential area. He finally ejected from the plane while 65 feet above the ground, 235 feet under the minimum required for his parachute to open fully. The native Ohioan lost one leg during the ejection and was taken, critically injured, to a hospital where the other leg had to be amputated.

Lt. Ellis was determined to regain flying status. To attain his goal, he travelled to Pensacola, Fla., where, under the supervision of flight surgeons, he completed numerous tests, both physical and flight. Thus far, he has achieved limited flying status, but he is still seeking permanent status. Still and

motion picture photography, along with written reports of the Pensacola tests, are in the hands of BUMED for final judgment.

Another honor was conferred upon Lt. Ellis last December. Mutual of Omaha gave him the company's Public Service Award, consisting of a commemorative plaque and \$1000. The citation for "the heroic maneuver which resulted in the loss of both legs" included the statement that he had become "a symbol of encouragement to every person whose life may be affected by some sickness or injury."

AZ Rating Class Started Course Taught at Memphis Center

A training course for Aviation Maintenance Administration men (AZ) began in January at the Naval Air



AS FAMILY STANDS BY, LT. FRANK ELLIS RECEIVES CONGRATULATIONS OF VADM. STROOP

Technical Training Center, Memphis. A group of 23 sailors and marines made up the first class for the six-week course.

The new rating was established in the Navy after a survey of aviation units indicated a need for greater specialization in handling aircraft maintenance records. Students come from both the Fleet and recruit training centers. They must have a high combination of mathematical and clerical skills in order to be selected for the course.

Classes include instruction in typing, aircraft publications, maintenance systems, aircraft and engineering accounting, logs and records, and maintenance administration and operations.



LTJG. BARBOUR IN SEAT OF 5-2A TRACKER

Coast Guard Meets Mark 1000th Naval Aviator Designated

Since the day that Elmer F. Stone became the first Coast Guard Officer to win the Navy Wings of Gold shortly before World War I (Naval Aviator #38), Coast Guard Officers have continued to train with the Navy in order to obtain their wings.

In January, Ltjg. Matthew J. Barbour, Jr., became the 1000th Coast Guard Officer to be designated a Naval Aviator. Capt. F. K. Upham, commanding NAS CORPUS CHRISTI, presented the wings and, in a brief but proud ceremony, the pilot's wife, the former Toni Marie Girard, pinned the new-won wings on him.

Barbour is the son of a retired Navy Warrant Officer and was graduated from Admiral Farragut Academy, Pine Beach, N. J. In 1956, he entered the Coast Guard Academy, graduating in 1961 as president of his class and recipient of a Bachelor of Science degree.



NAVY'S VAW-11, Capt. Martin "Butch" O'Neill commanding, took delivery of the first Pacific Fleet E-2A Hawkeye at North Island in January. The aircraft, flown from Grumman's Long Island plant, will be used to train flight crews and maintenance personnel. The E-2A (rear), a replacement for E-1B Tracer (foreground), is a carrier-based Early Warning Attack and Intercept Control System which provides an umbrella of protection against attacking aircraft.

He served aboard the USCGC *Sassafras* (WAGL-401) until September 1962 when he entered flight training. After basic flight training at NAS PENSACOLA, he proceeded to Corpus for multi-engine advanced training.

He is now serving with the Coast Guard Air Detachment, San Juan, P.R.

LTV Wins A-7A Competition New Light Attack Craft Scheduled

The Navy has selected Ling-Temco-Vought, Inc., Dallas, Texas, as the winner of the design competition for a new, heavier-than-air light attack aircraft (VAL). The design selected is a version of the same company's F-8E *Crusader* with a new engine. Design proposals were submitted by Grumman, North American, Douglas and LTV.

The light attack aircraft is designed to supplement and eventually replace the Douglas A-4E *Skyhawk*. It will be designated the A-7A.

It will be powered by a modified non-afterburning version of the TF-30 engine to be employed in the F-111. This change and other design improvements will give the new aircraft approximately double the range of the A-4E and allow substantially greater payloads at any given range.

Decision to build such a plane was

made when studies made in 1963 showed that the A-4 did not fully meet the Navy's present needs. As originally conceived in the late 1940's, the A-4 was designed to deliver—at the least possible cost—a single nuclear weapon. In the face of an increasingly important limited war role for the aircraft carrier, it was decided that the Navy needed a more versatile aircraft with a greater non-nuclear capability. It was thus decided that what was needed was a light attack aircraft built around an existing Navy airframe.

Martin Builds ASW Kits Used for Submarine Detection

The Navy C-121 *Super Constellation*s, which for many years have patrolled U. S. shores to provide early warning of air attack, are receiving the added capability of submarine detection.

Under contract with BUWEPs, Martin Company's Electronic Systems and Products Division is building kits for the Navy which will modify the aircraft for anti-submarine operations.

Martin Company modified the first *Super Connie* and flight-tested the equipment. The easily installed kits, 53 in all, are being shipped to rework bases. After modification, the aircraft is officially designated as EC-121P.



GRAMPAW PETTIBONE

Simulated Takeoff

A young Marine lieutenant had just reported to his squadron in Hawaii and was in the process of getting checked out in the F-8B *Crusader*. He attended squadron lectures, ground school and flew an instrument hop prior to his taxi practice-simulated takeoff hop in the *Crusader*.

After a thorough cockpit check and emergency procedures brief by the check pilot, he cranked his bird and taxied out. Upon reaching the Hot Brake area, the pilot decided to lower and lock the variable-incidence wing to cycle the hydraulic fluid. He then completed his check-off list and called the tower for permission to take the runway. The tower operator cleared the pilot for an aborted takeoff and informed him that his wing was down. The pilot acknowledged the transmission with the intention of raising the wing after line up. However, after line up he ran up to military power and released the brakes.

The pilot allowed the aircraft to reach 105 knots before retarding throttle and attempting aerodynamic braking. Over-rotation resulted in dragging the tailcone on the runway and normal braking at approximately 85 knots had little effect on the heavy *Crusader*. The aircraft continued off the end of the runway, over the sea wall, into the blue Pacific. An uninjured, but totally confused, aviator vacated the cockpit and was assisted



through the surf to the beach by the crash crew.



Grampaw Pettibone says:

Fetch me another aspirin tablet! This lad completely ignored the sage observations of a sharp tower operator and blasted down the runway with the wing locked in the down position. Makes me mighty ill when a pilot refuses to use that check-off list.

Even after he realized the aircraft wasn't slowing the way it should, he failed to use all slowing/stopping means available, such as securing the engine, lowering the hook, emergency brakes and, as a last resort, raising the gear.

Use of the CHECK-OFF list and a thorough knowledge of emergency procedures are a **MUST** in this business.

Mid-Air Mess

An O&R test pilot was conducting a routine test flight in an A-3B when he noted an unsafe indication on the port main gear. Aware that other test flights were airborne, he called for someone to inspect the gear in the air. An A-4B pilot heard the request and charged over to join on the A-3B for a visual gear inspection.

The A-4B pilot approached the A-3B from the rear and informed him that he had joined aft and would approach from that position for the inspection. The A-3B was flying straight and level at 12,000 feet, 260 knots. The weather was low overcast with tops around 2000-3000 feet, and a broken overcast with a base of 15,000 feet and a visibility of seven or eight miles.

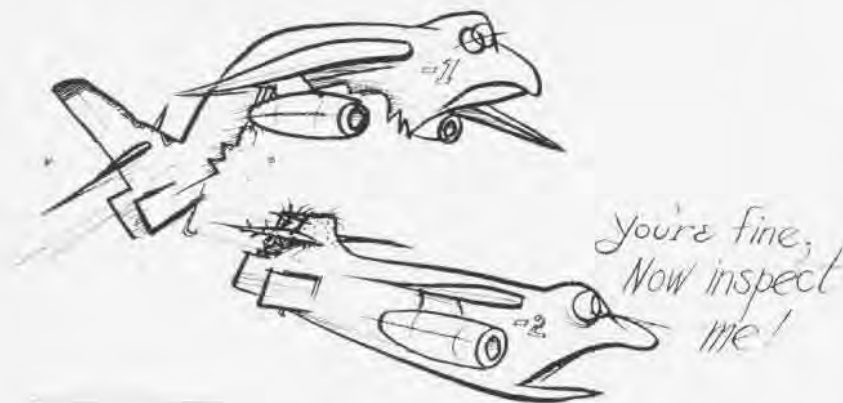
The A-4B descended to about 30 feet below the A-3B in the approach to make the inspection and was closing very rapidly when suddenly the pilot realized he was much too close. He reduced power and pushed the stick forward. Almost immediately the A-4B pilot felt the shock as the tail section of his aircraft contacted the bottom of the A-3B nose section.

The pilot of the A-4B received a severe jolt which threw his head to the right side of the cockpit and his feet and legs to the left. Evidently his seat belt was loose, for his seat pack was displaced to the left and he was sitting at a 20 to 30-degree angle. The A-4B pilot regained control of his aircraft and inquired as to the condition of the other aircraft. The A-3B was substantially damaged, but the pilot had no difficulty controlling it and proceeded back to the home base where he made an arrested landing on a foamed runway.

At this point another test pilot in an F-9E on the same frequency called to see if he could be of assistance. Very shortly he joined on the A-4B and informed the pilot that most of the vertical stabilizer, rudder and starboard horizontal stabilizer was missing.



Our Crusader friend probably thinks something will stop him!



With this information, the pilot proceeded to check the flying characteristics of his aircraft. In spite of considerable vibration and a severe yaw, he was able to maintain control at 225 knots clean and 185 knots with gear down.

The pilot would probably have ejected, but he was not sure the seat would operate satisfactorily. He thought it might have twisted in the rails when his seat pack was displaced by the impact. He elected to attempt a landing at a nearby Air Force base and, after broadcasting a Mayday, informed the base of his intentions. En route he experienced electrical and radio failure, but the F-9E pilot who was escorting him informed the Air Force tower of the damaged aircraft's position and intentions.

The A-4B pilot made an approach in excess of 200 knots over an unpopulated area in order to be able to abandon the aircraft should it become necessary. Touchdown was accomplished at about 185 knots, but the aircraft immediately started a swerve to the left and became uncontrollable, so the pilot added full throttle to initiate a wave-off. The aircraft vibrated violently during wave-off, but the pilot managed to get it to an altitude of 2000 feet over an unpopulated area at a speed of 225 knots. He ejected by pulling the curtain with his left hand while holding the stick with the right. The RAPEC seat operated as advertised with the pilot landing safely in an open field.



Grampae Pettibone says:

If this fiasco wouldn't wilt the lily, nothin' would! Landing gear

indication discrepancies are rather common occurrences on test flights and all pilots assigned to this type duty are thoroughly briefed on correct procedures to be used when making an in-flight gear inspection. It should be common knowledge that an area of turbulent air with a suction-like effect will be encountered in close, and can be extremely hazardous if not handled just right. At no time should a rapid closing situation be allowed to develop during rendezvous on a different model aircraft.

Although this pilot had been adequately briefed and possessed the skill to accomplish the job, nothing can replace good judgment based on basic fundamentals and airmanship, a professional approach to the problem and headwork.

Professional Pilots

A flight of three A-4C's departed an East Coast air station for refresher landings aboard a CVS. After the initial landing, the lead aircraft was taxied to the #1 catapult for launch and a second landing.

The pilot was given the brakes off, 100% signal, went over his T.O. check list and lowered his seat. He noticed his RPM and TPT to be 96% and 560° and was about to shut down when he noticed the RPM and TPT stabilize at 100% and 600°. He then saluted the catapult officer and was launched.

While attempting to rotate after the launch, the pilot noted his RPM and TPT to be 95% and 550°. Shortly thereafter he felt the wings wobble and the air frame buffet. He also heard someone say, "Pull it up," over the radio, so he immediately pulled the face curtain.

The plane guard helicopter was over

the pilot in 30 seconds and had him safely aboard in only two minutes.



Grampae Pettibone says:

Well, bust my buttons! This Skyhawk pilot was in a tight spot and didn't have much time to react, but that RAPEC seat sure is great to have around at a time like this.

The helicopter crew fought a 32-knot wind and 10-foot waves to fish the pilot from the water.

We'll just bet this lad had no idea when he was spotted on the cat that in less than six minutes he would have successfully ejected, been picked up by an SH-3A and safely deposited back aboard the ship.

This jet pilot did everything just right after he elected to eject, and the reason for this is his squadron covers one A-4C emergency procedure during each preflight briefing. It takes about one month to cover them all, then they start over again. Each squadron pilot is also required to take a flight simulator hop each month. This gent had a "stall at low altitude" emergency in the simulator about a week prior to the accident.

You have to hand it to that helo crew for a fast and efficient rescue. An Air Force pilot, who was aboard the carrier and saw the ejection and pick-up, remarked, "That helo crew can get ahead of me in the pay line any day!"

It does ol' Gramps' heart good to see training pay off this way. These lads can rest assured that their names have been added to the "Real Pro" roster. That roster is beginning to swell lately and ol' Gramps' shirt size gets a little bigger each time I look at it.

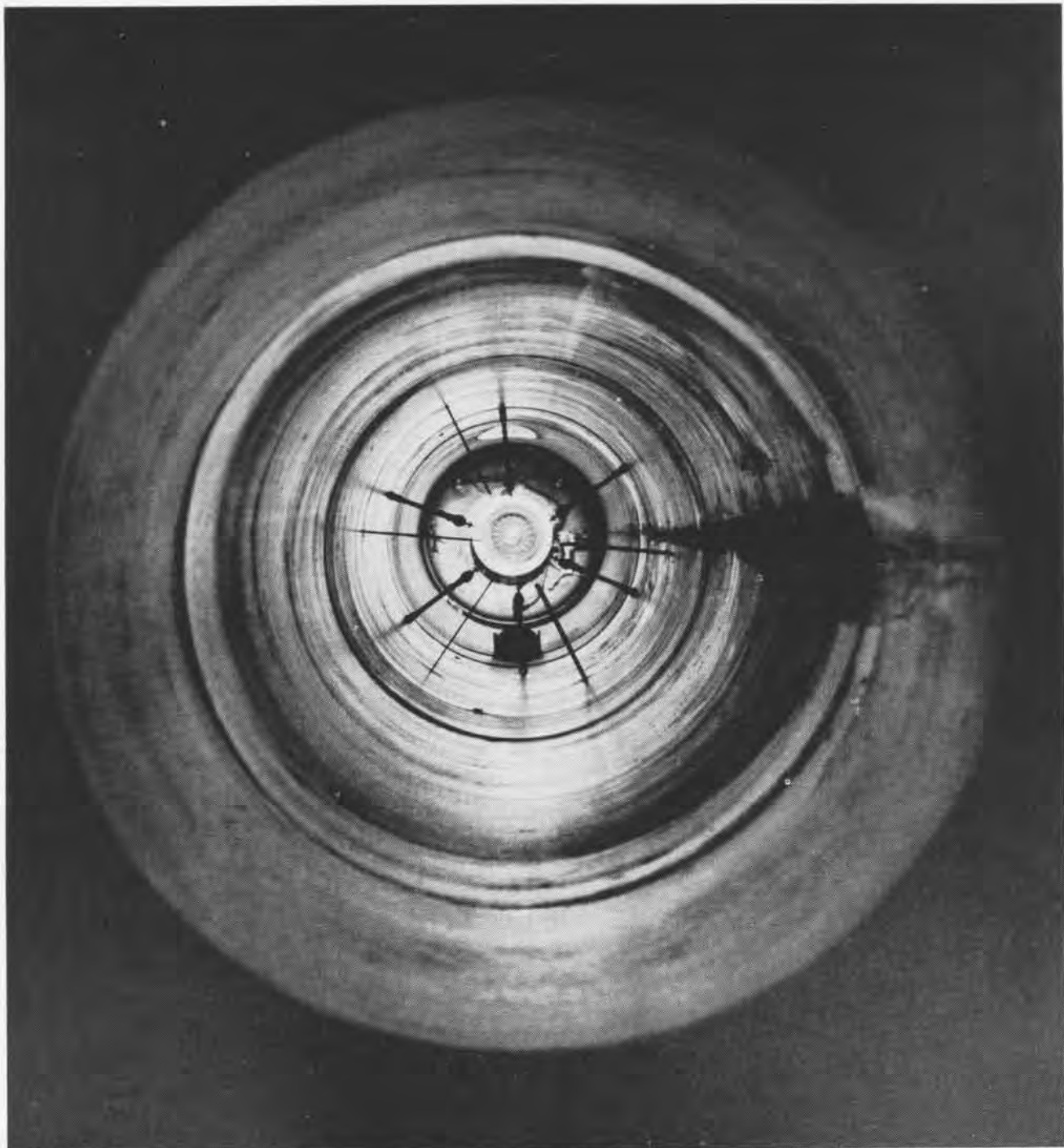
Memo from Gramps

These old eyes may be burning from reviewing carbon copies of Helicopter Rescue Reports, but they sure twinkle when they see that most all of our rescue crews know their business so well. Just as gratifying is the fact that nearly all the pilots and crewmen who suddenly find themselves in the pond are so well checked-out in the use of their safety/survival equipment.

It gives me cold chills to read about a lad who didn't know how to get in the sling or failed to use the survival equipment properly. Now there is really no excuse for this kind of thing to happen. We fly with the best equipment available and not to know how to use it properly is downright stupid. If you don't know all there is to know about your survival equipment, you're gambling with a life—YOUR OWN.

ACCENT ON RELIABILITY

How scientists and technicians at the Aeronautical Engine Laboratory, Naval Air Engineering Center, Philadelphia, Pa., contribute to the reliability and top-operating quality of the Navy's airplanes and helicopters is described by LCdr. J. W. Morrison, AEL's Plans and Program Officer.



THOSE DEVICES which can possibly test the qualities of an engine are to be found in the Aeronautical Engine Laboratory. In this dramatic shot, one looks into the intake duct of a turboshaft engine, a T-50, as it is being put through an extensive icing evaluation program.

RELIABLE AIRCRAFT engines have been the goal of the Aeronautical Engine Laboratory for the past 46 years. Known to all other Navy activities throughout the years as AEL, the laboratory has not rested on its laurels. It continues to solve the Fleet's problems of today with an outlook towards problems that may occur tomorrow.

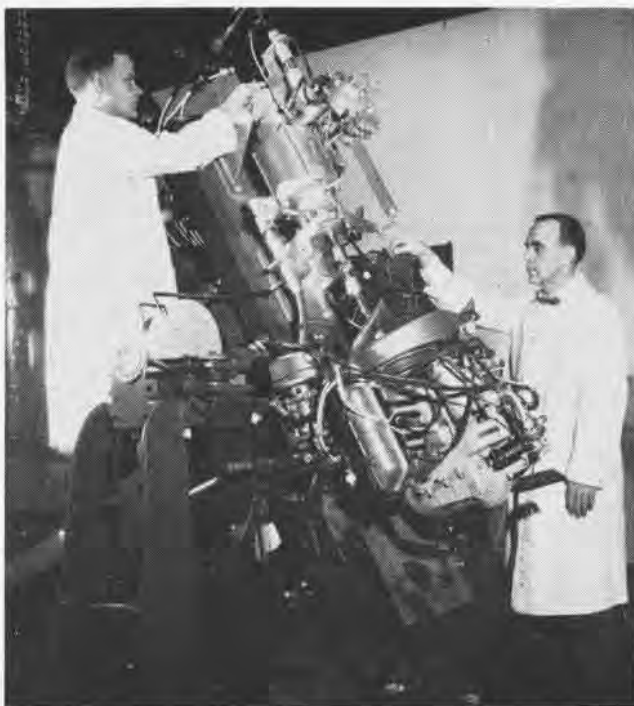
AEL has contributed to the reliability of the engines used in naval aircraft since it opened at the Washington Navy Yard in 1917. In 1924 it moved to its present location at the Naval Base in Philadelphia as part of the Naval Aircraft Factory. The Aeronautical Engine Laboratory is now one of five laboratories attached to the Naval Air Engineering Center (NAEC). The former identity (Naval Air Material Center), which does not reflect the major function, Research & Development, was changed to NAEC as a result of the efforts of Capt. S. R. Ours, Commanding Officer.

The Bureau of Naval Weapons, Power Plant Division, provides most of the problem assignments for AEL. The present mission of AEL is to conduct research, development, evaluation and special tests of aircraft powerplants, their components, related accessories, fuels and lubricating oils. It also conducts theoretical studies and experimental investigations to develop new techniques in determining requirements for incorporation in specification and standards used in the procurement and performance of this equipment. AEL also assists BUWEPs in planning future powerplant needs and provides technical advice to the Fleet, BUWEPs, and other government agencies.

Cdr. G. H. McCormick, Director of the Laboratory, heads an organization of approximately 300 civilians, of whom 80 are engineers. The rest are technicians who have a specialized background in powerplant and associated accessories test work. The engineering staff is headed by a Technical Di-



TECHNICIANS ARE involved in checking a test cell which will evaluate JP-5 fuel plus an additive for the J-65-W-4B engine bearings.



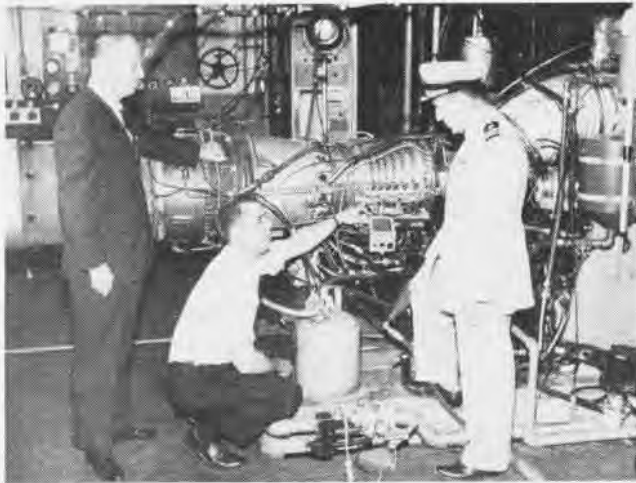
A PORSCHE ENGINE is mounted on a variable-attitude test stand which utilizes waterbrake arrangement to absorb the power during the test.

rector, Mr. G. L. Sanwald, who has contributed materially to many of the laboratory's advances through the years.

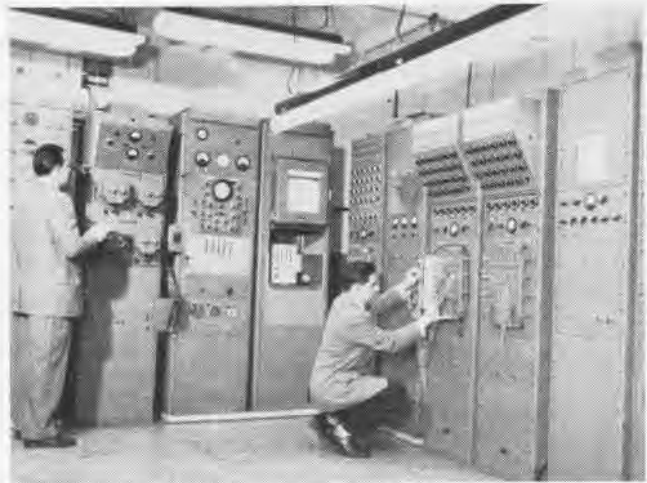
The main laboratory facility consists of 82 test areas plus machinery spaces and supporting shops. The most important plant facility serving the test areas is the extensive distribution of refrigerated air and exhauster systems for simulating altitude conditions in the test cells throughout the laboratory. These massive plant facilities, resembling a Hollywood set in size, throb daily to fulfill the requirements demanded by each of the engineers involved in the various Research & Development and Evaluation programs for the Power Plant Division of BUWEPs.

These air systems are interwoven through a maze of altitude chambers for gas turbine engines, dynamometer rooms, test cells, icing and air conditioner facilities, environmental chambers for auxiliary powerplants, ground support equipment and fuel controls, and fuels, lubes and combustion research rigs. Air pressure and/or temperature simulation of high Mach ram, arctic conditions, and altitudes, all are available at the laboratory.

Constant attention to the upkeep and refinement of plant facilities has enabled AEL personnel to keep ahead of the pace of progress in the evaluation of engines and their components. Several innovations accomplished recently by laboratory personnel have resulted in major augmentations to the plant test capacity at minimum expense with a net major savings in cost to the Navy. For example, the altitude test capability was extended from 60,000 feet to 80,000 feet. This increase in airflow capacity was realized by adapting a surplus J-46 jet engine to augment plant machinery at a net saving of approximately \$500,000 over comparable commercial machinery. Another obsolete J-48 jet engine was used in somewhat similar fashion to augment the high ram pressure required for the high power turboprop engines.



THOMAS BYRNE points to variable geometry section of compressor on T-64 to Cdr. McCormick, Director, and Mr. Sanwald, Technical Director.



WITHOUT COMPUTERS, research would be slowed immeasurably. Fuel controls are dynamically tested as computer simulates engine operation.

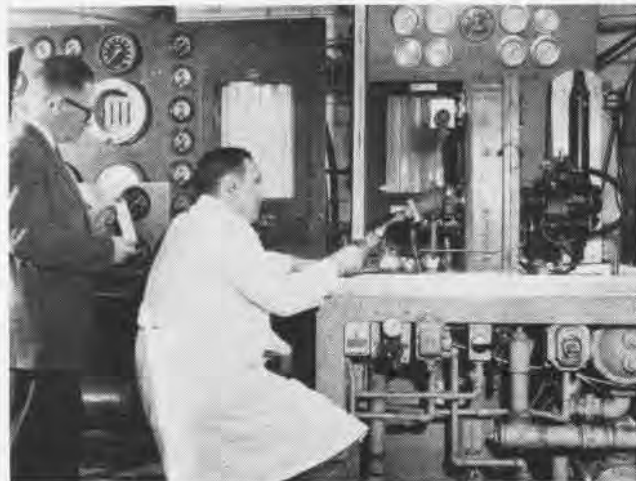
The new system enabled AEL to operate the T-56 engine at a power of over 4200 horsepower in evaluating the engine's performance for use in P-3A and E-2A aircraft. A comparable commercial equivalent is estimated at \$350,000.

To keep pace with progress and modernize its facilities, AEL has recently been given a significant assist by BUWEP's approval of a Centralized Automatic Data Recording System. This will enable the laboratory to provide faster, more accurate results in its engine-testing programs. The new system will automatically acquire, process and record large quantities of engineering data resulting from the environmental testing of aircraft powerplants and their components. A typewritten record containing complete historical and performance data will be presented to the test engineer within three minutes after activation of the recording system. In addition, a permanent graphic display of any pre-selected engine parameter or performance variable will be presented on a digital plotter. The advantages of the new system over the photographic/recorder/slide rule methods are immediate decision-making capacities, increased accuracy, increased report output and an increase in the

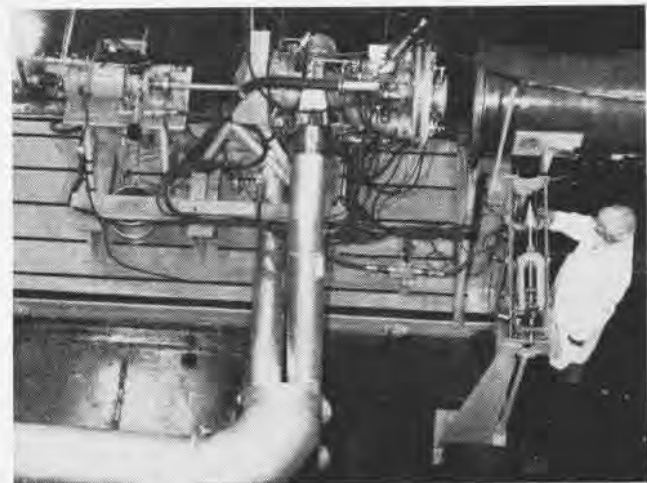
number of projects processed by the engine laboratory.

An AEL engineer candidly described his version of the laboratory's function recently by saying, "If it's in a naval aircraft, you name it and we can test it. We aim to make it more reliable for the Fleet." His statement reflects a great deal of engineering history, for in its efforts to improve the reliability of aircraft powerplants and associated equipment latent deficiencies very often are discovered. Corrections are at once effected.

Recent efforts toward reliability assurance are exemplified by the evaluation and development program of the YT-64 gas turbine engine. Two years of test work on this 2800-horsepower engine have demonstrated a versatility which has extensive military applications. This fact is evidenced by its selection for use in *Caribou II* and XC-142A, VTOL tri-service aircraft, and the CH-53A heavy assault helicopter. To ensure satisfactory engine performance before actual flight tests, altitude investigation tests were performed in an environmental chamber. These subjected the engine to temperature and pressure conditions simulating the environment at altitude. Engine starting at simulated altitude condi-



A MAZE of piping and dials is essential in the Vickers fuel control and simulator test stand, used to evaluate fuel system components.



PAST RESEARCH at the Mt. Washington Icing Test Facility is the basis for the design of equipment used for icing tests on various engines.

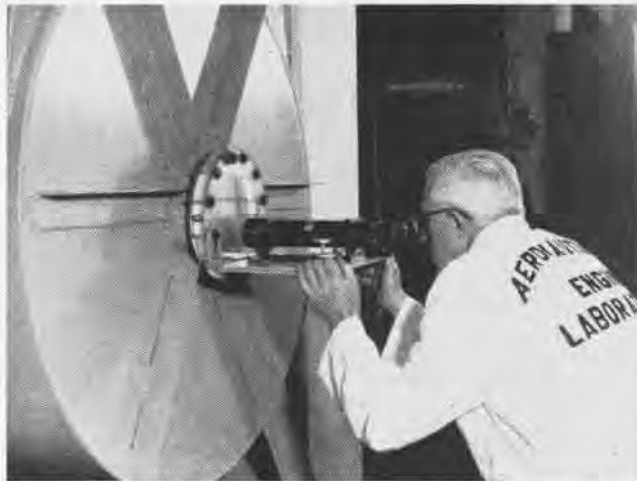


THIS INTRICATE jet engine oil system simulator provides, at reduced expense, the same results to be obtained in full-scale engine tests.

tions was also conducted along with sea-level-starting tests.

Following these tests, the rigorous military specification cycles conducted at extreme environmental conditions were completed. Evaluation of the engine and its components under icing conditions also has been a task of AEL in which testing under extreme temperature conditions was required. AEL's latest contribution to the YF-64 program was to study the performance of a regenerator unit which heats compressor air by efficient recirculation of exhaust gases to improve the engine cycle efficiency and decrease the engine's low power fuel consumption.

Helicopter pilots flying the SH-3A, CH-46A, and UH-2A aircraft can thank those unnamed AEL engineers who discovered deficiencies in the automatic starting characteristics of the T-58-GE-8 turboshaft engine under extreme temperature conditions. A secondary fuel control system was designed by the manufacturer using control parameter relationships developed by AEL during its comprehensive testing program of the T-58 engine. Tests with the new fuel control system indicate that successful automatic starts can now be obtained under all starting conditions en-

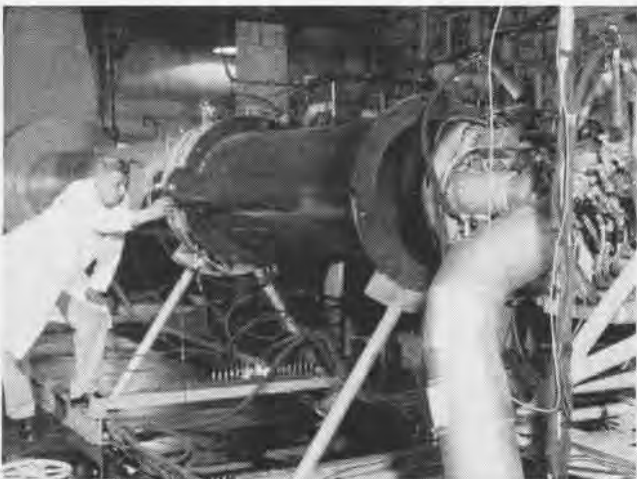


DURING ICING TESTS of a Boeing T-50 engine, the technician regularly observes, through special apparatus, the extent of the ice build-up.

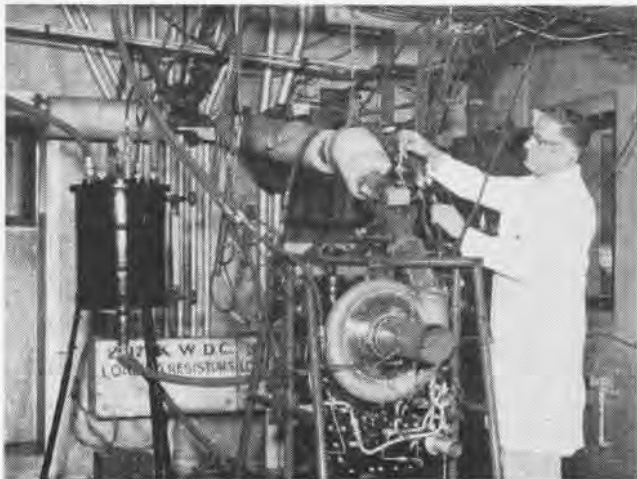
countered at sea level. Work is now continuing on improving the engine's starting reliability with the use of JP-5 fuel at altitude conditions.

Many factors entered the picture during AEL's participation on the T-50-BO-4 turboshaft engine now in use for the DASH vehicle, a drone helicopter. In this case, a reliable engine had to be assured under the most adverse conditions that could be encountered since no pilot would be aboard the helicopter itself to provide the minor adjustments needed for smooth operation. The engine was literally "wrung out" by AEL over its complete operating envelope.

This "wringing out" included starting tests, operation in hot and cold environments, tests of water ingestion, operation under icing conditions and also tests in which the engine's operation was evaluated while using deliberately contaminated fuel. During the performance evaluation, numerous discrepancies were uncovered. Recommendations for methods of eliminating these problems, many peculiar to military operations, along with supporting data, were provided the manufacturer. These should result in a more reliable powerplant and an improved mission capability.



ANOTHER TECHNICIAN adjusts the closed circuit television camera which is used to monitor engine inlet condition during a Boeing T-50 test.



TEST INSTRUMENTATION is being installed in order to test an AiResearch Air Turbine Motor. Two ATM-50's are used in each A-3 Skywarrior.



AN R-1820-84 engine is mounted at helicopter flight operating angle. An R-3350 nose gear serves to adapt a propeller for power absorption.



HOURS OF WORK are involved in instrumenting and inspecting engines and propellers. These technicians are moved to task by hydraulic lifts.

ENVIRONMENTAL TESTING has long been a specialty of AEL since the laboratory conducted the first simulated altitude test on air-cooled engines in this country in 1936. This feat was followed by the first simulated altitude test on a turbojet engine in this country in 1943. Research work at the Mount Washington Icing Test Facility enabled AEL to devise methods of effective simulation of environmental conditions at altitude inside its own laboratory.

Fuels and combustion have always been a matter of constant concern to aviation maintenance personnel. To eliminate one doubt in the mind of the fuels control officer aboard our aircraft carriers, AEL developed a simple, easy-to-use, portable, contaminated-fuel detector, so that the integrity of fuels being dispensed could be immediately detected while a carrier is underway, miles at sea. The laboratory also developed a new combustor for the GTC-85-72 auxiliary air compressor unit (used in starting most jet aircraft) to enable it to operate on both JP-5 and JP-4 fuels. The unit did not operate satisfactorily on JP-5 fuel in that it could not be started at cold temperatures and also formed excessive carbon deposits during operation. The combustor developed by AEL eliminated these deficiencies and also provided satisfactory operation on JP-4 fuel.

In the course of carrying out BUWEPs' problem assignments, AEL personnel have also accumulated experience in areas of combustion; for example, the design of afterburner combustion systems, instrumentation in combustion research, the structure and propagation of flames, ignition and limits of flammability, and the combustion of special fuels.

AEL's efforts in the lubricant field supported BUWEPs' development of an improved dispersant type oil for reciprocating engines by developing specification tests; performing engine tests which revealed that engine deposition and maintenance were decreased; and performing chemical analysis on the resulting oil samples which revealed that a significant reduction in oil deterioration had occurred. As a result, an appreciable reduction in maintenance expense is expected with an anticipated improvement in engine overhaul life.

Fuels and lubricants have so long been considered as separate entities in the past that the average aircraft mechanic would shudder at AEL's test work using fuel as a lubricant. An operational jet engine was operated for 100 hours using JP-5 fuel plus an additive to lubricate the engine roller bearings. In order to simulate the extended periods of actual engine operating conditions in supersonic flight, the engine's bearings were operated at the manufacturer's maximum allowable temperature of 500°F. Research engineers point out that lack of cooling capability in supersonic flight is what makes this experimental lubricating system significant. Additional tests are underway to evaluate this experimental system to provide a system of this type to lubricate the entire engine.

MANY NAVAL AVIATORS, while flying ASW missions or other missions containing lengthy "on-station requirements," have often gazed out of their cockpit and mused on how the wasted hot exhaust gases escaping from their engine could be utilized more efficiently. The answer may soon be forthcoming in the form of a regenerative turboprop engine, the latest innovation in aircraft propulsion which is designed to provide better economy than piston engines while weighing only half as much. This milestone

in engineering concepts is accomplished by a process of efficient routing of turbine exhaust heat to increase compressor discharge air temperature and employment of higher inlet temperatures. This process, called "regeneration", has been applied to several engines at the request of a BUWEPs study proposal in which the first regenerative components were tested environmentally at AEL. Development of an engine to fulfill the Navy's requirements will necessitate an extensive five-year testing program at AEL.

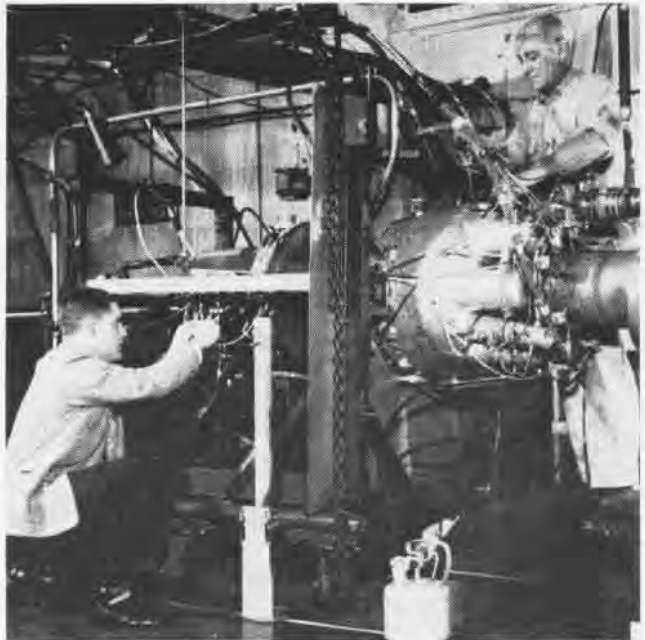
Discrepancies in components also monitored by AEL recently included the investigation of a high failure rate of F-8C aircraft air conditioning units. To reduce the failure rate of these units, BUWEPs requested AEL personnel to coordinate the efforts of the aircraft manufacturer, the unit manufacturer, and naval squadron personnel to improve the reliability of the air conditioning units. After conducting laboratory tests and analyzing data received from service activities and flight tests, a Navy-Industry conference was conducted at AEL in which an improvement program recommended modifications to maintenance and overhaul procedures, improvements in trouble-shooting methods, and a change in the unit lubricant.

SATS (Short Airfield for Tactical Support) program requirements found AEL's engineering talents assuring that T-34 turboprop engines would provide a reliable power source for the launching system. Obsolete T-34 turboprop engines were secured by SATS program project managers of the Naval Air Engineering Laboratory, NAEL (SI), from surplus engine dealers because new engines were nonexistent. Restoration and calibration of these 5500-hp engines was accomplished in AEL test cells.

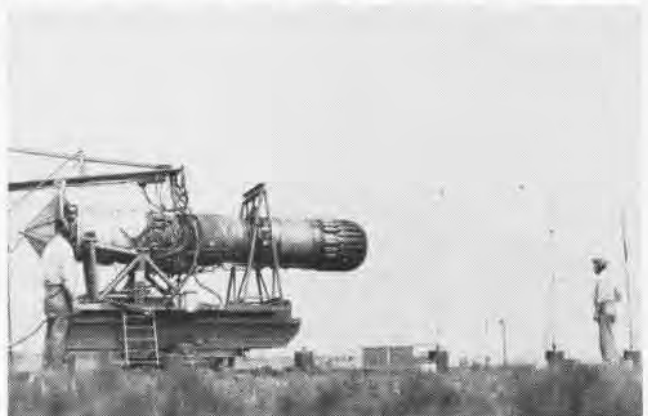
Re-ignition problems have long plagued aviators since the installation of jet engines in naval aircraft. Compressor surge blowout problems encountered by missile firing or unusual maneuvers at altitude were eliminated by an oxygen injection system developed by AEL. The system also extends the maximum altitude capability of the J-79-GE-8 engine.

Ignition systems are also included in the spectrum of engine improvements. A new Breakerless High Frequency Ignition System was evaluated in full scale engine tests at AEL. The system was designed to reduce the service maintenance required and to improve the operational reliability over present breaker type ignition systems installed on reciprocating type aircraft engines.

An AEL test mechanic who retired with 37 years of service with the laboratory, recalls, "I have seen many different types of engines come through this shop, each becoming more complicated than the previous model. I recall the engine we tested for Lindbergh's trans-Atlantic flight in 1927. We ran his engine non-stop for 50 hours and called it a reliable engine. I have seen the Fleet's engine problems get tougher every year, but we never failed to come up with a solution. I recall when Adm. Soucek (then Lt. Soucek) made his altitude-breaking flight in a turbo-supercharged engine. We tested it and said it was O.K. We even provided him with heated goggles because he informed us that his goggles fogged up at altitude. I get a lot of satisfaction knowing how often we have provided more reliability to the engines and components our boys are using in the Fleet." It appears that the future of the Aeronautical Engine Laboratory will be as fascinating as its history.



TECHNICIAN CHECKS installation to test gas turbine engine set up for sea-level endurance. Engine is used in ground support of A-5 and F-4.



NOT ALL the test work of the laboratory is inside. Here a Pratt & Whitney J-75 engine is being prepared for "near field" noise tests.



AEL UTILIZES an obsolete 40mm gun mount as a turntable for this outdoor test. Here noise suppressor is being tested with the J-75 engine.

Attache Visits VAW-12 Responsible for Exchange Officers

Capt. R. H. Graham, RN, assistant British Naval Attache and Chief Staff Officer of the Royal Navy Staff at Washington, made a mid-winter visit to officers and men of Carrier Airborne Early Warning Squadron 12, NAS NORFOLK. As Chief Staff Officer, he is in charge of all exchange officers of the Royal Navy now serving tours of duty with units of the United States Navy.

VAW-12 was of special interest to Capt. Graham because since 1960 the squadron has taken part in the exchange program by sending three officers to the 849th HQ Flight at RNAS CORNWALL, England, in exchange for three Royal Navy officers. Currently the three RN officers participating in the program with VAW-12 are LCdr. Andrew R. Robinson, Lt. Clive Shucksmith, and Lt. John Perryman.

Capt. Graham found the visit of spe-



CAPT. GRAHAM, CDR. K. B. LAKE (VAW-12)

cial interest because VAW-12 is the only squadron on the East Coast currently flying the Grumman E-1B Tracer.

Navy Training Air Force North Island O&R Rework of F-4

C. H. Dodd and M. R. Lawrence, computer repairmen, Instructors from Hill AFB, Ogden, Utah, are the first to complete a five-week training course at NAS NORTH ISLAND's O&R department. About 20 Air Force personnel are slated to receive this training in rework of F-4 Phantom II aircraft.

North Island has been in the F-4 business for almost two years and is able to assist the Air Force, which will soon begin to rework its own F-4's.

The two were instructed in overhaul of the Central Air Data Computer. Most of the training took place in the Superclean Instrument Overhaul Fa-

cility (see NANews, February 1963, page 22). Leonard Keller, Aircraft Instrument Mechanic/Electronics, instructed.

The training was combined on-the-job theory and practical application. Students were checked out in disassembly, trouble shooting, alignment and calibration, application of system test equipment, and use of line maintenance test sets.

Two weeks of classroom theory at NAS MIRAMAR preceded this training.

Helicopter Pilots Honored General Greene Decorates Three

Three First Marine Brigade helicopter pilots were decorated in January at MCAS KANEHOE BAY, Hawaii, by Gen. Wallace M. Greene, Jr., Commandant of the Marine Corps. Capt. R. E. Stoffey of HMM-161 was awarded the Navy-Marine Corps Medal for personal heroism in saving the life of a crewman after a ground accident last May at Homestead Air Field on Molokai. Capt. B. G. Phillips and Warrant Officer W. L. Adamson, formerly of HMM-163 and now with HMM-161, received Air Medals for meritorious achievement while flying combat support missions in Vietnam.

Gen. Greene, in his first visit to the air station since becoming Commandant, also presented promotion certificates to four gunnery sergeants.

GCI Station Completed Key West Unit Opened in January

A new joint Ground Control Intercept/Air Defense Center (GCI/ADC) installation was officially opened at NAS KEY WEST in January. City, county and state civic leaders joined military officials in ribbon-cutting ceremonies.

Navy, Army and Air Force personnel together are manning the site which acts as the "Southernmost Eye of the U.S." The mission of the unit will range from training in normal procedures to air defense command surveillance and air intercept of unidentified air traffic approaching the mainland.

The one-story operations building is circled by three large radar towers which enable controllers to receive both height and azimuth information of aircraft within a 200-mile range of the site. Completely air-conditioned to provide proper temperature and humidity control for the electronic equipment, the entire compound is surrounded by a maximum security fence.

Present at the opening ceremonies were RAdm. Louis J. Kirn, Commander, Key West Forces; Capt. C. D. Fonvielle, Jr., C.O. of NAS Key West and LCol. E. E. McTaggart, CONAD representative and U.S. Air Force Commanding Officer of the facility.



THE 1500TH A-4 Skyhawk was delivered to the Navy by Douglas Aircraft on December 12th at Palmdale, Calif. Capt. R. M. Tunnell, BuWeps representative, accepted the carrier-based jet from Mr. L. W. Whittier, Vice President of Douglas Aircraft Division and Mr. H. E. Showalter, Vice President-Controller. This A-4E is an improved version of the first Skyhawk and features longer range and payload capabilities. The A-4's first joined the Fleet in October 1956.



WASHINGTON ARTCC is located in this modern structure at Leesburg, Va. Hub of operations is the main control room (C). Administrative offices are on left and radar microwave towers stand at right. Dedicated last June, the Center has 500 specially-trained employees.

ATC GROWS WITH THE JET AGE

YOU ARE in an airplane flying through the IFR darkness, alone and very busy. Your eyes work at the demanding cadence of a scan pattern while limbs press and push in slight, but nearly continuous, movement to keep the aircraft on altitude, course and speed. The only contact you have with other human beings is through radio transmissions with air route traffic controllers on the unseen earth below.

Controllers work in surroundings far more comfortable than those of your confining cockpit. But they are no less busy. One of these men, wearing earphones and a radio mike, leans

By Lt. Rosario Rausa

over a circular glass scope which is centered on a desk-like structure. On either side of the scope are sloping platforms that hold stacks of narrow rectangular strips which are frequently re-positioned or removed by one of a team of men also monitoring the radar screen. On these strips a series of numbers and letters, some imprinted by machine, others etched in grease pencil by the controller, record, in code, the history of your flight.

The man at the scope gazes with professional concern at a number of green blips illuminated against the

black background of the scope. One of those blips represents your aircraft. The size of a grain of rice, it is moving directly over one of a bewildering arrangement of lines which looks like a carelessly dispersed batch of pick-up sticks. These lines represent airways—designated highways in the sky.

The controller's voice is calm and deliberate in your earphones.

"Navy 62641, passing Chesapeake Intersection, contact Washington Approach on 363.8, over."

While you roger the instructions and shift radio channels, the controller executes his own changes. He first addresses a man seated to his left, peer-

ing into another of the radar scopes.

"You've got Navy 641." The man on the left nods in acknowledgment, maintaining the vigil on his screen.

"O.K., I'll take Pan American 42," the controller says to the man on his right. Again there is an exchange of nods.

Moments later, under the cognizance of the approach controller, you have completed a descent and are switched to another frequency. The deep, well-modulated voice of a GCA man signifies that you have reached the final stage of your flight.

His didactic instructions guide you down through the overcast and at 800 feet you go VFR and sight the flashing strobe lights of the destination runway. They point to a parallel row of bright, white lights outlining the strip where, moments later, you touch down for an uneventful landing.

Taxying to the parking line, you question the ground controllers in the tower and receive a curt reply. "Roger, 641, flight plan closed out at 21." And later, with the engine secured in the chocks, a familiar thought comes to mind: "We've certainly come a long way since the Wright Brothers."

Indeed we have and considerable evidence to this effect is depicted by the Air Route Traffic Control Center (ARTCC) which assisted you from launch to landing. Without having to ask, the Center and its group of airborne traffic specialists knew where you started from, where you were going, and how and when you were going to get there.

Quietly but efficiently, the Federal Aviation Agency has been modernizing its air control system and improving the working conditions for air controllers. Efficiency and pilot-controller confidence have been increasing while the number of control centers has been decreasing.

Part of the new look in traffic control is typified by the Washington Center located at Leesburg, Va., the control center for military, civilian and commercial air traffic in the Middle Atlantic Coast area from near New Castle, Del., to near Wilmington, N. C. One of 21 new FAA structures either completed or under construction, the Leesburg site was dedicated last June.

The Center's current home is a substantial improvement over its crowded quarters at the National Airport in

Washington. Modern in every way, it contains the latest in electronic equipment, including a Univac File Computer. This device, located at one end of the auditorium-sized main control room, can process ten flight plans a minute, automatically calculate flight times over predetermined check points and print this and other information on flight progress strips—the same ones made available to the busy controllers. The computer also automatically transmits control data to other Centers equipped with a similar computer.

The main control area has plenty of walk-around room and an elaborate air-conditioning system, designed for both creature comfort and maintenance of sophisticated electronic equipment at proper temperatures.

The equipment itself is powered by an electrical system capable of handling a community of 1000 homes. Special standby power units are automatically activated should the primary source fail.

The Center building is also fortified against nuclear attack. Solid concrete walls, 18 inches thick, protect against radiation effects and enough supplies are on hand to sustain controllers for two weeks as they carry out vital traffic control services for NORAD and other defense units. A water wash-down system is also incorporated on the building's roof.

Leesburg controllers are responsible for 27 sectors of airspace encompassing 100,000 square miles of sky and 19,600 miles of federal airways. Four rows of radar stations fill the largest portion of the main control room. Here, the scopes are monitored by teams of four men, each having a specific assignment.

One, the Flight Data Processor, receives and records information on the progress strips which originate at the computer after a flight plan has been filed by telephone or teletype. Next, the Manual Controller relays arrival and transit information to airport towers or adjacent Centers. The Radio/Radar Controller maintains voice communications with pilots and directs them while observing the various blips on the radar scope. The fourth man is the Coordinator, usually the most experienced team member. He acts as over-all supervisor for flights passing through a particular sector. Coordinators and Radar Controllers are quali-

fied to take over any of the four positions. They make frequent shifts in assignments to become totally trained in all controller functions.

At Leesburg, the radar stations are generally divided into three categories of responsibility. The "Chute," for example, encompasses approach corridors for the Washington area airports: Dulles, National, and Friendship airports, Andrews AF Base and others. Another segment includes climb-out and departure lanes while the third deals basically with en route traffic.

A comparatively new concept of air space management, Area Positive Control (APC) is included in the traffic set-up. The additional safety offered through APC is a direct reflection of the increasing need for improved aircraft separation procedures necessitated by the advent of higher and faster flying planes, both military and commercial.

The Washington ARTCC employs nearly 500 people. More than 400 are air traffic specialists, 50 are maintenance technicians, and the rest man the pilot-to-forecaster unit (seven meteorologists and five technicians) and handle administrative and clerical duties. They work in eight-hour shifts in order to provide 24-hours-per-day service to the nation's aircraft which, in a single year, fly more than 42 million miles along the airways.

The conversations conducted at the radar tables might appear to the uninitiated as words born in a science fiction movie:

"Take the Trans-World now. I'll leave the Navy Beech at eight. The Gulfstream can make it to eleven quicker."

"Eastern 43 and BOAC 18 entering the chute now."

"O.K., Alitalia 207 on the go-around is on the deck; he took the south runway."

"The F-100 for Andrews has low state, requests an immediate descent."

"They're reporting 8000 over with three miles. Vector him out of the stack, drop him to three and give him to the tower."

"Air France 75, squawk, 'Ident,' over."

"November Juliet 5428 wants to know if the Front Royal VOR is working."

"Roger, Air France 75, radar con-



MAIN CONTROL room is manned 24 hours a day. Hooded rows house latest in radar scopes and electronic equipment. Weather information is projected on wall for easy view of controllers. The "Cbute" section is on left while APC area is next to right wall.

tact, continue left turn to 310 degrees."

"Front Royal reports VOR 'up.'"

"The Oceana A-4's report weather at Hinton Dam, discontinuing Sandblower and taking reciprocal course back home."

"Three waiting for clearance at National, how we doing?"

"Good now, let 'em come."

And so it goes. What appears as an excursion into the world of vocal hieroglyphics is really a glimpse of the remarkably well organized and calculating realm of ATC men at work.

They must be continually aware of the time element and therefore work under a formidable, but not overwhelming, amount of pressure. A split-second decision is the rule, rather than the exception, but controllers are extensively trained, well versed in pro-

cedures and have a working knowledge of the capabilities of the aircraft they handle. Of more crucial importance to the controllers is the fact that their livelihood depends directly on the ability to direct aircraft from takeoff to touchdown expeditiously and safely. They must be as exacting in their work as scientists in the laboratory developing an explosive weapon.

The Washington Center is the third busiest in the nation, next to New York and Chicago. In an eight-hour period, for example, controllers may work one flight every 20 seconds. About 2000 separate flights utilize ARTCC facilities in an average 24-hour period.

The numbers are increasing. Today there are 340,000 miles of federal airways. More than 20,000 flights are made across the nation every day, and

with each day, the demands on both fliers and controllers grow. Already the anticipation of supersonic transports is causing concern.

Generally speaking, 50 per cent of today's air traffic is military, and communications between FAA authorities and service representatives is constant. The Area Positive Control (APC) for example, is expected to be lowered to 18,000 feet this year. Further, it is anticipated within a year that APC coverage will encompass 100% of U.S. airspace above 18,000 feet.

In the highly congested airspace over Norfolk, the advent of APC has helped both airline and military pilots considerably. Earlier, a number of complaints arose because there were simply too many aircraft in a common vicinity without positive control.

In the Norfolk area, there are several



FLIGHT DATA area is located at other end of main control room. Here, the Remington Rand Univac Computer prints information on progress strips which are handed to the Radar Controllers.



THE SPECIALLY designed telephone communications equipment is vital to ATC operations.

airfields: NAS NORFOLK, NAS OCEANA, Fort Eustis (Army helicopter base), Patrick Henry and Norfolk municipal commercial aerodromes, and Langley AF Base. Further, several airways cross this area and are used by Miami-bound commercial flights.

Mr. Joseph J. O'Busek, FAA coordinator for installation of APC, praised the benefits of APC in the Washington-Norfolk region. Understandably there existed a degree of friction between military and FAA men at first. But O'Busek comments, "We've talked most of the problems out of existence."

Mr. O'Busek still works with ComFAir NORFOLK on an almost daily liaison basis and points out that both civilian and military factions are being treated equally.

The "high-low" Sandblower flights departing from Oceana, for example, have been given specific attention. Dozens of these flights are conducted each day and a separate unit at Leesburg is designed for their control. Flight plans are noted a day ahead of time and afford the controllers preliminary knowledge and, consequently, expeditious handling of the Sandblower missions.

Mr. O'Busek also indicated that future hopes, when and if fulfilled, would leave the pilot of these operational flights on a single frequency rather than having him change four or more times in the course of a hop. "How much better it would be," he said, "if we could make one radio contact with the pilot and keep with him from start

to finish." At present, however, the equipment being used, combined with the traffic load, will not allow this.

Another type of problem was voiced by a West Coast admiral who is concerned about the over-sophistication of airway networks. Pilots who were familiar with the constant radar control available in America would have to make changes in their thinking when exposed to the less progressive systems in the Far East on carrier deployments. There is little opportunity for these pilots (and those assigned to duty in any foreign area) to ready themselves for range approaches and the more demanding requirements of IFR flying in these distant lands.

It is evident, therefore, that the jet age has brought with it not only an increase in the streamlining of airway traffic but also an increase in problems. The real job of keeping this traffic safe and expeditious requires both controlling agencies and aviators themselves to keep one step ahead of these problems.

In an address to the Radio Technical Commission for Aeronautics late last year, Senator A. S. Mike Monroney stated: "In hearings before the Congress, my colleagues and I have become increasingly aware of the complex nature of the daily task confronting air traffic controllers and pilots. Every effort must be exerted to reduce this work load through the utilization of modern techniques and equipment.

"A measure of progress has been achieved, but we never seem to catch up with the demands of the fu-

ture. We have barely entered the jet age in civil air transportation and already we are talking about supersonic speeds. Types and numbers of the aircraft not only in being today, but which we foresee for the future, demand that we use all our technological ingenuity to utilize automation in air traffic control and communications to ease the load in the cockpit and in the control room, as well as to reduce costly delays in air transportation."

At the Washington Center, there is bold evidence of progress: clocks that are automatically corrected several times each hour to insure precise time information; teletype machines which receive weather data that is subsequently projected on two huge screens for easy viewing by controllers; direct telephone links with Centers throughout the United States; another telephone connecting with the White House; and still another operated by a military representative for tactical use in situations such as the Cuban crisis. Soon, it is hoped that a new type of radar system will be able to pinpoint altitudes of aircraft, rather than just positions. Obviously, this would make both pilots' and controllers' jobs a lot easier.

Nevertheless, at the heart of the drama which is played every day at Leesburg and in the growing network of Centers are the 28,000 specially qualified men of air traffic control. While at work in the environs of radar scopes and computer machines, each of them has as great a responsibility as the man up above flying the airplane.

SEAL-LIFT BY AIRLIFT



A WEDDELL escapes into an ice hole, watched by Dr. Ray and others, near McMurdo Station.



A MOTHER and her three-week pup soak up sunshine on the France-size Ross Ice Shelf.



UNHAPPY at this development, Weddell cow objects to helo flight to McMurdo station.

THEY BARKED and bit, crawled and cried, and fought and fussed, but in the end, they were no match for three VX-6 helo pilots and their crewmen.

Six Weddell seals—among them an adult female and her male pup (later named Mac), an orphan female, a yearling male (named Murdo), a three-year-old male, and a four-year-old female (named Elsie)—were netted on the Antarctic ice shelf and airlifted to the scientific research center at McMurdo Station for study and later flight to Christchurch, New Zealand, by a squadron *Hercules* and to NAS NEW YORK by a VX-6 *Super Connie*. The surviving Weddell seals are now at New York City's Coney Island aquarium.

Dr. Carlton Ray, associate curator

of the aquarium, and two associates spent three and one-half weeks in the Antarctic, studying the seals' heartbeats, heat regulation, eating and nursing habits, and associated matters.

The Weddells are of particular interest to scientists because they are the coldest living of mammals and can maintain normal body temperatures equal to that of humans. They normally live comfortably in the icy waters surrounding Antarctica and withstand high velocity winds in sub-zero temperatures while sunbathing.

Lts. Gary L. Maaske and Lawrence H. Gjerman and Ltjg. Tom Cash piloted the helos, while Melvin D. Williams, ADJ2, Nick L. Stratos, ADJ2, and Gerald W. Cordy, AMS2, filled crewmen slots aboard. The larger seals

were carried in cargo nets during the three-hour flight to McMurdo. The smaller seals were inside the helo.

Capturing them wasn't easy. "One of the seals became quite angry when it was being placed in the cargo net," Williams said. "It bit one of the *Deep Freeze* scientists, ripping his Antarctic clothing and severing two ballpoint pens." The scientist was not hurt.

A short distance out of Christchurch, Mac's mother died. And when the C-121J landed at Pago Pago for a fuel stop, the female orphan and the three-year-old male died, although cabin temperature during the flight was maintained at 60°. Ambient temperature at Samoa was 90°.

Survivors are thriving, amusing the crowds and advancing science.



SEAL-LIFT by VX-6 helicopter transports Weddell species to McMurdo for studies made under a \$7600 grant from National Science Foundation.



WILLIS A. BURKETT, AT2, crewman in VX-6 *Super Constellation*, removes cargo straps from wooden crates built to transport seals to N. Y.

Marines Accept Last UH-34 580,000 Hours Amassed in Craft

In January 1957, the U. S. Marine Corps took delivery on its first Sikorsky UH-34 (HUS) helicopter. In January of this year, and more than 500 helicopters later, the Marine Corps took delivery of the last.

Between the first and the last UH-34, the piston-powered workhorse in Marine green has done a lot of flying, fighting, rescuing and lifting, amass-



MARINE UH-34 LANDS ON USS IWO JIMA

ing 580,000 air hours. High for a single aircraft is 3745. Although all U. S. services have used the UH-34's, none has used as many in as many different places as the Marines.

With this helicopter, Marines have developed a leapfrog concept of beach assault, perfected ground-air teamwork in cauldrons like Vietnam and performed heroic deeds of rescues.

The most famous pick-up involved Astronaut Alan Shepard on May 5, 1961, when he was lifted from his landing in the South Atlantic. It was also a Marine UH-34 that picked up Astronaut Virgil Grissom after his flight.

The last UH-34 delivered does not mean the end of the UH-34; for it will still be flying in Marine colors for years to come. Turbine-powered aircraft eventually will replace the UH-34. The CH-53A heavy assault copter is being produced for the Marines at Sikorsky.

A-5A Crosses Atlantic Flight Takes Less Than Ten Hours

An A-5A *Vigilante* was flown across the Atlantic from NAS SANFORD to



RYMAN AND SCHNEIDER BEFORE A-5 FLIGHT

NS ROTA, Spain, a distance of 4310-statute-miles in nine hours and 42 minutes in early January. Lt. Gerald M. Ryman, pilot, and Ltjg. George F. Schneider, bombardier-navigator, both of VAH-3, delivered the plane to the USS *Independence*, marking completion of the ferry flight to replace an aircraft damaged in a deck-handling incident.

The *Vigilante* left Sanford at 0313, refueled from an A-3B *Skywarrior* of

VAH-11 between Bermuda and the Azores and stopped briefly at NAF AZORES before proceeding to Rota where it landed at 12:55 P.M. (EST). Cdr. George W. Kimmons, C.O. of VAH-3, was on hand to wish his men luck before departing Sanford.

The flight demonstrated the speed with which units of Heavy Attack Wing One can reinforce aircraft carriers deployed to the Mediterranean.

VP-50 Sets Safety Mark Logs 30,000 Accident-Free Hours

Patrol Squadron 50, based at MCAS Iwakuni, logged its 30,000th accident-free hour when Flight Crew Two completed an 8.5-hour surveillance mission early in November. Cdr. Hugh W. Smith, C. O., commended Lt. L. G. Squillante, patrol plane commander, and his mark-setting crew.

VP-50 is under the administrative and operational control of ComFAirWing Six and flies P-5 *Marlin* sea-planes. Its missions include all-weather anti-submarine warfare, aerial mining, patrol surveillance and SAR.



BELL HELICOPTER COMPANY has received a \$7,662,257 contract for an undisclosed number of UH-1E helicopters for the U.S. Marine Corps, which are to be delivered between January and December 1965. The UH-1E is basically the same helicopter as the UH-1B Iroquois, now in the Vietnam conflict. The versatile helicopter is a nine-place, turbine-powered craft used for observation, target acquisition, command control, reconnaissance and casualty evacuation.

DAM NECK TRAINS DASH CREWS

By Bill Weesner, JO1

DETACHMENT TWO of VU-6 is a little group with a big mission. Based at the U.S. Fleet Anti-Air Warfare Training Center, Dam Neck, Va., the detachment trains crews in the operation and maintenance of DASH (Drone Anti-Submarine Helicopter), an addition to the Navy's growing anti-submarine forces.

The drone helicopter is being supplied to ships, mainly WW II destroyers which have been supplied with flight decks and hangars under the FRAM program.

The DASH training facility at Dam Neck was inaugurated in October 1962 for Atlantic Fleet training. The first flight took place the next month, but the first half of 1963, all DASH drones were grounded. Once the electronic difficulties were overcome, the drones were airborne again in June.

A similar facility, VU-3, trains Pacific Fleet crews at San Clemente Island, California.

On December 19, 1963, Ltjg. D. R. Matthew, a student controller who is now assigned to destroyer USS *James C. Owens*, and his instructor, CWO M. N. Pettigrew, logged the facility's 500th flight hour. Two weeks earlier the 1000th successful landing had been made.

By January, 1964, the detachment had trained 36 officer controllers and 80 enlisted men. Normally a DASH crew is composed of an aviation jet



AT THE CONTROLS are instructor Chief Warrant Officer M. N. Pettigrew (left) and a trainee, Ltjg. R. J. Wilson, as a DASH drone hovers over Dam Neck landing area during a training flight.

mechanic, an aviation electronics technician, an engineman, an electronics technician and an officer-in-charge. Aboard ship, the crew also includes a CIC officer.

Directing the training is LCdr. R. B.

Harter. The detachment's DASH training division consists of three officer instructors and 32 enlisted men.

VU-6's Detachment Two also provides KQ2R target drones for the drills of Navy's only shore-based gun line.



K. D. LARSEN, ADJ2 (left), and **H. R. Asquith, ADJ3**, load dummy torpedo on drone. It can carry a number of ASW weapons.



AN ELECTRONIC CHECKOUT is made by **R. L. Keefer (left)** and **R. W. McKinney, AT1 (right)**, as Det. 2's avionics chief, **E. Byars**, looks on.

PROP OR JET PILOTS, TH



AT NAS CORPUS CHRISTI, VT-31's mission is to train Naval Aviators in multi-engine Grumman S-2 Trackers. The task of transition to the new aircraft was accomplished with the assistance of VT-28 (pp. 22-23), also at Corpus, which has several years of experience in the S-2.

TRAINING SQUADRON THIRTY-ONE, commanded by Cdr. D. H. Jay, at NAS CORPUS CHRISTI, has reason to be proud of its safety record: 68,134 accident-free hours during four and a half years of flight training instruction, this in spite of the transitions required of it. During this period, VT-31 has flown the Beechcraft TC-45, the Lockheed TP-2F, the Martin P-5, and now the Grumman TS-2A.

The last transition occurred in May 1963. CNO directed that all student Naval Aviators in the multi-engine pipeline would be trained in the S-2 Tracker. In the next months, VT-31 grew from a complement of 29 officers, 295 enlisted personnel and 25 students

to 70 officers, 375 enlisted personnel and 110 students. The aircraft allowance increased to 50 S-2's. The reorganization included a major revision in the flight



CDR. JAY congratulates Ens. G. F. Hicks on being first student to complete S-2 course.

training syllabus, the five-week syllabus being expanded to 20 weeks. It includes all phases of advance multi-engine flying and carquals.

Another squadron in the Advanced Training Command, VT-25 at Chase Field, commanded by Cdr. W. L. Cranney, Jr., is one of four squadrons charged with training jet Naval Aviators. The training plane is the TF-9J Cougar jet. Ground school introduces students to the intricacies of the Cougar, and a student is ready for his first flight in two weeks. He is fully trained in instrument flight, and then devotes himself to formation flying, weapons delivery, low level navigation, night flying, and finally, achieves his goal, successful aircraft carrier qualification.

Y ARE ADVANCED IN TEXAS



TRAINING for Ens. J. P. Rogers involves spending many hours in the cockpit of a mockup before he is ready for his first flight at VT-25.



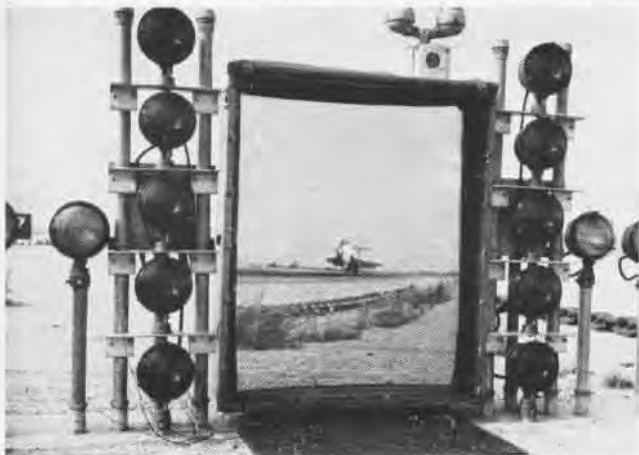
ENS. M. B. HURLEBERT sits in mockup of Martin-Baker Ejection System of TF-9J Cougar as CPO J. C. Coffey, left, explains proper position.



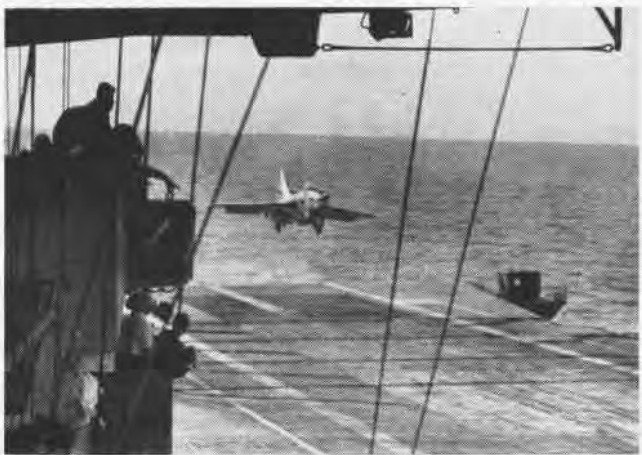
NAVAL AVIATION Cadet H. T. Dodge, left, is helped into his Cougar by Chad Ward, one of the many plane captains who "keep 'em flying."



CAPT. R. O. LAWRENCE, Capt. H. G. Miller, and Lt. P. R. Wood, all Marines, keep track of students' progress in various training phases.



CHASE FIELD'S Mirror Landing System reflects one of VT-25's Cougars. The system prepares the student for landing aboard aircraft carriers.



The BIG THRILL comes when a student makes his first landing aboard a carrier, the final phase of VT-25 training before pilot joins Fleet.

VT-28 RECORDS PROLIFIC 1963



T-28A TRACKERS of VT-28 fly in formation over the T-beads at Corpus Christi. The squadron has 50 aircraft and averages 650 flight hours per week, geared around three daily launches.

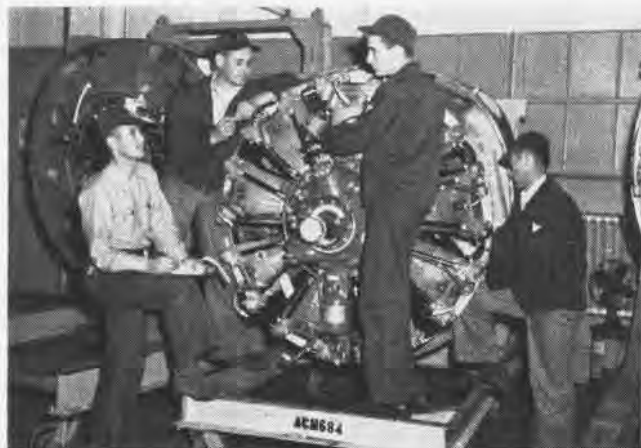
THE FIGURES in Training Squadron 28's insignia depict in symbolic outline, the unit's mission: the open book for instruction; the border hash marks and center dial for instrument training; the wing and nacelles for multi-engine familiarization; and the

cone for knowledge of navigational radio aids.

The period from December 1962 to December 1963 marked a banner year of accomplishment for VT-28 as it logged more than 30,000 accident-free hours, made 2921 carrier qualification

landings and trained 262 students.

In addition, the squadron flew 697 indoctrination flights for over 1200 NROTC Midshipmen, set up a training syllabus for a new sister unit—VT-31—and won three CNAVanTra awards for accident-free operations.



R. E. SORRENSON, ADR1 of VT-28, works on engine with R. Lomey, ADR2, VT-31, J. Thebean, ADR2, VT-28, and M. Watson, ADR1, VT-31.



VT-28 has logged over 112,000 hours without a maintenance-caused accident since May 1960. Six or seven major checks are done weekly.



LT. MAX WHITSON (R) and **L. L. Mimbs, ADRAN (L)** of VT-28, show **Lt. H. Hixon** and **H. A. Sellieb, ADR3**, of VT-31, pre-flight techniques.



INSTRUCTORS record information in scheduling office. Students spend 18 to 20 weeks in VT-28, get expanded ground training syllabus.



FLIGHT TRAINING stages include: familiarization, instruments, night familiarization, over water and airways navigation, anti-submarine

warfare tactics, and formation flying. The final phase is carrier qualifications. Here, a student lands aboard the USS Lexington.



LT. R. E. ROUNTREE (C) returns from the line with his students after bop. VT-28 instructors are highly experienced, average 2500 hours.



LT. DANIEL WATROUS initiates **Lt. Thomas J. Spencer** into VT-28 "Safety Wheels" Club. Members join after flying 1200 accident-free hours.



THIS C-130 HERCULES aircraft flown by VR-24 is similar to the C-130's based at McGuire AFB and VR-22 based at Norfolk. The Hercules are being delivered to the Naval units of Eastern Transport Air Force, VR-3 replacing C-118 Liftmasters which have given long, honorable service.

THE EXPANDING ROLE OF THE C-130

By Robert E. Wood, JOC

SOME DECADES ago, an unknown poet described the process of change as an enchanting miracle. Today, this idyllic thought is apt to be regarded with good-natured skepticism by officers and men of the Navy's Atlantic Air Transport Wing.

Personnel of this McGuire-based Wing have for many years flown and maintained the Air Force's C-118 *Liftmaster*. It has served the Navy well in the complex operation of the Military Air Transport Service. But flying days for the C-118 are numbered. At this moment, Naval units of the Eastern

Transport Air Force, both at McGuire and in Norfolk, Va., are caught up in their own miracle: transition from the C-118 to the C-130 *Hercules*.

There is little enchantment in the change—mostly hard work, uncounted hours of planning and, oftentimes, sober anxiety. For the role of the command doesn't slow down or wait, and the dovetailing of each facet of the transport mission has for its sole objective, orderly transition. Today the C-118, tomorrow a bigger and better *Hercules*.

The Lockheed C-130 isn't new to the Navy, nor to the Marine Corps, nor to the Air Force. What's more, only modest honor was realized by those squadrons first picked to fly the huge turbo-prop out of McGuire and out of NAS NORFOLK. It's merely a case of Navy Wing C-118's bearing the oldest serial numbers in MATS and, therefore, a logical beneficiary of a newer type aircraft.

The proposed schedule for conversion reads much like the oft-maligned railroad timetable. The first C-130's, for use by VR-3, will arrive in New Jersey



SLOWLY ENTERING the inventory of antiquity, the *Liftmaster* has been flown many years by the Military Air Transport Service. Induction of the C-130 to VR-3 and VR-22 shifts the emphasis of the squadrons from operational readiness to combat readiness while flying with MATS.

directly from the factory. Prior to becoming operational, an intervening period will be used for more accelerated training, augmenting what is now in progress.

Maintenance of these aircraft at McGuire will be out of Navy hands. Last March, the Navy Wing lost its maintenance squadron (see NANews, April 1963, page 23) after authorities resolved to consolidate such functions at this base. The new aircraft, then, will be flown almost exclusively by VR-3, but the squadron must go to the Air Force's 1611th Air Transport Wing to fulfill maintenance requirements.

For VR-22 in Norfolk, the story is somewhat different. The squadron expects to get its new aircraft seven

weeks later than VR-3, but with a similar target date set for operations. As is the case with its C-118 operations, VR-22 will maintain as well as fly the Hercules.

rupted, lending the Navy's customary big assist to the MATS job as airlift arm for the Department of Defense. Outfitting a Navy flying unit with a new aircraft is not unique. Nevertheless, a fundamental difference exists in this case, i.e., the Navy-Air Force partnership that forms MATS. Over 3000 Navy men take part in the MATS global mission, and with the Air Force directing the team under the single management concept, it is understandable that an occasional unfamiliar situation confronts both organizations.

Those most affected by transition can be found in the areas of operations and logistics. But during the entire undertaking, the workload for every department is nearly staggering. Why? Simply because maintaining the com-

mand's present mission tempo while phasing in a new aircraft is a mighty difficult assignment. Despite the talents needed to accomplish the change-over, no one person is more concerned than the wing commander. Capt. Charles J. Eastman, USN, stepped into a whirlwind of activity last summer when he assumed command of the Wing. He, along with his chief staff officer, must harmonize the efforts of many, if the hypothetical observer continues to recognize a "business as usual" posture. "Getting a new airplane is sort of

like getting a brand new 1964 automobile," Capt. Eastman said recently, while discussing the transition. "You know it shines, but will it handle as well as the old standby and will it hold up? All this and a new job, too," he added. "When you get Navy crews using Air Force planes to drop Army troops, that's about as 'joint' as one can get and still be wholly U.S."

If the observer would determine which department has more substance or who contributes most toward transition, he will wade through volumes of reading matter and attend dozens of conferences. His is indeed a fool's errand. From an operational standpoint, the change is seen as an expansion of the command's mission and consequently a greater responsibility within MATS. Besides taking on a decided "combat" look, both VR-3 and VR-22 will add new dimensions to their jobs, thanks largely to the C-130's bigger payload and its versatility. Whereas C-118 operations are at times regarded as "airline" services, the C-130 is capable of airdropping cargo and combat troops anywhere in the world. For the Navy in MATS, then, the emphasis will be shifted to combat readiness as compared with operational readiness.

The C-130 payload is roughly six tons more than the older Douglas C-118. This, plus the sheer size of her cargo access, will permit greater flexibility in cargo operations, a task that constitutes the bulk of Navy Wing flight scheduling.

Navy aircrews, moreover, will make maximum use of the new aircraft when they add two important flight qualifications to their already wide repertory. The first is CARP (Computed Air Release Point), a method of airdropping cargo in designated areas, unmatched in its precision. The second is known as Airborne Radar Approach (ARA) and is a reverse on the time-tested ground control approach procedure. The ground control function will actually be handled in the aircraft, so that landing in poor weather is possible on runways supplied earlier with necessary reflecting equipment.

This practice obviates the need for ground control approach personnel at remote, less active air bases, and broadens even more the spectrum of C-130 operations.

Despite the imminence of a new-look



HERCULES AIRCRAFT can carry 16 tons of cargo, 64 combat troops, or 74 litter patients. Rear-loading at truck-bed height, ability to land and take off from short runways aid MATS airlift mission.

mand's present mission tempo while phasing in a new aircraft is a mighty difficult assignment.

Despite the talents needed to accomplish the change-over, no one person is more concerned than the wing commander. Capt. Charles J. Eastman, USN, stepped into a whirlwind of activity last summer when he assumed command of the Wing. He, along with his chief staff officer, must harmonize the efforts of many, if the hypothetical observer continues to recognize a "business as usual" posture.

"Getting a new airplane is sort of

Navy Wing, no one is suddenly going high hat. The world-wide transport mission of the command will remain essentially the same as in C-118 days. And while those routes flown over the years are not expected to change significantly, the Navy does anticipate an enlarged role in future exercises and joint military operations.

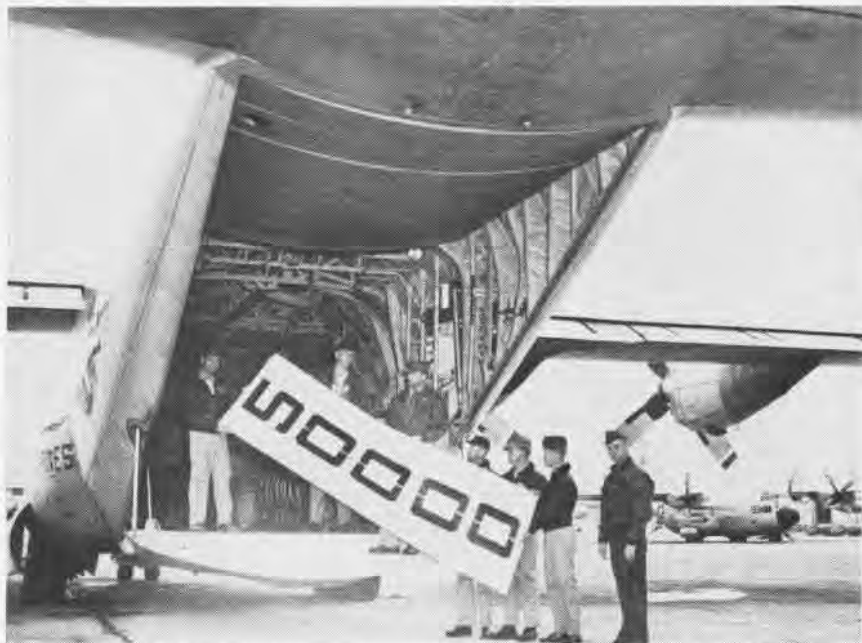
In the areas of maintenance and supply, the complexities of transition are no less evident. Again, each has for its common denominator, active support of current C-118 operations.

The single factor, perhaps, uppermost in the minds of planners is the physical difference between the two aircraft. A newer type, the C-130 is a more sophisticated piece of equipment that requires a higher degree of skill at every level. Maintenance men, long experienced in C-118's, simply must retrain. Some 60 per cent of the VR-22 complement did that by last January. Furthermore, future maintenance personnel reporting to the squadron will be taken from the highest enlisted ratings.

An equally critical effort is required in the field of supply, and one of the prominent concerns is the matter of space. Considerable quantities of spare parts are still vital to C-118 operations, and supply officials are hard-pressed to find added room for the rapid build-up of C-130 spares and associated equipment. These include 2200 individual pieces of maintenance equipment and tools, along with 11,400 line items and 56,000 separate spare parts.

Accompanying the transition, but not directly related to it, is the partially completed plan to place VR-22 under the Air Force Maintenance Management System (see "Naval Aviation Looks at AFM 66-1," *NANews*, March 1963, page 34). This measure is designed to make utmost use of the squadron's assets through the statistical accounting of maintenance accomplishment, material use, and manpower distribution. Although relatively new to the Navy, a similar concept is in practice at NAS OCEANA.

At first glance, the scope of C-130 training appears to affect almost everyone in the Wing. What's more, aircrew personnel should be well traveled by the time they're ready to handle their new aircraft. Starting last August, pilots and flight mechanics train eight weeks



MEMBERS OF VMGR-252 offload a sign depicting the total number of accident-free flight hours logged by the squadron; not a single flight mishap in almost five years. LCol. F. C. Haxton (R) is C.O.

at either Sewart AFB in Tennessee or Charleston AFB in South Carolina. *Loadmaster* training at Sheppard AFB in Texas is a seven-week course, while in New York, ground safety instruction is available. (For a sampling of squadron training curricula for C-130 acceptance, see "Induction: a Case History," *NANews*, October 1961, page 35.)

In the meantime, maintenance personnel will learn the intricacies of the *Hercules* from mobile training detachments at McGuire and Norfolk. A C-130 flight simulator also is scheduled to operate at McGuire. After the last class in Tennessee or South Carolina is graduated, the training of future C-130 pilots for the Wing will be achieved on a local basis.

The C-130 story is by no means restricted to operations, maintenance, supply or training. Rather, it is an all-hands evolution and one whose final execution will be fashioned only in terms of success.

Should our versatile observer skip those conferences or neglect the reading, he will perchance overlook the miracle played out before him. After all, he's likely to say, it was just an ordinary case of an old plane yesterday, a new one today, and all without the slightest effort! As the military say, it was a routine evolutionary process.

OTHER SQUADRONS are now operating C-130's. On August 4, 1960, the Navy accepted the first of four *Hercules* for VX-6 use in Operation *Deep Freeze*. Their introduction to Antarctic operations greatly increased resupply capability to remote areas of the continent. This is the ski-equipped 1C-130F version, previously designated C-130BL.

The *Hercules* aircraft were first flown to the Antarctic by the U. S. Air Force to test their feasibility. Their success was immediate and impressive in the summer support season of *Deep Freeze 60*.

The Navy's version of the C-130 was configured according to Navy specifications and designed for Antarctic operations. Four *Hercules* were obtained "off the shelf" from the U. S. Air Force. These were the first C-130's built primarily for polar aviation.

VR-24 at Rota, Spain, and VR-1 at NAS PATUXENT RIVER, Md., operate the C-130F transport, known as GV-1U before the designation was changed. Marines operate the KC-130F (the GV-1 tanker): VMGR-152 at Iwakuni, Japan, VMGR-252 at MCAS CHERRY POINT, and VMGR-352 at MCAS EL TORO.

A new version of the C-130, the C-130G, is being delivered to VR-1 and VR-21, based at Barber's Point.

Crew 8 Wins at VP-17 Named Best ASW Unit at Whidbey

Crew 8 of Patrol Squadron 17 has been named the top ASW crew of ComFAirWhidbey for the second quarter of fiscal year 1964. The crew has worked together since being formed in a replacement training squadron.

Patrol Plane Commander Lt. R. B. Conklin heads the crew which includes: Ltjgs. H. W. Bates, S. M. Pindell, I. C. Cole; W. D. Ellsworth, ADCS, G. L. Poteet, ADR2, R. R. Jensen, AT3, D. J. Osip, AT3, H. E. Schamp, AT2, L. Behrendson, AE3, J. E. Allred, AO2.

One More Set of Wings Marine Pilot Now Flight Surgeon

Some people are content with climbing the ladder of success only once. Navy Lt. Nicholas D. Broussard keeps jumping to the next level.

At 32, he is a Medical Doctor, a Navy Flight Surgeon, commissioned Lieutenant in the Navy Medical Corps, a Naval Aviator and a former Marine Corps fighter pilot. In the Korean conflict, he was a member of VMA-121.

Dr. Broussard was recently graduated from the U. S. Naval School of Aviation Medicine, Pensacola, as a member of Student Flight Surgeon Class 104. He has further plans. Right



NEWMAN HANDS BROUSSARD DIPLOMA

now his ideas for the future go as high as outer space. He would like to be an astronaut.

RAdm. Langdon C. Newman congratulated Dr. Broussard upon his graduation. In the picture above, Dr. Broussard wears the wings of a Flight Surgeon; Mrs. Broussard holds those of a Naval Aviator.

Rescue Gear Set for UH-2 Kaman gets Contracts to Install

Kaman Aircraft Corp. has received contracts to install special rescue equipment for UH-2 *Seasprite* helicopters which it is producing for Navy.

The new equipment and techniques, which were developed by the Kaman Engineering and Flight Test Staff under an earlier Navy contract, have been

described as "the most significant innovation in open sea rescue since the personnel hoist."

The system covers four items of new equipment: a rescue boom which swings out and puts the rescue operation in the pilot's field of vision; a ladle net which permits the helicopter to hover and scoop an unconscious man out of the water; a loud hailer by which the pilot can talk to and direct a victim in the water; and a rescue ramp which can be used to pull an unconscious man into the helicopter when it is possible to land on the water.

The rescue boom swings out like a long pointer when the pilot lowers the hoist. With it, the pilot has the entire rescue operation in his field of vision. Previous techniques demanded coordination between the pilot and the crewman operating the hoist.

The folding rescue net can be stowed in the cabin of the UH-2 and can be used either with a standard hoist or a rescue boom. It is lowered under an unconscious man to "ladle" him out of the water. Earlier rescue techniques using standard seat or hook often required a crewman to ride down the line to pick up an unconscious survivor. It was often dangerous and difficult.

The rescue ramp fits in the doorway of the *Seasprite's* passenger cabin and is used to rescue survivors conscious or unconscious in situations when the sea state permits a water landing. In this case, the helicopter lands in the water, the ramp is lowered by the hoist cable, and the survivor is pulled onto the ramp. When it is raised, the rescuee slides into the cabin.

The loud hailer system consists of two speakers mounted in the nose of the helicopter connected to the pilot's microphone. The pilot can use the system to instruct people in the water and to tell them what is expected of them. Experience has shown that persons being rescued often complicate the operation by not knowing what they should do.

The *Seasprite* is the Navy's new high-speed rescue utility helicopter. With the speed and all-weather navigational capability of the UH-2, the Navy is accomplishing rescues heretofore impossible. It can go 200 miles, pick up 12 survivors, and return in any kind of weather and do it unaided by an external navigation source.



PRODUCTION WORK on the first industry-built Saturn S-1 space vehicle booster has been completed by Chrysler Corporation Space Division at the NASA-Michoud plant, New Orleans. The S-1, 82 feet long, 21½ feet in diameter, weighs slightly less than 100,000 pounds without fuel. Eight Rocketdyne engines can provide a total of 1,500,000 pounds of thrust for the booster, which, with second and third stages, is capable of testing the Project Apollo module in earth orbit and of putting it through many of the maneuvers it will undergo in a moon voyage.

VA-176 REPORT

WHAT IS AN

E

?



E stands for excellence in bombing. Lt. Hank Lesesne scored three successive bullseyes.



Ever win six out of six individual Es in complex? Lt. Phillip Richardson did.



Every member of the VA-176 squadron contributed to winning the Atlantic Fleet's prop-attack Battle Efficiency E. These ordnance men

are able to load everything from training loads to nuclear weapons. Home based at Jacksonville, VA-176 recently served in USS Shangri La.



Each pilot is dependent on outstanding maintenance if the year is to be accident free. Lamberson, AMSI, is working on a buddy store.



Earnestly engaged in on-the-job training is Mullins, ATN3 (R), who holds meter as Instructor Smeigh, ATN2, works on VHF radio.



Eternal vigilance is the price of liberty." E is having aircraft loaded and ready, pilot on the alert, able to be airborne in minutes.

VA-176 Skyraiders were part of the Guantanamo Defense Force, Cuba, during April and May of 1963. Squadron skipper is Cdr. R. Brooke.



Effort paid off for sharp airmen, J. D. Lewis and C. A. Webster, appearing for a special Meritorious Mast before Cdr. H. P. Maulden.



Elegance is added as Hunt displays spirit and pride in VA-176's accomplishment by painting the treasured E on a squadron vehicle.

SELECTED AIR RESERVE



WILLOW GROVE receives resolution of Pennsylvania House of Representatives: Gov. Scranton, Stuart Helm, Capt. Waldman, E. G. Holl.



VMR-216 HELPED Seattle's 39th Casualty Staging Squadron, AF Reserve, put simulated casualties aboard Flying Boxcar in weekend exercise.

Willow Grove Honored

In the office of Governor William W. Scranton of Pennsylvania, Capt. A. C. Waldman, Jr., C.O. of NAS WILLOW GROVE, was presented a copy of a resolution passed by the Pennsylvania House of Representatives, commending the station. The Resolution had been introduced into the House by Rep. Edwin G. Holl and was presented to Capt. Waldman by the Speaker of the House, Stuart Helm.

The Governor added his congratulations, stating, "Pennsylvania is justly proud of the U.S. Naval Air Station, Willow Grove, for its valuable contributions in the field of community relations and for maintaining a force in readiness for any emergency which might arise."

Mobilization via Computer

The Naval Reserve Manpower Center (NRMC) at Bainbridge, Md., in cooperation with the Commandants and CNAResTra, is responsible for assigning personnel to the mobilization billets that must be filled during the first 90 days of a major national crisis. Who fills each billet is determined by comparing each billet requirement with those individuals possessing the required skills.

The factors used by the assignment

officers in evaluating a naval reserve officer's mobilization assignment potential are primarily his prior active duty experience and, secondarily, his civilian experience. Where the civilian profession is directly transferable to naval experience (law, medicine, civil engineering, etc.), the civilian experience is considered to have the same value as that acquired on active duty.

The type of reserve program in

which a reservist is training is also noted. For example, members of Selected Air Reserve squadrons, ASW and Mine Warfare Reserve crews, and Reserve Mobile Construction Battalions, can, if recalled, expect to be mobilized as a unit.

Other important factors considered include age, physical fitness, availability for recall, reserve status and pay status.

After carefully screening individuals for mobilization assignments (selected on a best-qualified basis), the Manpower Center informs the Personnel Accounting Machine Installation, Continental United States (PAMICONUS), that the selections have been completed. PAMICONUS then processes the mobilization orders for all reservists to be recalled within the first 30 days of a national emergency.

After checking, the Manpower Center sends out the orders to the Naval and Marine Corps Reserve training centers and air stations where the reservists are affiliated or to the mobilization stations nearest the homes of non-participating personnel scheduled for recall. The orders tell the reservist when and where to report and indicate at the same time the general nature of the billet to which he is being assigned.



PICTURE DEPICTS Thomas Lee Sundown's three lives: Weekend Warrior attending monthly meeting at Willow Grove, full-blooded Indian of Cayuga tribe, and a senior in Burgard Vocational High School, Buffalo, N. Y.



LTJG. HAWN, who became Reservist at Memphis in 1956, is there again, now with VF-791.

The majority of the Selected Reserve personnel will report to the same activity at which they are drilling for further processing to their ultimate duty station. The mobilization orders for non-participating reservists are retained at the training centers and mobilization stations for rapid handling in the event of mobilization. Should mobilization occur, these pre-selected reservists will be informed within the first few hours as to where and when to report for active duty processing.

Holiday on Forced Retirements

BUPERS has announced that there will be no involuntary transfers from an active status this fiscal year for Naval Reserve captains not on active duty. This comes as good news to those captains selected three years ago who would have been screened by a board this past January for transfer to an inactive status.

In effect, Naval Reserve captains are being given a "hump holiday" similar to that given regular captains during FY 1964.

Early in the year, it was thought it might be necessary to transfer commanders involuntarily in order to reduce to the legal ceiling by the deadline of June 30, 1964. Other active status losses have decreased the number of commanders below authorized strength, however, and with the smaller year groups coming into the promotion zones in forthcoming years, no involuntary transfer action is foreseen in the commander grade.

Full Circle

A Little Rock, Ark., man has gone full circle in one of the Navy's officer

programs. Ltjg. Herbert R. Hawn, Jr., enlisted in the Selected Reserve at Memphis while he was still in high school. He later applied for pilot training, went to Pensacola in 1957, and was commissioned an ensign in 1959. He served with VP-22 at Barber's Point for two years. He then returned to NAS PENSACOLA as a flight instructor before returning to inactive duty. So once again, he is a Weekend Warrior at NAS MEMPHIS, assigned to VF-791.

Another Milestone

Another milestone in Marine Air Reserve aviation was passed when a Marine Reserve pilot streaked through the sky over Dallas and Fort Worth in an F-8A Crusader jet fighter. The pilot was Maj. Virgil L. Mash.

His flight climaxed five months of work, planning and training by Navy and Marine Reserve units at NAS DALLAS.

After his one-and-a-half hour flight, Maj. Mash said that the F-8A Crusader was just what Reserve aviators have been needing in order for them to be trained and qualified to join the Fleet in a time of emergency.

South Weymouth's Good Neighbors

Capt. Forrest A. Pease, Commanding Officer of NAS SOUTH WEYMOUTH, recently presented "Good Neighbor Awards" to two Hingham, Mass., families, Mr. and Mrs. Cleon Vesler and Mr. and Mrs. Ferdinand DeNicola for their hospitality shown to rescue and salvage personnel following a crash early in December.

The citation read in part: "The work



MAJ. MASH, veteran Marine pilot for almost 14 years, was first to fly Dallas F-8 jet.

these men were performing, though necessary, was an unpleasant task, especially in the bitter cold. Your efforts in their behalf raised their spirits, boosted morale, and materially contributed to the completion of the endeavor." The families had continually brought hot coffee to all personnel and the Voslers made their home and telephone available to them.

It's a Family Affair

Capt. Frank M. McAfee, C.O. of NARTU NORFOLK, administered the oath of allegiance to his son, Lance, who recently joined the Naval Air Reserve six-month program.

Lance will graduate from high school this coming June and go on active duty. He is applying for the new PT (photographic intelligence) rate. After attending the Armed Forces Air Intelligence Training Center, Lowry AFB, Col., he will return to NARTU.



MR. AND MRS. I. C. DONALDSON watch Capt. E. A. Parker swear in their fourth son, Eugene, 17, in reserve at Andrews AFB. Also watching ceremony are James, 10, William, 24, Richard, 23.

AT SEA WITH THE CARRIERS

ATLANTIC FLEET

SARATOGA (CVA-60)

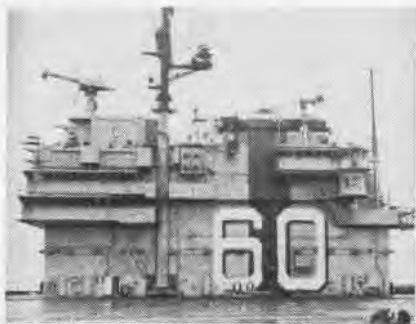
Quick thinking and coordinated team work by sailors of the Second Fleet attack carrier *Saratoga* and the guided missile frigate *MacDonough* provided a miracle for airman Carleton C. Ingerson of CVA-60.

While working as a catapult spotter on the forward part of the flight deck, Ingerson was blown over the side by a blast from an F-8 *Crusader* as it moved to the forward cat for a night launch.

Ingerson's absence was not noticed for over an hour, until a shipmate started to look for him. A quick search and nose count showed he wasn't around and a call over the address system failed to get a reaction.

Capt. John E. Lacouture, commanding the carrier, directed the *MacDonough* to reverse course and proceed to a position where he felt Ingerson was. The destroyer *Sellers* joined the search, as did *Saratoga* as soon as airborne aircraft were recovered.

Finding a man floating in the water, with no means for him to signal, and not knowing his exact position, is like looking for a needle in a haystack. To aid the search, *MacDonough* played powerful searchlights over the surface of the water, hoping one of the crew might see Ingerson's head bobbing in the water.



RENEWING the tradition of her predecessor, *Saratoga* now has a vertical black stripe.



THIS VIEW of this month's inside front cover by H. G. Jordan, PHC, was taken during tests aboard *Saratoga*. Surrounding an RA-5C are an A-6A, A-4C, F-4B, E-2A, F-8D and a second A-4.

Dennis M. Adams, SM2, was the first to spot him. *MacDonough* immediately sent a message to the approaching *Saratoga*, "We have your man in the water. Swimming strongly."

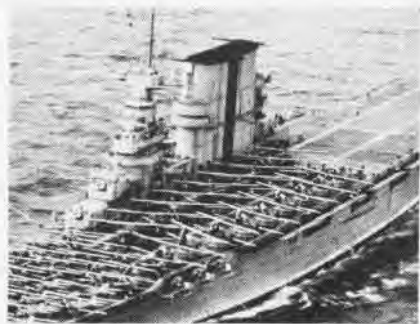
One hour and 25 minutes after taking the 80-foot plunge, Ingerson was picked up by *MacDonough's* motor whaleboat. Other than minor cuts and bruises and a slight case of waterlogging, the airman was none the worse for his harrowing experience.

It was the occasion for a happy reunion in the *Saratoga* when RAdm. William Martin, ComCarDiv Two in the *Enterprise*, visited NS MAYPORT. He, Cdr. Grant Young, C.O. of VA-34, and Mr. Joseph A. Doyle, of the New York law firm of Sherman & Sterling, recounted WW II days. They were members of Torpedo Squadron 10 based in the old *Enterprise* from November 1943 to August 1944. Adm. Martin, at that time, commanded the squadron. Young was an ensign and Doyle a lieutenant, junior grade.

LAKE CHAMPLAIN (CVS-39)

A plucky little girl is now a special friend of officers and men aboard the *Lake Champlain*.

Last summer, a Boston newspaper printed a story on Cathy Landry, an eight-year-old from Watertown, Mass., who lost her leg in cancer surgery. John A. McComsey, FA, aboard the carrier, wrote an encouraging letter to



THE STACK of the original *Sara* sported a stripe to distinguish her from the *Lexington*.

the girl and promptly received an invitation to visit the Landry home.

After the visit, McComsey was so impressed by Cathy's cheerful courage that he told the ship's chaplain, Cdr. John M. Danielson, about her. Chaplain Danielson suggested the ship "adopt" Cathy. On his next visit, McComsey presented the girl with a certificate signed by his C.O., proclaiming her the inspiration and honorary shipmate of the carrier's 2500 admiring men.

RANDOLPH (CVS-15)

In a break during ASW operations off Bermuda, *Randolph* held her annual Intramural Gun Shoot. Teams from the Gunnery Department, Engineering Department, VS-26, VS-36, and HS-7 entered the contest.

The target, consisting of two 50-gallon drums lashed together and topped with a red flag, was dropped over the fantail. The carrier slowly circled, holding the range between 3000 and 5000 yards.

The first team, VS-26, moved to the mount and fired six rounds. All shells landed successfully in the ocean, with some coming close to the target. The VS-36 team next began its attempt to hit the bobbing flag. They quickly bracketed the target. One shell dropped 1000 yards short, another 3000 yards long. After six attempts, the flag still floated.

The *Big Dippers* of HS-7 began next. According to a *Randolph* release, they came close enough to darken visibly the bright red. Then a second team from VS-26 blasted away—with less success than the first team.

Finally, the carrier's Gunnery Department team moved into the gun mount. The release continues, "When the Gunnery Department finished firing, the Commanding Officer of *Randolph*, Capt. Richard J. Davis, put on the baseball cap of what looked to be the winning team, HS-7.

"Hope still existed for *Randolph*, for the Engineers had yet to fire their six rounds. The target, however, was hidden in a cloud of black smoke, which suddenly began to pour from the stacks. Apparently, Main Control and the Engineering team had gotten their times mixed. Main Control's only answer to the Bridge, when informed their smoke was hiding the flag, was,



RANDOLPH'S Engineering team looks hopefully to bobbing flag during ship's gun shoot.

"Good!"

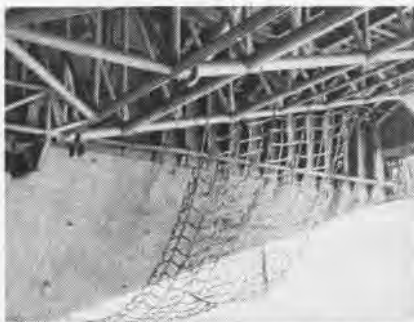
"The winners were HS-7, with VS-26 Number One team second, and *Randolph* Gunnery Department third. Only one problem remained before ending the competition: the drum and the red flag still floated."

Randolph made a lazy turn to within 100 feet of the target. Machine guns and rifle-fire of the Marine detachment aboard sank the elusive object.

SHANGRI LA (CVA-38)

The 55,000th arrested landing (since recommissioning in 1955) was made on *Shangri La* by Ltjg. W. F. Dralle of VA-46 in an A-4C *Skyhawk*. During the ceremony following, a second cake was cut by Ltjg. R. R. Renner of VA-106, who scored the carrier's 53,000th landing, also in an A-4C. Extensive operating schedule delayed his cake-cutting ceremony.

Shangri-La recently devised a simple but highly versatile evolution that simultaneously allows her escort destroyers to screen for submarines and serve as plane guard rescue ships.



LIFESAVING net is rigged to underside of elevator and angled deck on the USS Wasp.

During night low visibility carrier operations, destroyers previously took station in column astern of the carrier and ten degrees to starboard. This disposition insured quick pilot rescue in event of an aviation mishap, but prevented the destroyers from providing adequate "up front" sub protection for the task unit.

The *Shang* solved the problem by deploying one "small boy" directly ahead and one astern. The van destroyer screens for subs and the other serves as R/D. If a turn is executed, the destroyer forward of the carrier's beam takes station ahead while the ship abaft the beam slides back to plane guard position. This switch is frequently made as the carrier runs upwind for air operations and then turns downwind to gain sea room.

This maneuver, dubbed Operation *Quick Switch*, was originated by Capt. Edward L. Dashiell, Jr., Commanding Officer of the *Shangri La*. The combined ASW-R/D effectiveness has now made the maneuver a standard practice among all destroyers attached to Sixth Fleet carriers.

The *Shangri La* is currently nearing the end of her third Med deployment.

WASP (CVS-18)

Wasp has made the lot of plane handlers aboard a little safer by rigging a flexible nylon net to the underside of the Number Two deck-edge elevator. The net rides up and down with the elevator and is never exposed at flight deck level.

It has already proved its merit by saving one aircraft director who slipped off the after end of the elevator one black, stormy night. For a view of the net and rigging, see picture below.

ESSEX (CVS-9)

In ceremonies held in the ship's hangar deck, Capt. William R. Meyer, relieved Capt. West as commanding officer of the carrier.

INDEPENDENCE (CVA-62)

It was a whale of a good idea and the men loved it. Since the *Independence* would be at Cannes, France, for the holidays, Capt. James D. Ramage,

commanding, decided to have a ship's party everyone would remember for years to come.

He engaged one of Cannes' largest hotel ball rooms, Hotel Martinez, for the entire holiday period and renamed it Club a l'Independence. Said he, "The men deserve this get-together. They have worked hard, and there's nothing too good for hard-working sailors."

The hotel was delighted, according to assistant manager M. Raymond Arpino. He said, "This idea of entertaining the sailors is a very much appreciated one, I am sure. We are happy to accommodate and help them enjoy the holidays.

"Not since WW II," he continued, "have American servicemen taken over this ball room. At that time it was called the Riviera Room. So you see, we are experienced with sailors and we welcome them and wish them a festive time."

In appreciation of the captain's interest in his crew, the men conducted themselves in a manner that brought credit to the Navy and increased the prestige of the U.S. in Cannes, according to a release from the carrier.

PACIFIC FLEET

CONSTELLATION (CVA-64)

To observe a demonstration of the Navy's capabilities, Secretary of the Navy, the Honorable Paul H. Nitze, spent two days and nights at sea with the First Fleet in Southern California waters. He saw demonstrations in amphibious operations, anti-submarine capability, air-to-air missile firing, and surface-to-air firing.

Units participating in the demonstrations included the aircraft carriers *Constellation* and *Bennington*.

HANCOCK (CVA-19)

During the latest WestPac cruise, more X000th landings have been reported aboard the *Hancock*. Lt. E. S. Harvey of VAW-11 made the 61,000th, Ltjg. R. S. Monroe of VA-212 made the 62,000th, and Ltjg. R. W. Geeding of VF-211 made the 63,000th. Bakers aboard are busy.

Capt. A. J. Brassfield relieved Capt.



AIRCRAFT OF CARRIER Air Wing 16, commanded by Cdr. R. B. Baldwin, participate in an air show in the Sasebo area. The aircraft launched from the attack aircraft carrier USS *Oriskany*.

T. D. Harris as commanding officer of CVA-19, during informal ceremonies. The ship returned from the Far East and berthed at a pier at NAS ALAMEDA.

ORISKANY (CVA-34)

Capt. Herman J. Trum, commanding the *Oriskany*, is the latest C.O. to qualify in the Ten Thousand Trap Club. Cdr. John D. Shaw of VA-164 made the 10,000th landing aboard, since Capt. Trum assumed command. Cdr. Shaw made the landing in an A-4B *Skyhawk*.

Carrier Air Wing 16, commanded by Cdr. R. B. Baldwin, participated in an air show for VAdm. Masao Yamashita, JMSDF, Mr. Ichizo Tsuji, Mayor of Sasebo, and other distinguished Japanese citizens of the Sasebo area.

Flying from the deck of CVA-34, the airshow was opened by Cdr. F. A. Rockwell of VFP-63's Detachment Golf.

The guests were invited aboard for the show by RAdm. Frederick L. Ashworth, ComCarDiv One.

The 75,000th landing on *Oriskany* was made by Cdr. R. E. Case in the A-3B *Skywarrior* of VFP-63's Detachment Golf.

KITTY HAWK (CVA-63)

KittyHawk stacked up a series of records on her current tour with the Seventh Fleet. The 19,000th arrested

landing was made by LCdr. D. G. McCormick of VF-144 in an F-4B *Phantom II*. The 5000th cat shot launched from Number Two catapult was made by Lt. J. A. Kuechmann in a photo-Crusader from VFP-63. The 20,000th arrested landing followed, made by Cdr. Paul E. Russell, X.O. of VA-112, in an A-4C *Skyhawk*.

There were more. The 3000th helo landing was made by LCdr. R. E. Tobias, Officer-in-Charge of HU-1's Det. Charlie. He made it in a UH-2A *Seasprite* with copilot Ens. W. W. Beck and aircrewman L. E. Jaynes, ADR1. Two days later, Ltjg. Harry E. Vandervort, Jr., made his 1000th radar intercept in an E-1B *Tracer*. Fellow flyers in the detachment believe this to be a first for that number of intercepts in a Willy Fudd.

Final record reported was the 21,000th landing, made by Ltjg. John B. Roosen in a VA-113 A-4C *Skyhawk*.

At Kobe, Japan, a sailor of the old tradition boarded *Kitty Hawk* for a brief visit. In 1962, Kenichi Horie, 25, crossed the Pacific to San Francisco alone in a 19-foot sailboat. He completed the voyage in 94 days.

The NAS ATSUGI *News* reports receipt of a message from the *Kitty Hawk*. In part, it read: "Your outstanding cooperation and ready assistance made the *Kitty Hawk* Carrier Air Wing Eleven's in-port period a highly successful one. All Departments were always willing to lend a helping hand, with AMD being worthy of particular note." ★ ★ ★ ★

'Blues' Have New Skipper Aumack Relieves Wallace as OinC

LCdr. Robert Aumack relieved LCdr. Kenneth Wallace as OinC and flight leader of the Navy's flight demonstration team, the *Blue Angels*, in ceremonies held at NAS PENSACOLA in January. LCdr. Wallace, who flew with the team for seven seasons, 1953-1956 and 1960-63, has reported to the Naval Air Technical Training Unit at Brunswick, Ga. He will later be assigned to the USS *Midway*. Under Wallace, the *Blue Angels* flew a record number of shows in 1963, performing 82 times for more than 5,000,000 people across the U.S. and in Canada.

LCdr. Aumack led the team throughout a training period in January at Litchfield Park. The official '64 season began in February and will continue throughout the U.S. until November.

Lakehurst Tests SATS Cat F-4B is Launched Successfully

Utilizing three identical jet engines, the Naval Air Test Facility (Ship Installations) successfully launched an F-4B *Phantom II* from an experimental CE-2 shore-based catapult designed by the All American Engineering Company of Wilmington, Delaware (see NANews, July 1963, p. 28).

With two J79-8 turbojet engines supplying the aircraft power and one J79-8 engine for the cat power, the F-4 launched in less than 200 feet.



HEAVY RUBBER PADS set at critical points on the flight deck, such as this one on the USS *Midway*, reduce damage to deck panels and cable connectors as arresting gear cables are "whipped" by the aircraft landing aboard.

HS-7 Scores Milestone Records Two Accident-Free Years

Helicopter Anti-submarine Squadron Seven marked two years of accident-free flight in January after logging 14,000 hours during the period. HS-7 flies SH-3A *Sea Kings* and is a unit of CVSG-58.

The squadron also logged 7500 carrier landings, 1700 of which were made at night. Assigned to the USS *Randolph*, HS-7 is commanded by Cdr. D. J. Roulstone.

Drone Establishes Records VU-8 Takes Pride in its 'Old 65'

At NS ROOSEVELT ROADS, one of VU-8's QF-9G unmanned target drones is now affectionately known as "old 65." It has successfully survived 17 low altitude controlled flights—15 more than the average to set a squadron record.

VU-8 has had the drone since May 1962, and in its operations since then, the craft has suffered minor damage only once. On seven flights the drone was fired upon by *Terrier* missiles when flying at an altitude of 50 feet or less—another squadron record.

The long life of old 65 is not attributable to poor aim on the part of the firing ships. They are supposed to score "near misses" only. However, near misses frequently become hits and VU-8's skipper, Cdr. T. J. Cross, says the drone is still flying only because of expert handling in flight and topnotch maintenance.

As a tribute to her long service, the nose of the drone has been painted white and 17 drone insignia have been inscribed on it.

Old 65 has been in service for ten years and, considering its present survival record, VU-8 personnel may well be using it for years to come.

CG: 'An Enviably Record' VMT-1's Safety Mark is Praised

Members of Marine Training Squadron One completed three years of jet operation with the Second Marine Air Wing by logging their 20,000th accident-free flight hour.

Noting the unit's "remarkable accomplishment," BGen. Paul J. Fontana, Second Wing Commander, cited the squadron not only for its safety record, but also for its contribution

to the high state of Wing readiness.

In a message of congratulations, BGen. Fontana told VMT-1 personnel: "Your training not only includes the methods and procedures necessary for aircraft operations, but it also includes those safety procedures and rules which must be an integral part of flying. It is this professional approach and its enthusiastic execution which has enabled VMT-1 to attain this enviable record in the field of aviation safety."

VMT-1 is an independent squadron within the Second Wing and the only unit of its kind on the East Coast.

Piloting the TF-9J Cougar jet trainer, which logged the 20,000th accident-free hour, were Capt. H. E. Taylor and 1st Lt. R. D. Foreman.

VMT-1 is commanded by LCol. C. E. Merchant. The squadron has trained over 1050 pilot students since it was first commissioned in July 1958.

Floating Tiros Station Saratoga Gets Weather Pictures

Of the 42 stations now receiving pictures transmitted directly from the newly launched *Tiros VIII* satellite, the attack carrier USS *Saratoga* (CVA-60) is the only station not land-based.

Tiros was boosted into orbit December 20, from Cape Kennedy, Fla. Working through the combined efforts of the Navy Fleet Application Meteorological Operation from Satellites (FAMOS) and NASA, who launched the satellite, *Sara* is contributing to the perfection of a weather system that will allow U.S. aircraft carriers and large combatants to get a bird's-eye view of the 1000-mile area surrounding the ship.

It is hoped that this test period will bring to light any difficulties that may arise out of receiving signals amid the complex electrical equipment carried aboard a 70,000-ton aircraft carrier.

It took approximately two weeks to set up the Automatic Picture Transmission (APT) TV camera system in the carrier.

This system, similar to a regular television station and home receiver set-up, is still in its research and development stages. The value of the system lies in its simplicity. It will allow the local forecaster aboard to pinpoint positions of major weather systems.

It is foreseen that this system will be utilized in tracking hurricanes.



ENGINE is examined by K. R. Fisher, AD2 (L), and D. L. Inst., AD3, as crew repairs airframe.



PERIODIC inspection is done by R. E. Abbott, AD3 (L), J. O. Parker, AD3, and K. R. Fisher.



POINT is made by H. B. Brooks, ADCS, (R) for Cdr. Gray (L), ICdr. R. E. Novotny.

SANGLEY GIVES SERVICE IN SCOPE

SANGLEY POINT in the Philippines is a comparatively small station, but it provides logistic support for naval attaché aircraft in a large area of the Pacific contained within the points of Bangkok, Saigon, Taipeh, Djakarta, Canberra, and Singapore.

Actual work is performed by the station's youngest department, Aircraft Maintenance. This department was organized in September 1962 by elevating a division of Air Operations to independent status. In the department are six officers and 100 enlisted men under department head Cdr. R. J.

Photos by A. A. Slaughter, PH1

Gray, an experienced AirOps officer.

The department dates back to the days when wartime-created Fleet Air Service Squadrons were still operating, particularly FASRon-119, based at Sangley Point. When the squadron was deactivated in 1958, most personnel were absorbed by the Maintenance Division of AirOps until the establishment of the AM Department.

Work being done by the shops and offices of the department include: periodic maintenance, inspection and

servicing of aircraft; special jobs on complex equipment carried in modern planes; planning the most economical and effective utilization of manpower and materials; and the administration of the Fleet Air Western Pacific Repair Activity program, consisting of repair or rework of aircraft by Philippine Air Lines personnel under formal contract.

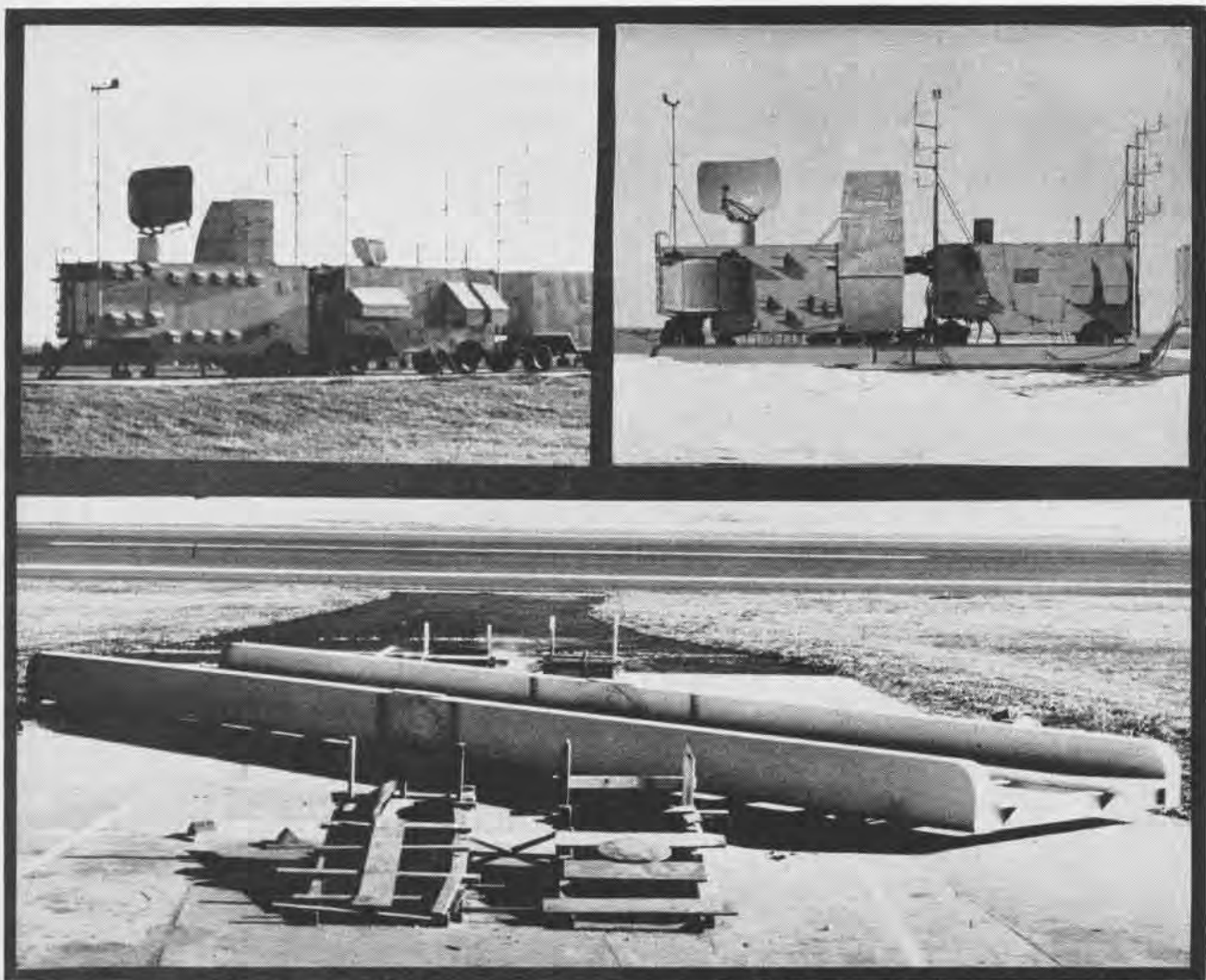
Unfazed by the magnitude of the area covered, the AM Department services all places expeditiously and efficiently. Personnel in the department work well together and have developed a strong sense of teamwork.



STATION HELICOPTER tail rotor is inspected by (from left) B. D. Browne, AD1, J. E. Parker, and R. C. Lane, AD3, during a maintenance check.



SURVIVAL GEAR is checked before flight. E. E. Cunningham, ADAN, inspects raft gear as V. S. Walmer, PR2, J. P. Tomey, AM3, rig chute.



PROTOTYPE HYDRAULIC GCA turntable at Willow Grove is a vast improvement over other installations. Top pictures show before and after mounting trailers. Turntable not only cuts rotation time to 4½ minutes, it also costs much less to install and maintain than previous types.

FIRST HYDRAULIC GCA TURNTABLE

A PROTOTYPE hydraulic Ground Control Approach turntable, the first of its kind in the United States, has been installed at Naval Air Station, Willow Grove, Pa.

Thus far, Willow Grove reports, it has proved to be a vast improvement over any other installations used previously. The time required to shift runways has been substantially cut to 4½ minutes rotation time. That it is satisfactory under all conditions has been proved by functional and flight tests.

The new installation operates in much the same manner as a service station grease rack. The trailers are placed

on a platform with a hydraulic lift capacity of 80,000 pounds. The platform rests in V blocks properly aligned for the runway in use.

In order to change runways, the platform is lifted hydraulically 12 inches to clear the V blocks and all obstructions, then rotated electrically and placed in V blocks positioned properly for the new runway. Commercial power can be maintained on the electrical Ground Control Approach components at all times.

This new concept in GCA turntable construction will eliminate the difficulties of the platform track type of

turntable by preventing the occurrence of such problems as a sagging track and blockages by sand, dirt and weather. The turntable was built by the Globe Hoist Company, Philadelphia, Pa., and is ruggedly and simply constructed.

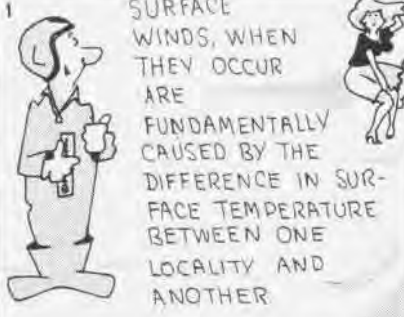
The fact that the hydraulic GCA turntable does not cost as much to install and maintain as previous ones is regarded by Willow Grove as a real argument in its favor.

Willow Grove is willing and eager to answer inquiries in regard to the turntable. Simply address inquiry to OinC, GCA Unit 31, NAS WILLOW GROVE.

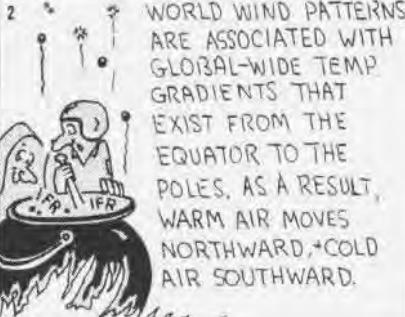
WINDS

Lt. N.F.O'Connor

1 SURFACE WINDS, WHEN THEY OCCUR ARE FUNDAMENTALLY CAUSED BY THE DIFFERENCE IN SURFACE TEMPERATURE BETWEEN ONE LOCALITY AND ANOTHER



2 WORLD WIND PATTERNS ARE ASSOCIATED WITH GLOBAL-WIDE TEMP GRADIENTS THAT EXIST FROM THE EQUATOR TO THE POLES. AS A RESULT, WARM AIR MOVES NORTHWARD, COLD AIR SOUTHWARD.




3 THE GENERAL CIRCULATION OF THE ATMOSPHERE MOVES AIR IN THE VERTICAL AS WELL AS HORIZONTAL, THE LATTER BEING CALLED ADVECTION.


WHEN ADVECTION OCCURS, WIND EXISTS

THE EXTENT OF ADVECTION DEPENDS UPON THE RELATIONSHIP OF THE TEMPERATURE AND PRESSURE OF THE ATMOSPHERE.


4 THE EFFECT OF PRESSURE UPON WIND IS WELL DESCRIBED IN BUYS BALLOT'S LAW: "WHEN AN OBSERVER STANDS WITH HIS BACK TO THE WIND IN THE NO. HEM., THE CENTER OF LOWEST PRESSURE IS TO HIS LEFT, THE CENTER OF HIGHEST PRESSURE TO HIS RIGHT"



5 IN ADDITION TO THE PRIMARY CIRCULATION OF THE ATMOSPHERE THERE ARE MANY VARIATIONS CAUSED BY TOPOGRAPHICAL AND PRESSURE CONSIDERATIONS. THESE ARE CALLED THE SECONDARY CIRCULATIONS, SUCH AS LAND & SEA BREEZES, VALLEY WINDS, ETC.



6 ALL SURFACE OBSERVATIONS OF WIND SPEED AND THE MEASUREMENT OF WIND SPEEDS ALOFT MADE BY UNITS OF THE NAVAL WEATHER SERVICE ARE IN KNOTS. (ONE KNOT IS EQUAL TO 1.15 STAT. MPH).



New Rules for Ney Award Two Afloat Categories for 1964

BUSANDA has announced new rules for the 1964 Ney Memorial Awards Program honoring the Navy's outstanding ship and shore enlisted men's messes. The 1964 rules feature the first major change since the award was established seven years ago.

In the 1964 Ney Contest, plaques will be presented to two outstanding afloat messes rather than one. Ship messes feeding 300 or less will compete for the newly-established Best Small Mess Afloat Award. Ships feeding more than 300 will compete for the award

for the Best Large Mess Afloat.

The division of the afloat award into a large and small category was developed in response to requests from the Fleet for a more equitable basis in judging the ship competition.

Navy afloat messes range in size from the small minesweeper which feeds some 30 or 40 men to an aircraft carrier, such as the *Independence*, where facilities feed approximately 4000.

As in the past, the 1964 Ney Awards Program will be sponsored by the Food Service Executives Association, which will present the awards to the winners at the annual convention in Portland, Ore., in August of this year.

More PLAT for Carriers Four Air Stations Also Get TV

The Navy has awarded the Ampex Corporation of Redwood City, Calif., a contract for procurement of closed circuit television recording systems, commonly known as Pilot Landing Aid Television (PLAT). Adopted by the Navy in 1962, the system is presently incorporated in 14 carriers. With this purchase, 11 additional carriers plus four naval air stations will be equipped with the system. Deliveries are scheduled for April.

Each PLAT system consists of a videotape recorder, cameras and receivers which permit close observance of landings and takeoffs and give pilots an immediate video replay of them in the interest of safety and training.

VU-7 Breaks a Record Scores High in Utility Wing Pacific

During December, Utility Squadron Seven broke Utility Wing Pacific's previous record for one month's flight time by flying 1535 hours. This was accomplished using five different types of aircraft, the prop-driven UB-26J, S-2C and RC-45J, and the T-33 and F-8A jets. This large amount of flying was especially remarkable because of the shortage of maintenance personnel during the Christmas leave period.

Utility Squadron Seven, "the most shot-at squadron in the Navy," provides aerial targets for missile and gunnery firing practice for ships and aircraft of the Pacific Fleet, and supplies jet fighters for air intercept training.



OFFICERS PROUD OF TOTAL HOURS FLOWN

In the picture, Operations Officer, LCdr. Kivlen, Maintenance Officer, LCdr. Berry, and Commanding Officer, Cdr. Ennis, proudly survey the sign which was made to announce the hours flown by the squadron in December.

Editor's Corner

IT'S CAW AND CRAW. Names and official designations for attack carrier air groups have been changed by Chief of Naval Operations. Attack air groups and combat readiness air groups now are known as attack carrier air WINGS (CYW) and combat readiness air WINGS (RCVW). The short title of group commanders now is WING commander (CAW) (CRAW). The change does not apply to support ASW air units, which are smaller than attack carrier forces.

Suspicious Confirmed. Fireman John Hanby, a Navy man with membership in an exclusive 200-mph stock car racing club, was interviewed by a reporter for the Long Beach Naval Station's *Seaboard*. Asked what was the most frightening part of driving, he replied, "The Los Angeles freeways covered with Sunday drivers."

TRISKAIDEKAPHOBIA. Those who fear the number 13, take heart! Lijg. Thomas Myers of VFP-62, flying on (Friday) December 13th aboard the *Saratoga*, drew qualification number 13, made his 13th trap aboard during the 1300 launch while flying an aircraft bearing side number 913. According to his squadron's PIO, "The only bad luck reported was a skinned shin while crossing the 113th frame knee knocker on his way back to the ready room." (He was commissioned on Friday, October 13, 1961.)

Accent on Safety. While the USS *Kearsarge* was en route to the U.S. after its recent Far East cruise, the ship's radio station kept up a continuous 315-hour stream of information about the news of President Kennedy's death and funeral. Station manager for KEAR, Fred Stock, EM2, and his staff, kept filling the long broadcast hours with safety tips on highway driving.

Four days after reaching Long Beach, Stock came upon an accident scene on the Long Beach freeway, stopped to assist by placing flares on the road to warn other motorists of the danger ahead. He stayed around for an hour to help direct traffic, earned praise from police as "the only one (of 20 to 80

persons on the scene) doing anything to prevent further traffic collisions." He also received a commendation letter from the *Kearsarge's* C.O., Capt. Paul Gray.

STEEL BALL AWARD. USS *Independence's* air group (now, WING) Seven gave an award to VA-72 squadron for the best performance in the landing phase of operations during its Med cruise. This year another award was given—the "Steel Ball" plaque to the individual who pulled the "biggest goof of the at-sea period." First winner—Lt. Bill Hall of VA-86—was cited as follows: "During night flight operations, while both he and the CAG were scheduled as spares, he completely out-manuevered the CAG (CAW) and got his own plane launched, leaving the CAG (Cdr. L. M. Nearman) to be taxied forward and scratched." Lt. Hall had read an article in the November *Naval Aviation News* entitled "Bagmanship—How to Get Ahead in Carrier Landings Without Being Obnoxious." His citation stated that the award was presented for "out-bagging the CAG (CAW)."

What Should an Editor Do? In this month's mail came this request for assistance from a young woman: "I'll soon be married to a Naval pilot and would greatly appreciate any guidance in my transformation from a civilian to a Navy wife." That's right, we sent her a subscription blank for *Naval Aviation News*.

WITNESS A DISCHARGE, ANYONE? Adding a certain aura of excitement to the re-enlistment ceremony has long jogged the imagination of public information officers. Latest and certainly among the most exciting was that of Parachute Rigger First Class Paul Geise, of NATTU Lakehurst. While free-falling through the air at 7000 feet, Geise accepted discharge papers from PR1 Walker McGraw in front of witnesses Lewis DeYong, PRCA, and Photographer Charles Seymour, PR1. The latter recorded the mid-air delivery on film. The foursome jumped from an altitude of 12,500 feet, fell free for 60 seconds before opening



'WHERE'S THAT PAPER?'

their parachutes. The re-enlistment ceremony—six more years for Geise—was held back on earth.

More Anti-diskaidekaphobia News. On Friday, December 13, 1963, NAS MIRAMAR logged its 300,000th air operation of the year. The day was warm and sunny, visibility good, at the home of Pacific Fleet's fighter squadrons, 13 miles north of San Diego.

FROM CHIEF TO COMMANDER—AND BACK. When a photographic team from NPC commenced shooting film for a new anti-submarine training movie for the Navy, a Key West scene was made with "Commander" J. C. Shaw introducing the audience to the S-2D *Tracker* airplane and its crew. Chief J. C. Shaw of VS-30 was "promoted" just for the two weeks of the filming.

Naval Aviators must be Adaptable. During a two-day survival training period on the broad expanses of the famed King Ranch in Texas, flight officers from VT-22, Kingsville, sampled the following foods: armadillos, squirrels, rabbits, roadrunners, rattlesnake, woodrats, prickly pears, cactus and wild greens.

NEW ON THE ROLL. Cdr. Walter D. Roll, exec of VP-28, completed his 10,000th flight hour recently. Statistically, some mathematician said, it meant that Cdr. Roll had flown an average of 1.2 hours every day during his 23 years of service, a total of 417 days airborne. He is a former member of the Black Cat squadron of World War II and PBY fame. (Grampaw Pettibone chuckled when he heard about the 10,000 hour mark, for on that same day Cdr. Roll also became a grandfather.) ★ ★ ★

LETTERS

Kudos

SIR: It has come to my attention that your fine magazine has placed first in its category in the 1963-1964 Government-wide Publications Contest conducted by the Federal Editors Association. No one is happier than I to learn that you have achieved this recognition.

Naval Aviation News has been an outstanding publication since its inception. You and your staff are to be congratulated for accruing another hash mark in a long line of plaudits of excellence.

Although I am no longer the "boss" of Naval Aviation's "voice," I take a great deal of pride in having been recently associated with this prize-winning periodical.

Congratulations on your noteworthy achievement and best wishes for continued success.

W. A. SCHOFCH, VADM.
Chief of Naval Material

SIR: I have just seen the back cover of your January issue, and I think that you should be extremely proud. I have always enjoyed your excellent *Naval Aviation News*, but like most magazine readers, have never taken the time to tell you. The Federal Editors Association award is a great honor and I congratulate you.

And our *Newsletter* people—who grudgingly admit that you have a fine magazine—want me to tell you that they're going to give you a "run for the money" next year.

Please pass on my sincere congratulations to all of your talented staff.

JOHN CRUMPACKER, RADM.
Chief of BuSandA

Footnote to History

SIR: Your readers may be interested to know that Mr. Dale B. Sigler (January NANews, p. 13) in addition to authenticating the 1911 Wright engine, helped illuminate other obscure aspects of Naval Aviation history. High-

lights included a filmed interview and visits to the sites of the 1911 and 1912-13 aviation camps at Annapolis.

The filmed interview was held at the Naval Photographic Center for the purpose of helping to plug our greatest gap in knowledge of the beginnings of Naval Aviation: identity, contributions and recollections of early enlisted men. For this interview, Sigler was joined by H. Fred Bourdon who as a Chief Machinist's Mate was assigned to aviation upon its return to Annapolis from San Diego in early 1912. Bourdon was in charge of the maintenance of the Navy's Curtiss A-4 airplane in early 1913 in which the late VAdm. P. N. L. Bellinger (then a Ltjg.) soloed; later that summer he assisted Bellinger and young Lawrence B. Sperry in testing a gyroscopic stabilizer. These tests marked the first Navy interest in development of automatic pilots.

Regrettably, 93-year-old J. Alfred Erickson who constructed the hangars and cleared the field at Greenbury Point in 1911 could not participate in the interview because of poor health. Sigler's and Bourdon's impressions upon many aspects of Naval Aviation's beginnings were recorded and retained at the Naval Photographic Center.

Greenbury Point, the site of the Navy's first aviation camp, now contains the towers for Naval Radio Station, Annapolis. The eastern side of the Point is encased in a relatively new seawall of piling. Erosion by the restless Chesapeake and grading in connection with the erection of radio towers and related buildings have changed both the boundaries and contours of the Point. In addition, Annapolis is now a sprawling city. Despite all of these difficulties, Mr. Sigler identified the site of the 1911 aviation camp and it was confirmed from extant landmarks that were checked against 1911 photographs.

Mr. Sigler had not been attached to the 1912-13 camp adjacent to the Engineering

Experiment Station but was curious as to its location. This proved readily ascertainable in a quick trip to the EES. The original EES building, a rather conventional long, low, brick factory-type structure, still stands, changed externally only by a new coat of gray paint. A slip large enough to receive small vessels is still adjacent to the building where the generally north-running eastern bank of the Severn makes a sweeping arc in an easterly direction; the tent hangars for the 1912 camp were pitched within this arc which now houses laboratories of EES.

The enclosed photograph shows the 1912-13 camp in relation to EES as well as Greenbury Point, the site of the 1911 camp, in the background.

LEE M. PEARSON
BuWeps Historian

The Friendly American

SIR: In the December 1963 issue of *Naval Aviation News*, a story from the anthology entitled, *The Friendly American*, was published. In the introduction to the story, "Dachshund with a Mission," it was stated that the book could be obtained through the office of the Superintendent of Documents, Government Printing Office, Washington 25, D. C. No price was given. Can you tell me what a single copy would cost?

M. V. O'LEARY

San Francisco, Calif.

* At the time we went to press with the December issue, no price had been announced. We have the word now. *The Friendly American* costs \$1.25. (For overseas mailing where there is no APO or FPO number, add 25% to the check or money order.)

Errors in Officialese

SIR: This letter is in reference to your "Editors Corner," page 39 of the January 1964 issue—a real fine effort.

Nominated herewith are the three most misused words in Naval Aviation: "Type," "Class," and "Model!" How many times in your publication, in the *Approach* magazine, and even in august directives of CNO, in the various Bureaus and in ready room talk are these words mangled consistently. The informal jaw slippage is not significant except that it contributes substantially to errors in officialese, where it can really cause consternation.

Your attention is invited to one minor area, pilot qualifications. I have seen whole major commands and squadrons out of joint in interpretation of this one, particularly on the subject of minimum hours in a given bird for designation as Plane Commander or Copilot.

Perhaps your well-honed pen can make a dent in the problem. On the other hand, maybe we could join up on the USA, USAF, FAA, and ICAO by adopting officially the prevailing terminology.

With respectful thanks for a fine publication,

C. R. GIESZL, COR.
NAS Point Mugu, California



THIS PHOTOGRAPH, which was copied from H. Fred Bourdon's album, shows the camp in relation to the Engineering Experiment Station at Annapolis, with Greenbury Point in background.



SQUADRON INSIGNIA

The 'Shamrocks' of Marine Fighter Squadron 333 claim no special heritage from St. Patrick, but they honor him and Irish tradition each day of the year and especially on March 17th. The green emblems on their F-8 Crusaders and the tiger and shamrock in their insignia are familiar signs at MCAS Beaufort. Part of Marine Aircraft Group 32, VMF-333 provides fighter support for Atlantic Marine Forces. Early participants in the 1962 Cuban crisis, the 'Shamrocks' recently returned from another Caribbean tour. Lieutenant Colonel B. P. Gibson, Jr., is C. O.



VMF-333





FACES IN THE NEWS

Over a period of twelve months in the past year, many faces have appeared in Naval Aviation News. This year there will appear more than 1000 photographs of interest to all persons connected with Naval Aviation. Flight deck personnel at work . . . pilots in cockpits . . . admirals on the bridge . . . happy people . . . personnel at play . . . at work . . . on shore leave. Somewhere, sometime, one of our correspondents will catch your son, brother, sweetheart or husband in action on his job. Now is the right time to renew your subscription to Naval Aviation News. Send \$2.50 check or money order to the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

NAVAL AVIATION
NEWS