NAVAL AVIATION NEWS

50th Year of Publication

JANUARY 1969

NavAir No. 00-75R-3

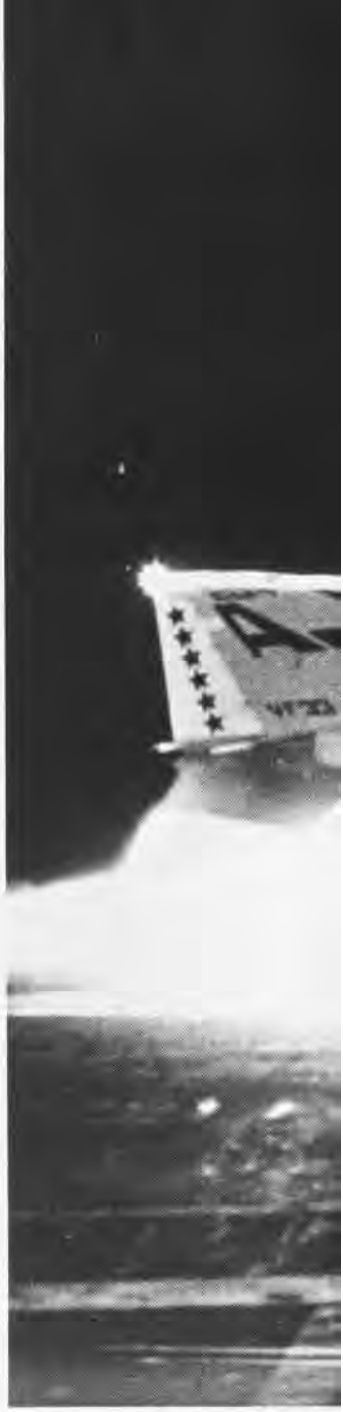
SHARE THIS COPY

NAVAL AVIATION NEWS

FEATURES

THE STAFF

Published monthly by the Chief of Naval Operations and Naval Air Systems Command to provide information and data on aircraft training and operations, space technology, missiles, rockets and other ordnance, safety, aircraft design, power plants, technical maintenance and overhaul procedures. Issuance of this periodical is approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS P-35. Send mail to Naval Aviation News, OP-05D, Navy Department, Washington, D.C. 20360, located at 3828 Munitions Building; 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 the Supt. of Documents, Government Printing Office, Washington, D.C. 20402. A single copy costs $.25.



COVER

The front cover picture of Navy's A-7A Corsair II, taken at Fallon, Nev., is the work of LTV's Arthur L. Schoeni. The back cover reproduces a painting by Commander Ted Wilbur who aptly entitled his work, 'Victory at Sea.'

SOMETHING OF A MIRACLE

Many years ago, it was hard enough to launch aircraft from carriers in daytime, and a night launch, such as the one above on the USS America, seemed an impossible dream. But engineers and the pilots themselves through years at sea, shore stations and at the Naval Air Test Center, Patuxent River, Md., developed devices and techniques that make such a maneuver a routine Fleet operation today. Beginning on page 22, Lt. W. R. Needham describes the tests developed to assure a plane's 'carrier suitability.'

NAVAL AVIATION NEWS

NATC Testing New ASW System

Will be Installed in VSX Aircraft

NATC Patuxent River, Md., has initiated tests on the prototype of ASW equipment to be installed in the first jet-powered, carrier-based, computerized ASW aircraft.

The new weapons system is installed in a VSX A-NEW test aircraft flown into Patuxent River in November. Tests will be conducted by the Weapons Systems Test Division.

Although not representative in appearance of the yet-to-be-built VSX, the A-NEW aircraft permits an early look at the ASW weapons system.

Sikorsky Award for Aircrewmen

Now Eligible for 1,000-Hour Insignia

Aircrewmen who have logged at least 1,000 hours in a particular model Sikorsky helicopter are now eligible for a special Sikorsky award. The award previously applied only to pilots who had logged 1,000 hours at the controls.

Crewmen may apply for the award through their local Sikorsky field service representative or by writing to Field Support Manager, Product Support Department, Sikorsky Aircraft, Stratford, Conn.

The award is retroactive to flights dating back to the early 40's.

NASA Announces Apollo 10 Crew

Stafford is Spacecraft Commander

The National Aeronautics and Space Administration has announced that Astronauts Thomas P. Stafford, John W. Young and Eugene A. Cernan are the prime crewmen for the *Apollo 10* mission, scheduled for the second quarter of this year. It is planned as NASA's second manned flight of the lunar module.

The backup crew consists of Astronauts L. Gordon Cooper, Donn F. Eisele and Edgar D. Mitchell. Flight crew support team members are Astronauts Joe H. Engle, James B. Irwin and Charles M. Duke, Jr.

The crew is training for a lunar orbit mission in which the complete *Apollo* spacecraft – command and service module and the lunar module – will be flown. However, if an earlier *Apollo* mission must be repeated or plans are changed, the crew will be prepared for the complete range of *Apollo* missions.

Apollo 10 will be launched by a *Saturn V* into low earth orbit. In the case of the most forward mission, at the end of the second or third orbit, the third stage of the *Saturn V* will be re-ignited to place the space vehicle on a trajectory to the moon. The command and service module will separate from the third stage and the spacecraft lunar module adapter panels will be jettisoned.

The command and service module then will dock with the lunar module and extract it from the rocket stage. The combined spacecraft modules will continue to the moon and enter an orbit around the moon.

Spacecraft commander Stafford and lunar module pilot Cernan will enter the lunar module, detach it from the command and service module, descend to approximately 50,000 feet above the moon's surface, then return to the orbiting command and service module. The lunar module will be left in orbit around the moon and the crew will return to earth in the command module.

Stafford, a USAF colonel, was the pilot of *Gemini 6* in December 1965, and the command pilot of *Gemini 9* in June 1966. He has logged more than 98 hours of space flight.

Young, a Navy commander, was the pilot of *Gemini 3*, the first manned flight in that program in March 1965, and he was the command pilot of *Gemini 10* in July 1966. He has more than 75½ hours of space flight.

THE NEWEST, *fastest transport and the oldest, slowest one used for New Zealand to Antarctic runs are shown side by side at Christchurch. The USAF C-141 Starlifter carries an average load of 40,000 pounds while the Navy's LC-47 "Gooney" carries only 3,000 pounds of cargo. Whereas the Starlifter can make the trip in five hours, it takes the Gooney 15 hours. This February the Antarctic pioneer LC-47 will leave VX-6 after 13-1/2 years of service.*

Cernan, a Navy commander, flew with Stafford in *Gemini 9*, during which he became the second American to "walk in space." His space flight time totals more than 72 hours.

Schoolmaster of the Year Award

NATTC Memphis Instructor is Named

ADC Edward D. Williams, an instructor at the Aviation Machinist's Mate School at NATTC Memphis, has been named Schoolmaster of the Year. Runners-up in the two-day competition were ATC David A. McPeek, NAMTG Memphis, and AGC John L. Frazar, NATTC Lakehurst. A panel of judges selected the three finalists from seven instructors representing the seven primary activities of the Technical Training Command.

The annual competition for the award, co-sponsored by the Memphis Council of the Navy League and the Chief of Naval Air Technical Training, is designed to enhance morale among instructors and stimulate continued improvement in teaching techniques.

Mr. Randolph S. Driver, Assistant Secretary of the Navy (Manpower and Reserve Affairs), presented the trophy to Captain H. F. Lloyd, C.O. of NATTC Memphis, and Chief Williams.

HT-8 Logs Major Safety Mark

Has Flown 200,000 Safe Flight Hours

Late in November, Helicopter Training Squadron Eight, NAS Ellyson Field, celebrated the squadron's latest achievement: 200,000 accident-free flight hours. The record was set a week earlier as a TH-13M and an H-34 landed simultaneously to complete the record number of hours. The last major accident at Ellyson was in October 1965.

HT-8 is the Navy's first training squadron and the Navy's first single-engine squadron to achieve this high number of safe flight hours.

The safe hours were recorded while the squadron trained a record number of students. In FY '68, HT-8 flew more than 67,000 safe hours in more than 45,000 flights while it trained 828 students. This was 83 students over the year's quota.

Rear Admiral D. H. Guinn, CNABaTra, congratulated the squadron's commanding officer, Commander C. J. Jaburg, and all the officers and men of the squadron: "HT-8 has done an excellent job, and I am extremely proud of all of you."

IN A CEREMONY *at the Sikorsky Aircraft Company, Stratford, Conn., Commander Edward A. Skube (left), pilot of the SH-3A helicopter that was the recovery craft for the Apollo 7 mission, received a replica of "Recovery 3" from Sikorsky president, Mr. Wesley A. Kuhrt (center) and Mr. Igor Sikorsky, the company's founder (right), honoring his pick-up of Astronauts Capt. Walter Schirra, Maj. Donn Eisele and Mr. Walter Cunningham, the Apollo 7 team.*

New Navy Officer Program Open

Regular Navy Status to Honor Students

In November, the Naval Air Advanced Training Command at NAS Corpus Christi graduated the first group of Naval Aviators under the Navy's new Distinguished Naval Graduate (DNG) program.

During aviation designation ceremonies, Ltjg. William F. Harrison, USNR, and Ens. Gary R. Williams, USNR, received their Navy Wings of Gold from Rear Admiral Frederick C. Turner, Chief of Naval Air Advanced Training, and were at the same time given the option of accepting an appointment in the regular Navy, based on their performance as students. Harrison has been a jet flight student with VT-26, NAS Kingsville, and Williams, a multi-engine prop student with VT-28 at NAS Corpus Christi.

The aim of the DNG program is to bring into the regular Navy's officer ranks at the earliest possible time the top performers from the Navy's reserve officer program. The program permits a ceiling of up to 15 percent of the graduates from the Navy's various officer training programs, such as the college and university Naval Reserve Officer Training Corps (NROTC), Officer Candidate School, and Aviation Officer Candidate program at the time of their initial commissioning or at the completion of their training program. This ceiling permits regular Navy appointments to be granted to about 1,100 graduates each year.

The Distinguished Naval Graduates are selected by boards established at NROTC units, at the Officer Candidate School, Newport, R. I., and at NAS Pensacola, Fla.

50th Anniversary of NC-4 Flight

SecNav Designates May for Celebration

By SecNav Notice 5060, the Secretary of the Navy has designated May 1969 as a commemorative period for celebrating the 50th Anniversary of the first aircraft flight across the Atlantic Ocean, in 1919. This was made by the U.S. Navy's NC-4.

In the decade following the NC-4 flight, many others made trans-Atlantic flight attempts, a few successfully. But the NC-4 was the pioneer, and the U.S. Navy, with a team effort of destroyers as guideposts along the oceanic route and supply ships at ports along the way, was responsible for success on the first try of this aeronautical feat.

GRAMPAW PETTIBONE

This Bird *Will* Fly (Again)

It was an afternoon launch from the CVS, the first event of a ten-day deployment. The weather was bright and clear with light winds. The E-1B, with two well qualified lieutenants aboard was catapulted at 1405 for a refresher carrier qualification period.

While circling in the Delta pattern awaiting the completion of the launch, the crew was startled by eight or ten loud backfires from the starboard engine. The pilot, in the left seat, called and advised Primary Fly of the situation and requested a precautionary landing. Given signal Charlie, he began his descent, simultaneously dumping fuel. The *Tracer* arrived at 500 feet abeam the ship on a normal downwind leg.

Three S-2E aircraft on deck were quickly respotted forward, and the flight deck was prepared to recover the E-1B. The aircraft, abeam the ship at the 180° position, was still dumping fuel as the pilots prepared to make an essentially normal landing. They secured the fuel dump at the deep 90° position; both pilots checked to make sure the dumping had ceased. The hatches were open, and ball acquisition was normal though, as the pilot added power slightly, he noted the starboard torque pressure dropped about 80 psi.

He was still receiving adequate power and continued the approach. The ball appeared normal except for being slightly high, and, as the aircraft was on short final, the pilot was "shocked" to see the waveoff lights. As he added power, there was a significant loss of rpm on the starboard engine, and he heard a transmission from the LSO that he was trailing smoke from the starboard engine. The waveoff was otherwise normal with no fire indication, either visual or on the gauges.

Upon reaching the upwind turn,

there was a sudden drop of oil pressure on the starboard engine. The pilot and copilot discussed the situation; it was decided to feather the engine. The copilot completed the single-engine checklist while the pilot maintained level flight. During this time the aircraft had lost altitude to 200 feet whereupon the LSO warned the pilot to gain altitude. With 56 inches of manifold pressure on the port engine, the aircraft slowly climbed to about 500 feet. By the time the pilots reached the 180-degree position, Primary had advised that the barricade was being rigged. Both pilots stated that every move was done systematically and discussed prior to its being executed.

Upon acquisition of the ball on final, the gear was lowered, flaps set at 2/3, and a slight high ball was flown with the airspeed at 113 knots. The pilots felt they were fast, though there were one or two calls for power on final. The aircraft passed the round down slightly high but nosed over to engage the #4 wire and simultaneously the barricade. The aircraft came to an immediate stop. There was no evidence of fire and the crew secured the aircraft, using the ground secure checklist, then made a normal exit from the plane.

Grampaw Pettibone says:

Gratifyin'! What a real pleasant change from the S-2 fiasco recounted in the October issue. All it takes is a checked-out crew and followin' the rules. Just like milk for my ulcer!

There was a missed cue or two and some lack of communications, however, which just might've led this flight into more serious trouble. On the aircraft's first approach, the LSO didn't know that he was bringing aboard a plane with a declared emergency. He decided to wave off the *Tracer* 'cause it appeared that it was dumpin' fuel from the starboard engine. Egad! It was smoke from that weak engine, not fuel.

Looks like Primary fell down on the job by not passin' the word, though the people on the platform might have put two and two together and figured it out.

It's a good thing they didn't go swimmin' 'cause the copilot had no life jacket on. Tsk! Tsk!

Stuck in the Mud

On a warm clear day at one of our southern training bases, a JG student aviator launched as second section leader of a four-plane syllabus formation hop in his TF-9J *Cougar*. The flight had been airborne for about ten minutes and was cruising at 5,500 feet msl when the JG heard a loud metal-to-metal sound coming from the engine section. Reducing power, the student informed the instructor flight leader, who was flying the #2 position, of his problem. He then noted rpm and tailpipe temperature decreasing and experienced what he thought was a flameout.

With the assistance of the instructor, who had sent the other two students home, relight procedures were completed. Rpm and tailpipe temperature increased; the pilot turned back toward

ILLUSTRATED BY Pettibone

home field, dumping excess fuel from his wing tanks. The throttle was set to 86% as recommended by the instructor, and preparation made for a precautionary approach at base. The loud noises then began again, and rpm decreased slightly.

Because of his concern for the continued operation of his engine and the low altitude (6,500 feet) over a populous area – against the expressed request of the flight leader – the student decided to make an immediate emergency landing at the nearby municipal airport. The instructor notified the civilian tower of the emergency while the student set himself up for a seven to eight-mile straight-in approach to the 5,600-foot runway.

At approximately three to four miles at 1,500 to 2,000 feet altitude, the JG lowered his speed brakes and slowed to about 190 knots. When he knew he had the runway made, he lowered the landing gear and flaps and tried to close the throttle. Finding that it would not retard below 79%, he opened the canopy.

Meanwhile the instructor flying wing position was becoming concerned over the way things were progressing. He knew that the *Cougar* was heavy (5,000 pounds of fuel aboard) and that, with the limited runway length and absence of any arresting gear, a landing would be critical. He therefore told the student several times he was fast and to slow it down.

On touchdown at 160 knots, 1,500 feet down the runway, both tires blew, and the aircraft started a swerve to the left. By using full nose-down elevator and full right rudder, the swerve was corrected but then reversed to the right. Approaching the end of the runway, the airplane was heading back left again, approximately 60 degrees to the runway heading and in a right skid.

As the plane left the runway and started sinking into the mud, the starboard wing dug in causing the craft to roll. The wing then tore off and, as the *Cougar* rolled inverted, the ejection seat was fired by contact with the soft ground. The pilot was ejected into the mud while the plane tumbled on away from him. It shed its other wing, coming to a stop upright some 50 feet away.

With the top of the inverted seat firmly imbedded in the mud, the student had some difficulty extricating himself. Using his knife and shroud cutter, he managed to cut himself free and walked away from the scene unassisted, suffering only a bruised cheek.

The crash crew arrived shortly as well as the SAR helicopter. Discovering the F-9's engine still running at 50 to 60% rpm, the crash fire captain climbed to the cockpit and retarded the throttle to idle. He was unable to get it into the shutoff position so reached over and turned off the fuel master switch to secure the engine.

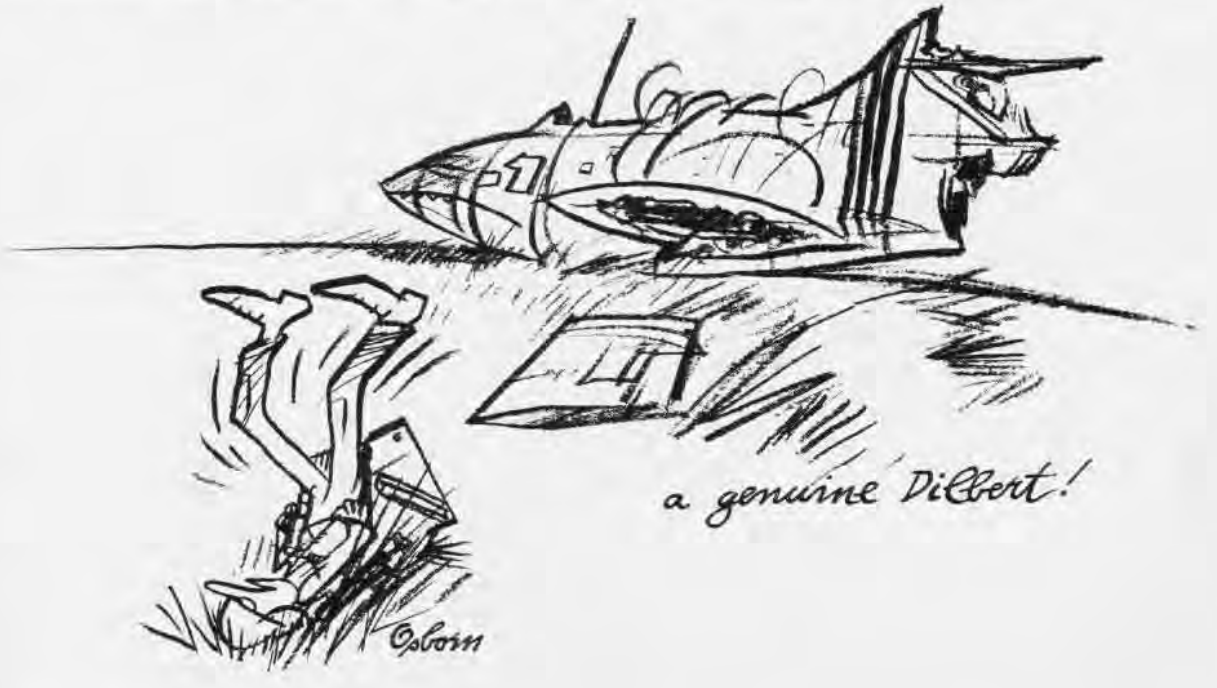
Grampaw Pettibone says:

Great horned toadies! Talk about buyin' the farm! This lad was doin' his plantin' and plowin' a little early. Or was he just checkin' the quality of the soil before cashin' in his chips for the down payment?

The aircraft accident board determined that his engine never did flame out, nor did he complete proper relight procedures. The clattering noise was made by the right hand ammunition access panel, which was open, banging on the upper fuselage. The throttle problems were probably pilot caused by improper movement and by leaving the friction too tight when setting up for the precautionary approach.

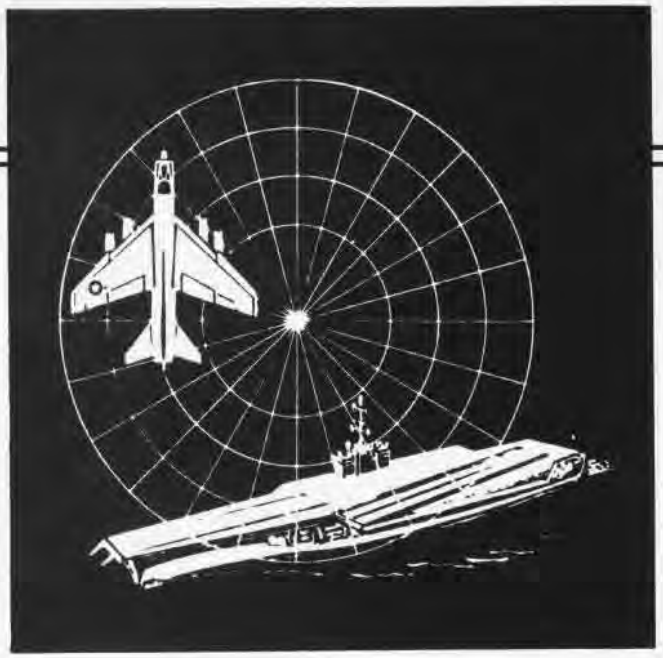
He could have easily made it to his home field or to another NAS even closer. Landing at an inadequate airfield under other than ideal conditions is just askin' for trouble. Even on final approach, he might'a saved the day if he'd either shut the engine down or waved off and tried again.

Since he had almost 100 hours in the F-9, perhaps a little more could be expected. His emergency procedures briefing, although thorough, just didn't seem to sink in. Hopefully his judgment and technique will improve with age and experience – if he lives long enough.



Third in a Series
of NANews Special Reports

The Rolls-Royce of Flight Simulators



The Link 2F84 combines a complex operational flight trainer and a weapon system trainer in one. It is designed to provide Naval Aviators with as wide-ranging and realistic an environment as possible as they transition to the A-7A Corsair II. One replacement pilot had this to say, 'The 2F84 is so realistic, it's frightening.'

By JOC John D. Burlage

You could call Naval Training Device 2F84 the Rolls-Royce of flight simulators. This fantastic conglomeration of computerized components comprises the A-7A *Corsair II* Operational Flight/Weapon System Trainer (OF/WST) which helps teach Naval Aviators how to handle the *Corsair II*, the Navy's newest light attack jet aircraft. It's quite a flight simulator.

"The thing is so realistic, it's frightening," is the way one pilot put it after he had "flown" it on several training missions. "On these 'flights,' you suddenly get the notion you're actually in the cockpit of an A-7A. Come to think of it, for all practical purposes you are."

Comparing the 2F84 to a real, live A-7A may be stretching the point, but, when you consider what the device simulates, you soon agree it's a most impressive training aid. A pilot can step into the 2F84 and, after several "flights," get a complete run-through of every conceivable technique and procedure he must master before he takes a *Corsair II* into combat – without leaving the ground.

And that is the purpose of the 2F84. It is designed to provide as wide-ranging and realistic an environment as possible without tying up expensive airplanes for training and without hang-ups caused by such factors as aircraft maintenance requirements, weather, and the lack of proper tactical situations.

More important, it is intended to train the replacement pilot (RP) without taking the chance of getting him in a dangerous situation because of his making a mistake in a situation that does not permit correction or reversal.

The 2F84 does its job, first, by giving the RP a complete cockpit orientation: the engine start and turn-up, taxying, and takeoff. It trains him in both normal and emergency instrument procedures. It teaches him radar navigation (over a 1.5-million-square-mile area), tactical operations, and weapon delivery. Since no one wants to leave him up in the air after a "flight," he can also learn control procedures for landing – and he can "land" the device. Once he's landed, he can also shut the engine down exactly as he'd do in an operational A-7A.

The device that provides this highly diversified orientation is actually two trainers in one. There's the "flight" portion, built by Melpar, Inc., and the "tactics" segment, constructed by the Link Group of General Precision, Inc. (*NANews* December 1968, pp. 6-11).

The physical characteristics of the 2F84 are surprisingly simple to describe in light of the fact that they are as impressive and complex as any modern, computerized system. Basically, the OF/WST consists of a duplicate of a *Corsair II* cockpit, instructors' consoles, and analog and digital computing equip-

THE LINK 2F84 OPERATIONAL FLIGHT/WEAPON SYSTEM TRAINER EQUIPS PILOTS TO MAN THESE CORSAIR II AIRCRAFT

ment. All are housed in an air-conditioned, movable enclosure that is 32 feet wide, 74 feet long, and 21 feet high. The whole shebang weighs 55,000 pounds.

The full-scale cockpit replica comes complete with every control and instrument characteristic of the real A-7A fully simulated. Interior lighting is also accurately copied, and the use of external, variable-intensity lighting and a translucent canopy permits simulation of different conditions of daylight and cloud cover.

The sounds associated with an A-7A engine are very much a part of the 2F84. An RP hears the "engine" when it's being started, when he's "taxying," when he "takes off," when he's "flying," and when he "lands." All the sound levels are duplicated with astonishing precision by audio oscillators and sound generators.

Realistic duplication of what the *Corsair II* pilot hears through his earphones is also a part of the 2F84, since all features of radio navigation and communications equipment are simulated. The RP even breathes as he would in a *Corsair II* because there is an oxygen system in the OF/WST cockpit that is an exact copy of the one in the aircraft.

This is the kind of precise duplication of the "real world" that leaves a pilot – like the Naval Aviator who felt he was in an A-7A – with the distinct impression that every move he makes is vital to the successful completion of the "mission." It is just this attitude that the men handling the training syllabus are looking for.

As in many other major training devices, the instructors seated at their control consoles have it in their power to accentuate the realism of a mission to a level that can give the poor replacement pilot a bad case of nervous tension if he's not careful. To understand how they do this, let's take a close look at the interrelationship of the two portions of the 2F84, *flight* and *tactics*, and how they are employed either in combined or independent operation.

The interdependence of the two portions is so complete that it is often hard for experts who know the trainer inside-out to explain exactly where a breakdown occurs between them. However, you can get an idea of the differentiation between the two by understanding that everything in the cockpit portion of the OF/WST is termed *flight* except the radarscope and the installed electronics countermeasures panels which receive inputs from an independent computer system. When an RP operates either of these latter installations, he is working with the *tactics* section of the trainer.

The *tactics* portion outside the cockpit includes a pair of computer cabinets, an optics cabinet, and an instructor's console.

But the single piece of gear that really makes the OF/WST two trainers in one is the independent tactics flight generator. It permits an instructor to initiate flight parameters – heading, altitude, and ground speed – for a purely tactical problem without cutting into the flight segment.

When a student is ready to take off in the OF/WST, the flight segment's digital computer is programmed to respond to pilot and instructor inputs for the whole range of aircraft performance; it determines airspeed, altitude, attitude, center of gravity, fuel consumption rate, and weapon delivery.

Once whatever flight conditions required for a given problem have been fed into the computer, it is easy for the instructor to enliven the RP's day by adding unexpected random conditions and/or predictable malfunctions at any point in the problem. Then he can sit back and watch the RP try to cope with the foul-up by monitoring a

duplicate set of cockpit instruments and indicators as well as recorders provided for optimum problem control and for use in critiques and performance evaluations.

When a tactical problem is being run on the 2F84, the same general procedure applies. Equations for navigation, elevation, and target position are solved by computer after they are established by the instructor who also controls changing tactical situations and selected malfunctions.

Since the tactics portion of the 2F84 is also capable of almost perfectly simulating the *Corsair II's* AN/APQ-116 radar and electronic countermeasures equipment, the instructor can cover the whole spectrum of the aircraft's wide-ranging tactical capability – from terrain following and ground mapping to target acquisition and assault.

The realism of a flight or tactical problem is heightened by an intricate landmass simulator which presents a terrain display that includes both elevation information and geographic data (lakes, rivers, towns, forests, etc.). Since the two 18-inch photographic transparencies employed for landmass simulation are scaled at 1:5,000,000, the trainee can "see" a land area equal to more than half the United States.

The built-in independence of the two portions of the 2F84 enables instructors to program any given flight or tactical problem for an RP without using the whole system. Conversely, the unique capability for independent operation of the tactics and flight devices permits training an RP in radar techniques at the same time instruction is being given to another RP in instrument flight.

Specifically, the diversity of the simulator in its independent modes permits operation of the flight segment, with the tactics device turned off; of the radar landmass simulator in the tactics portion only, with the flight portion off; and of both the flight and landmass simulators working on two separate problems simultaneously.

There are in existence today four 2F84's. One is at NAS Cecil Field, Fla., home of the East Coast A-7A training squadron, VA-174, and all operational East Coast A-7A *Corsair II* units. Another is located at NAS Lemoore, Calif., home plate for West Coast A-7A squadrons. The other two are now being converted to simulate the latest version of the *Corsair II*, the A-7E.

At Cecil Field, the *Corsair II* OF/WST is one of three A-7A trainers operated by detachments of the Fleet Airborne Electronics Training Unit, Atlantic Fleet (FAETULant). The other two training aids for the A-7A at Cecil Field could be aptly described as being subordinate to the 2F84, but they both play an integral role in the training of up-and-coming *Corsair II* pilots. They are Device 2C15 (a cockpit procedures trainer or COT) and Device 15A18 (which simulates the AN/APQ-116 radar system).

These two subordinate *Corsair II* trainers are housed in the Naval Air Maintenance Training Group (NAMTG) headquarters building. The 2F84 is in its enclosure nearby. This is not a permanent arrangement. By June of this year, if the schedule holds, one of the converted OF/WST's for the A-7E and another COT will be brought aboard the station. Eventually all five devices will be in a single building.

Every Naval Aviator transitioning to the A-7A knows that Naval Training Device 2F84 plays a very large role in the program the Navy has created to get him ready for the day when he climbs into the cockpit of a *Corsair II* for a launch on his first operational mission. The fact that the *Corsair II* OF/WST, the Rolls-Royce of simulators, so realistically duplicates just about every situation the pilot might face at the controls of the actual aircraft helps in no small measure to assure his success in the Fleet.

The Training Syllabus for the A-7A

All the A-7A devices now at NAS Cecil Field come under the working control of a group of 17 enlisted tradevmen (pp. 13-14) headed by Master Chief TD Clifford F. Tully, a real professional. He prepared the original basic A-7A training syllabus for all the devices at Cecil Field until the training squadron was organized sufficiently to write its own. Represented by a thick, complex manual that spells out every step a potential *Corsair II* pilot must follow in the trainers, Tully's *modus operandi* takes the RP through every phase of A-7A flight and tactical operation. It is still the basis for training at Cecil Field.

Because the *Corsair II* is such a new aircraft, the type of pilot coming into this program differs from the norm. A-7A trainees are actually Naval Aviators with varying amounts of flight hours in other aircraft types. Until recently, whole squadrons made the move to the A-7A at the same time.

"The incoming A-7A RP is normally from an F-8 *Crusader* or A-4 *Skyhawk* squadron," Chief Tully says. "He attends the usual indoctrination courses, such as those on survival, but his actual *Corsair II* training begins with NAMTG instruction on the aircraft systems. Of course, he also sits in on squadron lectures and he must learn the NATOPS manual forward and backward."

During the advanced stages of NAMTG instruction, the RP gets emergency procedures training. He must have three hops in the trainer on emergency procedures and one hop on flight procedures before he can fly the airplane. The three COT emergency hops can be made in either the COT or the OF/WST, but the flight procedures

hop must be in the OF/WST.

The four trainer hops comprise the first of four phases of indoctrination VA-174 has established for aviators who transition to the aircraft at Cecil Field. The full-blown title for this first phase is Aircraft Systems Familiarization and Emergency Procedures.

There are four simulator periods in Phase I, each representing one of the hops. Together, they account for 5½ hours of a student's time:

- Aircraft Systems Familiarization and Normal Procedures (1½ hours), during which an RP gets his cockpit checkout, learns normal systems operation, makes preflight checks, and has an indoctrination flight.
- Introduction to Emergencies (1½ hours) wherein the RP makes preflight checks and then is introduced to emergency procedures that occur during ground checks, takeoff, climb and cruise, descent and landing, and shutdown. There is also an ejection and bail-out review.
- Emergencies (1½ hours) which start with the preflight checks followed by the introduction of random emergencies.
- The course, Compound Emergencies and Review (1 hour), separates the men from the boys. "When the replacement pilot comes back for a COT-4," Chief Tully says, "he can expect two or three emergency situations at the same time. The instructor may give him a flap or gear failure, then turn around and fail his entire hydraulic system."

Phase II, otherwise known as Instrument Navigation and Emergencies, is next. Flown in the 2F84, it covers three periods and five hours:

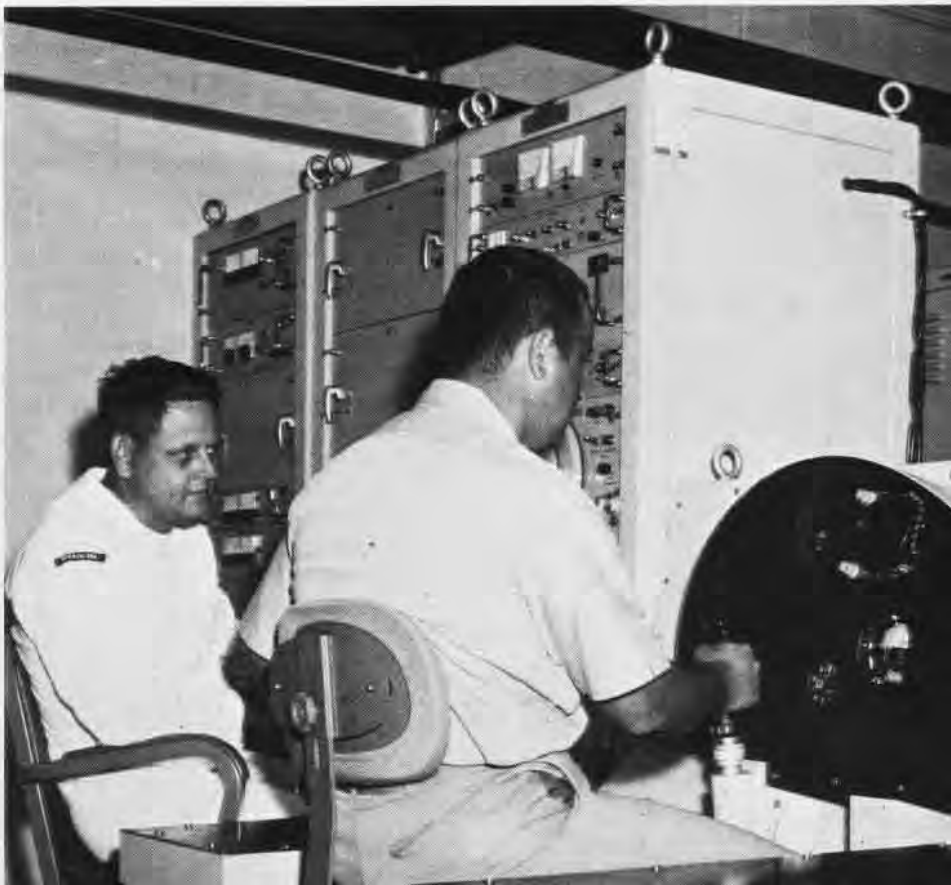
- Trainer Familiarization and Basic Airwork (1½ hours), designed to take the replacement pilot through preflight cockpit checks, taxi and takeoff, climb, basic airwork (turns, speed changes, speed brakes, etc.), slow airwork and stalls, AFCS procedures, APC landings (touch-and-go), final landing, and shutdown procedures.
- Instrument Navigation (2 hours), in which the RP uses all operational navigation gear just as he would in the airplane while the instructor monitors his check points and position on a plotting board. The instructor will probably give him some emergencies along with the "nav" to keep him jumping. In this hop, the RP does not use the radar system.
- Instrument Navigation, All Systems (1½ hours), generally follows a radar indoctrination hop actually considered a part of the next phase of training. This includes a workout in navigation gear plus radar and the ASN-67 navigational display.

Phase III is called Radar Familiarization and Interpretation:

- AN/APQ-116 System Familiarization (1½ hours), including ground check, modes of operation, ranges, set clearance, antenna tilt, and controls.
- AN/APQ-116 Mission Profile with all Modes (1½ hours), covering ground check and "round robin" radar navigation over both flat and mountainous terrain and including target identification, altitude changes (high- and low-level), control of tilt, range and video, AOI information, and radar.

Once he's checked out in the aircraft and knows its systems, the replacement pilot is ready to enter the last and toughest phase, designed to put all he's learned into one big package for a simulated, low-level attack bombing mission over enemy territory. To teach instrument navigation, radar, electronic countermeasures, emergencies, and weapon delivery, Phase IV has two hops. In the first, Chief Tully explains, "We give the replacement pilot his targets and monitor the success of his mission." Hop number two – the last the potential *Corsair II* pilot makes in the OF/WST – involves conventional weapon delivery. During it, the pilot learns how to select the proper switches to load, arm, and deliver all the conventional weapons the A-7A could carry.

Phase IV takes about three hours to complete, but the time varies. Of course, while he is flying the final three phases of the trainer program, the RP is also flying a *Corsair II* and putting into practice what he has learned in the trainer. With Phase IV completed, he leaves the training environment and joins an operational A-7A squadron.



Tradevmen on the Job

It takes a special breed of cat to operate, maintain, and help train pilots in a major Naval Aviation training device like the A-7A *Corsair II* Operational Flight/Weapon System Trainer. At Cecil Field it takes 12 highly-trained, skilled enlisted training device men (tradevmen) who know the OF/WST's complex computerized innards like the backs of their hands.

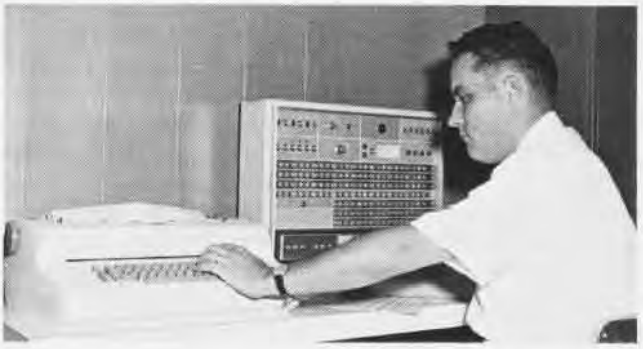
Along with four other equally well-trained tradevmen (TD's) who work with the other two *Corsair II* trainers, this group copes with every phase of A-7A simulator operation and upkeep at the A-7A home base.

Heading up the Cecil Field TD team is Master Chief Tradevman Clifford F. Tully. He is an "expert's expert" since he has been involved in every phase of development and operation of the A-7A simulator since the Navy put out the word it was going to create a major training device for the *Corsair II*.

"I was stationed at FAETULant headquarters in Norfolk when the Navy decided to build the *Corsair II*," Chief Tully recalls. "We were told that two simulators would be built for pilot training. One would be sent to Cecil Field, the other to NAS Lemoore, Calif. The Naval Training Device Center in Orlando was given the job of coordinating the construction of the unit and monitoring its progress. Production of the trainer began in 1965.

"About this time, a Fleet project team was established to monitor the operation and to provide information to the contractors regarding what the Navy wanted the simulator to accomplish. The team was composed of representatives from ComNavAirLant and ComNavAirPac, the Naval Training Device Center, the East and West

CHIEF TULLY, *at left, checks the tactics servo system. Above, TD3 J.S. Halpin loads external stores on A-7A trainer. From this console, the instructor monitors the entire "flight" complete with emergencies. Below, RD1 M.C. Phillips types a patch into the digital computer.*



TD1 B.F. *Abshire (left), one of Cecil Field's Tradevmen, is repairing a printed circuit card for the OF/WST computer. Above, TD3 Halpin debriefs LCdr. H.P. Kober of VA-174 just after his trainer "flight."*

Coast A-7A training squadrons, Electronics Supply Office (ESO), Aviation Supply Office, Naval Air Systems Command, and CNO. I was named FAETULant representative."

Members of the team were soon engaged with contractor personnel in a series of conferences which included:

- Mock-up review, designed to establish the boundaries of simulation capability of the OF/WST and to determine such other requirements as an instructor would need to monitor pilot reactions.
- Provisioning conferences among the manufacturers, NTDC, ESO, and FAETULant to establish a supply and support pipeline for maintenance and operation of the simulator.
- In-plant test and checkout sessions, in which a training squadron pilot, a test pilot from Ling-Temco-Vought (builder of the A-7A), and Chief Tully flight-checked the trainer and evaluated its capabilities.

"While the trainer was being built, FAETULant was concerned with getting together a qualified crew to operate and maintain it," Chief Tully says. "Since I had been included in the planning phases, I was named CPOinC of the TD team. It became my job to grab the sharpest men I could find.

"Those who would be working with the OF/WST were senior petty officers, who were 'B' school graduates and qualified for additional training in digital systems, and younger petty officers who had graduated from 'A' school. Those who received ten weeks of digital instruction at Great Lakes followed it up with what we call 'factory school' in the trainer at Cecil Field."

Factory school lasted 14 weeks. During this training, the TD's learned how to maintain and operate the trainer and were given added instruction in its specific digital computer. They came out of this training qualified to operate and maintain the OF/WST, but they were not yet ready to assist as instructors. Before they were considered expert enough to put replacement pilots through the wringer, they were required to take the same basic aircraft instruction that qualifying pilots must have. This was provided by the NAMTG at Cecil Field.

It was while the training program for the TD team was underway that the 2F84 actually arrived at Cecil Field and was placed in the enclosure built for it. And, like the men who would eventually be training pilots in it, the simulator still had to prove itself qualified for its vital mission before it could receive the stamp of approval for full service.

"First, there was an acceptance test," Chief Tully says. "That was handled by NTDC with a qualified pilot from the training squadron and a FAETULant representative – me – standing by. All discrepancies were noted during this test; the manufacturers had to eliminate them.

"After the acceptance test was completed and the student pilots were starting to transition to the A-7A, the TD's conducted a 'maintainability verification' test. During the three months it lasted, the trainer was operated for 16 hours a day, seven days a week, and was maintained each day during the remaining eight hours. All this proved that the trainer could take it, could stay 'up' with only eight hours of maintenance a day. It could take the rough run – and then some."

Once all the testing was completed and transitioning pilots began to receive their indoctrination at a constantly increasing rate, the TD's under Chief Tully settled down to a fairly regular schedule. The working day for the A-7A simulator crew goes like this:

0600 – Day crew arrives. Loads flying tape into computer and checks trainer for correct operation. Corrects all discrepancies or logs minor discrepancies so instructors can take these into account in briefing students.

0700 – Building clean-up, coffee on, schedule for the day checked, student cards pulled and placed in the instructor room.

0800 – First student arrives. Instructor briefs him on the type of hop he's to make and answers any questions.

0800-1600 – Hops all day. TD's not instructing attend school (their own rating and digital instruction program) until 1000 or work on such housekeeping chores as building upkeep, supplies, or repair of units pulled for workbench overhaul.

1600-2400 – Night crew comes on, finishes any scheduled night hops, but for the most part checks logbooks for discrepancies noted during the day and works them off. Time remaining is used for preventive maintenance. It takes six months to go through all systems and clean, test, and check them out completely. Then the cycle starts again.

Although this schedule merely skims the surface of what is expected of an A-7A simulator TD at Cecil Field, it does indicate that the 12 men Tully supervises are fully qualified to tackle any problem they might encounter with the OF/WST. Chief Tully is admittedly proud of the team he's put together.

"We all wanted to prove a point," he says. "We wanted to show that a group of conscientious TD's could maintain a complex digital trainer without any outside civilian engineering help whatsoever – and we have. In two years of operation, we have never had to ask for help. We even handle the complete programming of the computer, a job way above and beyond the requirements for a TD in this field."

As further proof of the high quality of the men, Chief Tully points out that every one of them has passed at least one advancement examination during the two years they have been together. Considerable credit for the high advancement rate must be given to the rugged rating and digital training program conducted by the A-7A TD's. Actually, it is so good that TD's from other activities find it worth their while to sit in on classes during their own time.

This would seem to prove that the Operational Flight/Weapon System Trainer and the pilots who learn how to fly the A-7A *Corsair II* in it are in the very best of hands.

Not many men witness an aerial replenishment. For PH1 Bob Milton, the dramatic maneuver provided a study in design and a startling realization of the closeness involved when an A-6 tanker refuels an A-6 attack plane. The views shown here are seen most frequently by Navy operational jet pilots.

Fifty Years Ago

From the weekly reports of the Director of Naval Aviation for January 1919:

On December 28, 1918, an HS-1 seaplane flew over Hampton Roads for two hours. During this time radio telephone signals were made from Washington. According to the operator, the signals were so strong that he was able "to understand every word of the conversation without difficulty." He thought it possible that the signals could have been heard 100 miles further away.

A 3-1/2-week course was instituted at Key West for the instruction of Naval Aviators (seaplane) in gunnery, bombing and Davis gun work. The ground course included range work with the Lewis gun, instruction in ring and bomb sights, bombs, Davis gun, and ground camera work.

An experiment was carried out in Miami to determine how much gasoline an HS-2 could carry to gain maximum time in the air without refueling. There were added two tanks of 65 gallons each under the forward deck; one 30-gallon tank in the fourth compartment, and a reserve oil tank with a 15-gallon capacity mounted on the deck under the engine. The airplane flew off the water smoothly, the motor turning up 1,400 rpms. That being accomplished, two additional tanks with a total capacity of 45 gallons were placed under the seats of the main cockpit. This gave the machine a total gasoline capacity of 290 gallons. (No report was made on how the aircraft flew with this load.)

The Aerographical Department at Chatham, Mass., reported that it lacked only an anemometer or wind velocity recorder to make it practically complete. The department already had installed a rain gauge, sunshine recorder, nephoscope, maximum and minimum thermometers, thermograph and hydrograph. Weather had been something of a problem. High winds and rain had curtailed the exercising of the pigeons and some flights were entirely cut out. Chatham advised: "The sexes have been separated preparatory to mating and we find we have about ten extra cocks. If Bay Shore, Montauk or Rockaway have extra hens, no doubt an exchange can be effected."

At Anacostia, Rear Admiral Robert E. Peary made an inspection of the station to acquaint himself with the possibilities of exploring polar regions by air. After a tour of the station, he was more enthusiastic than ever about the possibilities of using aircraft in his next expedition.

On Monday, December 30, 1918, in an H-16 with 11 passengers, Lt. T. C. Rodman made a test endurance flight at Pensacola. The weather was unfavorable with low-lying clouds and unsteady air conditions. The flight started at 6:50 A.M. and proceeded until 4:02 P.M. Strong cross winds of from 24 to 28 miles per hour lessened the ground speed materially. The actual mileage covered was 581 nautical miles.

Coco Solo removed the motors on flying boats faster by building a scaffold, so that on top there was an engine bed with a platform on each side. The scaffold fitted over the front of the boat, and the engine bed was aligned with the engine bed of the boat. Thus it was easy to slide out the motor on the scaffold and lower it to the ground.

RAdm. Byrd Enters Hall of Fame

By Izetta Winter Robb

Rear Admiral Richard Evelyn Byrd, Jr., Naval Aviator #608, renowned as a pioneer in the use of aviation in polar exploration, was enshrined posthumously December 17 in the national Aviation Hall of Fame, Dayton.

The highlights of RAdm. Byrd's extraordinary and multifaceted career were presented by Vice Admiral Thomas F. Connolly, DCNO(Air). A member of the Byrd family received a plaque commemorating the occasion.

Other entrants into the Hall of Fame at the same time were: Amelia Earhart Putnam, an early, record-setting aviatrix; Colonel John A. Macready, USAF (Ret.), copilot on the first non-stop, transcontinental flight from Long Island to San Diego on May 2, 1923, and holder of the world's altitude record in 1926; and Igor I. Sikorsky, famed not only for designing and building the world's first multi-engine aircraft which he flew in 1913 but also for his distinguished contributions to the development of modern helicopters.

Rear Admiral Byrd now joins the pioneers of Naval Aviation already in the national Aviation Hall of Fame: Commander Theodore G. Ellyson, USN (deceased), Naval Aviator #1; Eugene Burton Ely (deceased), the first pilot to land an airplane on a ship and take off from it; Lieutenant Colonel Alfred A. Cunningham, USMC (deceased), Navy Aviator #5 and Marine Corps Aviator #1; Rear Admiral Albert C. Read, USN (deceased), Naval Aviator #24 who commanded the first airplane to complete a crossing of the Atlantic Ocean by air, the NC-4; and Admiral John H. Towers, USN (deceased), Naval Aviator #3, whose leadership in Naval Aviation brought him to high commands in WW II.

RAdm. Byrd was a graduate of the Naval Academy, class of 1912. He began his flight training in August 1917 and was designated a Naval Aviator May 10, 1918. After brief duty at Pensacola, he served for the remainder of WW I as the commander of U.S. Naval Aviation Forces in Canada, with additional duty in command of the U.S. Naval Air Station at Halifax.

From then on, he was involved in daring projects and far-reaching expeditions. In April and May 1919, he participated in the navigational preparation for trans-Atlantic flights of the NC planes, the Navy's giant flying boats, by designing several instruments. He went with the squadron as far as Newfoundland where he was to transfer to the ill-fated non-rigid C-5 airship. The C-5, caught in a storm, blew away unmanned.

The mid-Twenties saw the name of Richard Evelyn Byrd in the headlines again and again. He organized and assumed command of the Naval Flying Unit which accompanied the 1925 Polar Expedition of Mr. Donald B. MacMillan. The next year, on leave from the Bureau of Aeronautics, he headed the Byrd Expedition to the North Pole. On May 9, 1926, he and his assistant, Chief Machinist's Mate Floyd Bennett, flew from Spitzbergen over the North Pole, a feat for which both received the Medal of Honor and the Distinguished Service Medal.

The year 1927 marked his trans-Atlantic flight in the *America* for which he received the Distinguished Flying Cross. Unable to land in Paris, he daringly directed his plane to make a landing in the water at Ver sur Mer, at night, without serious injury to his crew: Bernt Balchen, Bert Acosta and George Noville.

From 1928-1930, while still attached to the Bureau of Aeronautics, he organized and commanded the Byrd Antarctic Expedition, and on November 28, 1929, he was flown in the aircraft named *Floyd Bennett* from the expedition's base at Little America for a flight over the South Pole, thus becoming the first man to fly over both the North and South Poles. He led other Antarctic expeditions: one in 1933-35,

EXECUTIVES *of the Byrd Antarctic Expedition are Clair Alexander, Ralph Shropshire, Cdr. Byrd, Richard Brophy and CPO Harold I. June (August 1928 photograph).*

and still another in 1939-1941.

His service in WW II included the development of cold climate clothing and equipment protection. Special missions took him to the European and Pacific theaters of war. His most important contribution was a survey of islands in the south and southeast Pacific in which he inspected potential base sites and paved the way for their establishment.

In 1946, he was technical advisor to the Navy Antarctic Expedition, Operation *High Jump*, a force of 13 ships and about 4,000 men. In the next decade, he continued his Antarctic commitment by becoming officer in charge of U.S. Antarctic Programs and holding an advisory position in connection with Operation *Deep Freeze* which was responsible for the Antarctic phase of the U.S. participation in the International Geophysical Year, 1957-59.

But his interests were not confined to flight and exploration. In 1949, he served as founding chairman of the Iron Curtain Refugee Campaign of the International Rescue Committee; in the same cause, he was co-chairman of Operation *Brotherhood*.

In addition to the Medal of Honor, Distinguished Service Medal with Gold Star, and the Distinguished Flying Cross, RAdm. Byrd received the Navy Cross, the Medal of Freedom, the Legion of Merit with Gold Star, the Commendation Ribbon, medals commemorating his Antarctic expeditions, as well as service medals and honors from many scientific societies and foreign governments. The guided missile destroyer, *Richard E. Byrd* (DDG-23), was launched and christened February 1, 1962.

After his death March 11, 1957, he continued to receive honors as one of the great explorers of all time. He was instrumental in charting some two million square miles of the earth's surface, previously unseen by man.

On the Avenue of Heroes on the Virginia side of the Memorial Bridge, Washington, D.C., is an eight-foot statue of RAdm. Byrd, designed by Felix de Weldon. The figure, depicting the admiral in full cold weather dress, is mounted on Italian white marble to simulate a snowfield.

On the pedestal supporting the memorial bust of the explorer at McMurdo Station, Antarctica, are inscribed Admiral Byrd's own words, "I am hopeful that Antarctica, in its symbolic robe of white, will shine forth as a continent of peace, as nations working together there, in the cause of science, set an example of international cooperation."

Cubi Supports Navy Air Power

By Ltjg. Bill Dutcher

Once known as "Radford's Folly," NAS Cubi Point is demonstrating today its strategic importance in support of Navy air power in Vietnam.

The busy air station is located within the huge U.S. Naval Base, Subic Bay, on the western side of the Philippine island of Luzon, just across the historic Bataan peninsula from Manila. For Navy jets, Cubi is less than one hour away from the Seventh Fleet's Attack Carrier Striking Force (TF-77) on Yankee Station in the Tonkin Gulf. The importance of its strategic location has resulted in considerable buildup of Cubi Point's facilities and personnel in order to support the Navy's tactical aircraft in their combat operations against communist forces in Southeast Asia.

This formidable station, which comprises a 9,100-foot runway equipped with arresting gear, operations buildings, hangars, complete facilities for the repair of aircraft systems and engines, and which is adjacent to a carrier pier, was carved from the hilly jungle surrounding Subic Bay. The herculean project was undertaken by the Seabees late in the 1950's. During this project, 600-man Navy construction crews moved 20 million cubic yards of earth and rock – more than was moved to build the Panama Canal. Much of the naval air station was created by using the earth removed from the hills to fill in the adjacent waters. Asphalt, totalling 36,000 tons, was laid and more than 15 miles of roadway were cut through dense Cubi jungles.

During construction – a job that no private contractor would even attempt – critics dubbed Cubi as "Radford's Folly," referring to Admiral Arthur W. Radford, USN. As Commander-in-Chief, Pacific Fleet, in 1952, he urged that a major U.S. naval air station be constructed in this location.

WORK GOES *on round the clock in maintenance hangars such as this one. Cubi personnel strive to keep pace with their skyrocketing workload in order to give maximum service to Seventh Fleet aircraft. At right, ACI Joseph Nuhn is all attention as he keeps an eye on an approaching aircraft which appears clearly on a Cubi radar control approach panel.*

Events have proved his critics wrong. Today, NAS Cubi Point serves as a primary maintenance, repair, and supply center for more than 400 aircraft of the Navy's attack carrier striking force, now flying daily combat missions. All of the five attack aircraft carriers and the ASW carrier deployed to the Tonkin Gulf visit Subic Bay three or four times each deployment for routine upkeep, repairs and maintenance. Moored alongside Leyte Pier (named for the famous WW II Battle of Leyte Gulf) only a few feet from Cubi Point aircraft parking ramps, a carrier is readily accessible for special attention from Cubi Point's repair and maintenance support personnel. Ship and embarked air wing personnel can avail themselves of recreational facilities and take a well earned breather from round-the-clock operations.

To meet the demands of the Vietnam war, Cubi has expanded rapidly. New construction has included the building of two maintenance hangars, an aircraft paint shop, an avionics facility, an air cargo processing area, an officers' club and bachelor officer quarters, an enlisted men's barracks and a passenger terminal. Other facilities have been remodelled or expanded. The runway was lengthened by more than 1,000 feet, and arresting gear was installed.

The number of Cubi Point's population has nearly doubled during the past two years, and today almost 3,000 American military and civilian personnel are stationed there. In addition, the air station employs over 800 Philippine nationals. These people work round the clock, seven days a week, for an organization that provides the many services needed to support the Navy's efforts in the air war in Vietnam.

Each carrier operating on Yankee Station receives aboard daily at least one C-2 COD (carrier-on-board delivery) aircraft from Fleet Tactical Support Squadron Fifty (VRC-50) based at NAS Cubi Point. Bringing high priority cargo, personnel and letters from families and loved ones, these COD's are brought safely aboard the carriers as they recover planes returning from strikes against enemy targets. These planes frequently carry huge engines repaired at the Cubi jet engine repair shop. The shop turns out two completely repaired jet engines each day to keep pace with the demanding work load.

On the carrier flight deck, men are preparing jet aircraft for combat missions against enemy forces in Southeast Asia. In the ready rooms, pilots relax as they await their next briefing. One group laughs about the squadron party at the Cubi Officers' Club the night before they returned to the line. Others trade experiences while going through the Jungle Environmental Survival Training School, conducted in jungles near Cubi.

During their briefing, the pilots are shown aerial reconnaissance photography of the target areas. Much of this is processed at the Fleet Intelligence Center, Pacific Facility (FICPacFac) – also located at Cubi.

When a carrier has completed a line period, it usually sends its planes on ahead to Cubi about one day prior to docking there. Flying aircraft in takes less time than off-loading at the dock, and their early arrival gives Cubi maintenance crews more time for corrosion control and other repair work. It also gives the pilots an extra day ashore.

The activities of all naval air units at Cubi are coordinated by the Deputy Commander, Fleet Air Wings, Western Pacific. Included are local activities by squadrons from Yankee Station carrier air wings, which regularly rotate their aircraft to Cubi for maintenance and repairs.

The facilities at Cubi Point support not only the aircraft carriers of TF-77, but many other Seventh Fleet ships as well. Destroyers and cruisers on *Sea Dragon* shore bombardment missions off the coast of Vietnam also rely on the photographic intelligence work done by Cubi's FICPacFac.

Helicopters assigned to ships in the Tonkin Gulf are supported by another Cubi detachment — Helicopter Combat Combat Squadron Seven. While deployed to the Gulf, these helicopters transfer cargo, mail and personnel between various ships. They are also ready for search and rescue missions. While at Cubi, crew members from many of the helicopter units receive training in rescue, and first aid techniques from Paramedic Rescue Team One — the "diving doctors of Cubi."

Fleet Composite Squadron Five, Detachment Cubi, in addition to several other tasks, provides air and surface target services for training exercises often conducted by Seventh Fleet ships while at Subic Bay. Some of these targets are operated by remote control; others are towed by VC-5 aircraft.

Several other smaller units also call Cubi home. A heavy attack squadron maintains a permanent detachment at Cubi to repair their A-3 *Skywarrior* refueling aircraft which operate from Yankee Station carriers.

Working in close cooperation, the Naval Air Transportation Coordinating Office and the Naval Overseas Air Cargo Terminal handle more than one million pounds of high priority cargo each week.

Cubi is also the site of a Special Landing Force camp capable of billeting some 2,000 Marines who are periodically brought to Cubi from Vietnam combat zones for R&R.

Other units at Cubi are the Air Navigation Office, Philippines, which provides detailed aerial maps for ships and Marine Corps units, and the Naval Weather Service Environmental Detachment which is ready with the latest weather information for aircraft and ships in the area.

Captain Robert I. Myers, USN, recently relieved Captain Francis R. Roberts as commanding officer of NAS Cubi Point. During Captain Roberts' command, the average number of aircraft landings at Cubi increased by more than 5,000 per month. As "Radford's Folly" moves into its fifth year as a primary forward support facility for Navy air power over Vietnam, the tempo of operations shows no signs of slowing down.

Kenneth B. Dalecki

PILOTS *leave their Intruders (above) after flying to Cubi from USS Enterprise. At left, wheels-watch checks the landing gear of an aircraft to be sure gear is down. Below, an attack plane is shown in the shop being made ready for many more missions.*

Flights Aid Navigation System

Four New Omega Stations are Planned

Weapons Systems Test Division navigation engineers, NATC Patuxent River, late in 1968 flew a P-3 test airplane from the tropics to north of the Arctic Circle in order to help future navigators answer the question, "Where am I?" The flights to obtain measurements of nighttime *Omega* signals were part of the Navy's program to develop this radio navigation system.

Omega is similar to the long used Loran system, but uses radio signals of much lower frequency and higher power. Four *Omega* stations are now "on the air": in Hawaii, Trinidad, New York and Norway. Four more stations are planned. When the system of eight stations is complete, accurate radio navigation on a worldwide basis will be available to all users.

In more than three weeks of flying, the *Orion* stopped at the following ports of call: Canal Zone (Panama); Lima, Peru; Santiago, Chile; Guayaquil, Ecuador; Piarco, Trinidad; Lajes, Azores; Bodo, Norway; Mildenhall and Farnborough, England.

C. C. Sakran, head of the navigation engineering unit of WST's Anti-Submarine Warfare Branch, worked with the Naval Research Laboratory in planning the test flights.

Emergency Recovery Unit Built

ESERU Made from Scraps, Ingenuity

By modifying a standard Clark Tow Tractor with the addition of a salvaged wrecker boom and winch, two VA-122 chief petty officers at NAS Lemoore have created a new recovery unit and named it ESERU (Emergency Support Equipment Recovery Unit).

With ESERU available, ground support men can remove broken down support equipment. Previously a failure as minor as a flat tire could put a sorely needed tow tractor or mobile electric power plant out of commission for hours. The new unit saves valuable time which previously was lost in moving inoperative equipment to a repair activity.

ASC's Raymond R. Ogle and David N. Cox developed the design engineering necessary for the unique machine. AM2 Francis A. Stegman did the welding. ESERU still can be used to tow aircraft.

ESERU MOVES SUPPORT EQUIPMENT

Magnetic North Pole is Relocated

Survey Shows Move of Three Miles

Scientists from the Naval Oceanographic Office and members of VX-8 recently conducted an intensive survey to accurately locate the magnetic north pole. Using the squadron's NC-121K aircraft, *Paisano Dos*, and its onboard computer, they found that the pole has shifted approximately three miles northeast from its previous position. Charts showing the new position are being prepared.

SAFETY FIRST with a mirror *may well be the motto of the "Pit Nicker," VT-3's safety publication, being discussed by the squadron's C.O., Cdr. L. E. Brumback (L), and LCdr. G. K. Davis. VT-3's instrument flight training unit has flown 77,798 accident-free hours since September 1965.*

New LPH is Put in Commission

San Diego Home Port for New Orleans

The amphibious assault ship, USS *New Orleans* (LPH-11), was commissioned November 16 in Philadelphia. Dr. Homer L. Hitt, chancellor of Louisiana State University, was the speaker.

The helicopter-carrying ship, commanded by Captain Glen Even, is home-ported in San Diego, Calif.

New Orleans can launch more than 1,000 troops in vertical envelopment attack over the beach and behind an enemy's main line of shore defenses. The ship is manned by 87 officers and 507 enlisted men.

Flight Students to Soar Early

After Two Weeks, Move into Cockpit

Navy flight students will no longer spend many weeks of classroom hours waiting to get into the cockpit of an aircraft. Aviation officer candidates reporting to NAS Pensacola now receive two weeks of military indoctrination and go directly to Training Squadron One, NAS Saufley Field, for seven weeks of primary training.

The change is an effort to pinpoint early the man who is not adapted to flying, according to Vice Admiral Bernard M. Strean, Chief of Naval Air Training. "Previously, we gave the man weeks of training, commissioned him as an officer, and then put him into an airplane," he said. "Under the new system, we can quickly determine if he is going to get airsick or is otherwise not adapted for flight training."

The aviation officer candidate will return to the Naval Aviation Schools Command at Pensacola for training after he successfully completes 26 hours of flight time. After seven weeks at the schools (16 weeks after his induction), he is commissioned an ensign.

PROBLEM

Getting to see each issue of *Naval Aviation News* on time? Have a subscription sent home. Response indicates it goes over big with the wife, kids, and even the neighbors.

ERA'S END

By PH1 Robert E. Woods

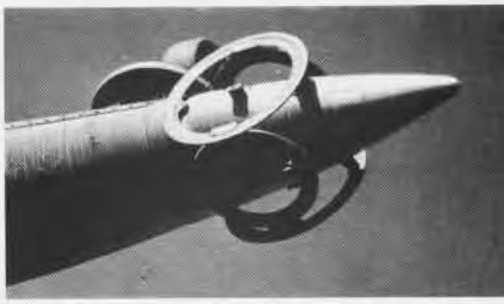
Like a flock of sea gulls waiting for the fishing fleets to return, the last of the Navy's flying boats sit along the bank at the entrance to San Diego Harbor.

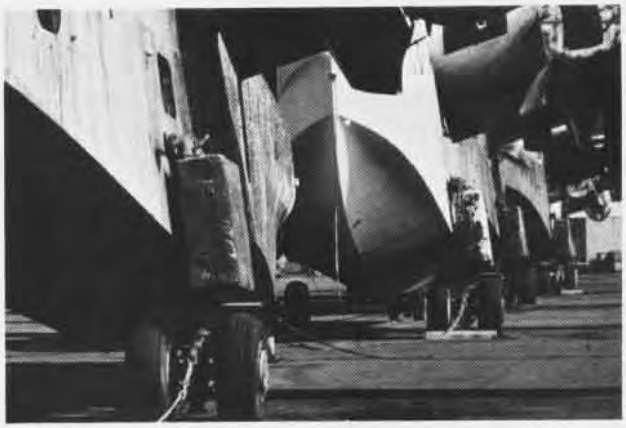
The P-5 *Marlin* – first introduced into the U.S. Navy in 1952 – has been phased out, marking the end of a long line of seaplanes.

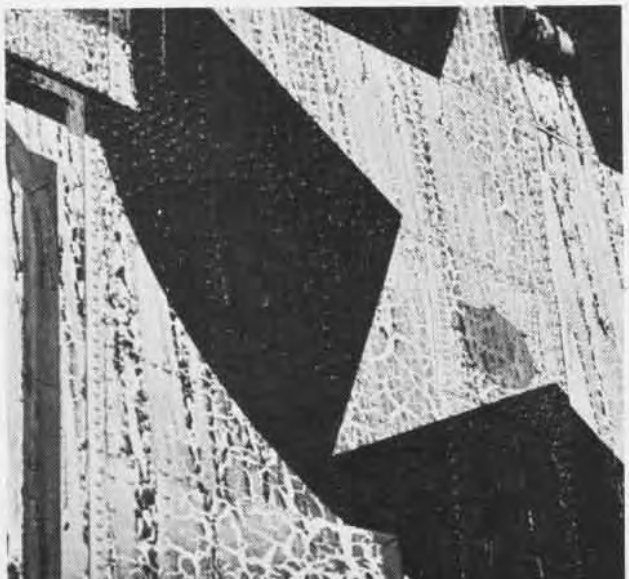
Seaplanes have been a familiar sight to residents of San Diego. The first airplane used by the Navy was a seaplane. The A-1 began the era of waterborne aircraft from NAS North Island in 1912. Last summer a P-5, with gull wings and a massive fuselage, lifted from San Diego Bay for a final flight to Patuxent River, Md., and ultimate display in the Smithsonian Institution's Armed Forces Museum.

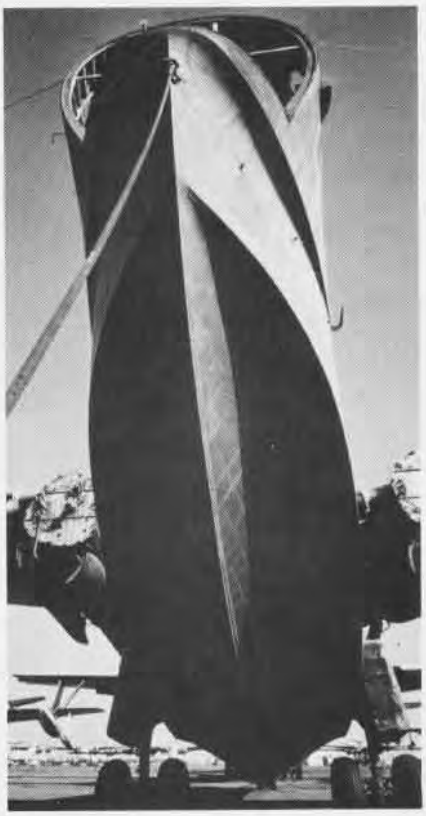
The remaining P-5's, preserved in a storage area at North Island, stand row upon row like soldiers in formation. The aircraft have been stripped of all useful equipment. Traces of corrosion appear – the mark of age.

Wing tip to wing tip, tail to nose, the flying boats are held fast by crossed anchor lines. So ends an era.









Ralph Payne

"The ramp

Bob Moeser

on and off a carrier: CATS AND TRAPS

represents the ultimate in democracy"

Bill Powers

Cat shot, trap – these words separate carrier pilots from all other aviators. How little I knew about these words when I signed up. But I recognized that they were the goals of all my buddies in preflight. When I had my first cat shot and my first trap, I was along for the ride. People more experienced than I had determined long ago that what I was doing was SAFE. Even when I went to the Fleet, I was informed of procedures and limits of cat shots and traps, and I never questioned the facts. (No nugget would dare!) Little did I dream then that

A Test Pilot Report by Lt. W. R. Needham

CATS AND TRAPS

I'd be part of the team that determines the carrier suitability of aircraft and is the authority on procedures and limits.

Now I'm stationed at the Naval Air Test Center, Patuxent River, Md., and working with the people who determine the procedures and limits by which airplanes are flown from carriers. I'm still no expert as to how the crystal ball functions, but what knowledge I have of catapulting and arresting evaluations I'd like to pass on to you. Perhaps all I can do is reassure you carrier pilots that what you are asked to do aboard ship has been tested and evaluated by a small group at Patuxent River.

The group, the Carrier Suitability Section of the Flight Test Division, came into existence on May 27, 1949. Carrier Suit testing had formerly been a part of the old Carrier Branch which today is called the Flying Qualities and Performance Branch. By this time, the aircraft carrier had proved by her use in WW II that she was the Queen of the Sea, capable of protecting a whole fleet or providing close support for an invasion. The new "jet" was appearing over the horizon with its increased airspeed and weight. In the light of these two significant revolutions (among others) in Naval Aviation, the Carrier Suitability Branch was formed to investigate, develop and evaluate new techniques and concepts for operating airplanes aboard carriers.

What has Carrier Suit accomplished over the past 19 years? Well, let's take a look.

It has played an important part in the difficult task of marrying airplanes to the various types of catapults and arresting gears in the Fleet today. The performance of each new or modified catapult or arresting gear installed on a ship has usually been evaluated by Carrier Suit before any Fleet pilot is required to use it. Needless to say, each aircraft must be certified for use in each type of arresting gear used afloat and ashore and for launch from each type catapult. (If we can't do it, we don't ask you to do it.)

Carrier Suit aided in the development of the angled deck, the mirror, and the Fresnel lens. All have greatly improved the safety of carrier operations.

How do you all like those *white floodlights* (those of you who are lucky enough to be on a carrier which has them) and the *red droplights*? Those two developments were originated by Carrier Suit, and I believe you will admit they help a lot, especially on those dark, rainy nights.

Approach power compensator (APC), the answer to an F-8 pilot's prayer, has been and continues to be developed and tested. Eventually every airplane in the Fleet will have APC installed to aid the pilot coming aboard ship. Direct lift control (DLC) is right around the corner.

The Marines at Carrier Suit have greatly speeded the development of short airfield for tactical support (SATS). Our pilots have certified each SATS site and each aircraft which will be used on it.

The original idea for the all-weather carrier landing system (AWCLS) was born in 1950 in the Carrier Suitability Section. Seven years later, on August 20, 1957, the first fully automatic carrier landing was made aboard the USS *Antietam*. The full capabilities of AWCLS are still being developed, and the Fleet is now seeing the first fruits of this program with operational SPN-10, SPN-42, and SPN-41 landing aids aboard carriers and Mode IA/II approach equipment in F-4 and A-7 aircraft.

Catapult Testing – From the time an aircraft is spotted on the deck until it is airborne, Carrier Suit is responsible for every phase of catapult or deck launching. Stop and think about it: the number of evolutions, techniques, and limits involved in this exercise.

Can an aircraft be successfully attached to a catapult, either nose tow or bridle? Can it survive an off-center

Ralph Payne and Bob Moese

cat shot? Can it be launched with external stores, and, if so, can it be launched with stores to the structural limits of the airplane? Does the bridle clear the airplane and stores when it releases? Does the aircraft assume a flying attitude when released or must the pilot program the stick, i.e., does it depend on pilot technique? These are a few of the questions Carrier Suit is interested in and tries to answer. But one of the most vital questions we answer, necessary to our longevity, is, "At what minimum end airspeed can an aircraft be successfully launched from an aircraft carrier?"

The minimum end airspeed can be defined as the minimum speed for acceptable flying qualities, proximity to stall speed, proximity to the speed required to maintain altitude, aircraft rotation rate and/or excess sink off the bow. A minimum end airspeed is established for every airplane at specific weights and aerodynamic configurations. Carrier Suit project engineers and pilots analyze flight data to predict the minimum end airspeed, a time-consuming and sometimes frustrating task. Thrust available (TA) and thrust required (TR) curves must be constructed showing the variation of TA and TR with airspeed. These require data collected on numerous flights and at many weights flown in the take-off configuration.

This involves two hours, each flight, flying around with the gear down! With the TA and TR curves drawn, what information do the curves give us and what do we do to get the minimum? First of all, for any end airspeed, by taking the difference between TA and TR at that airspeed and knowing the weight of the aircraft, we can determine the acceleration available.

The least amount of acceleration normally recommended by Carrier Suit is 0.05G, which is roughly one knot per second. That's hardly perceptible on the airspeed indicator, but it is sufficient to collect your flight pay next month.

The shapes and relationship of the TR and TA curves have a great bearing on the acceleration available at a given airspeed off the catapult. If the TR curve increases very rapidly with decreasing speed, the airplane's minimum will most probably be based on proximity to the minimum speed to maintain altitude (intersection of TA and TR curves).

If this slope is shallow, temperature comes into play since TA is decreased with increasing temperature so that the intersection occurs at increasing speed with increasing temperature. The shape of this portion of the TR curve is particularly significant with respect to the airplane's reaction to a pilot-induced or rotation-induced pitch error. For instance, will an over-rotation (which effectively raises the thrust-required curve) cause the airplane to slow to an airspeed where it would be impossible to accelerate or even fly?

Now about rotation off the cat. Not all jets take a cat shot as nicely as the F-8 or A-7. Some of us have had to watch the airplane rotate (A-4) or rotate the airplane ourselves (F-4, RA-5C). A finite time is required to gain the desired attitude and during this time the airplane is sinking . . . *towards the water!* Here is another source of a minimum end airspeed (the airspeed at which the airplane sinks approximately 20 feet off the bow). It scares most people (including the pilot), especially if the wind should drop a couple of knots just as the catapult fires. How do we prove this theoretical minimum?

Shore-based cat launches are conducted to investigate airplane pitching rates, trim and pilot technique. The results are not necessarily representative of shipboard launches because of "ground effect." After the shore-based tests are completed, a carrier trip, the final proof-of-the-pudding, is conducted to prove – under fire – the minimum. This is not an easy task. Near perfect conditions are required to reduce the probability of error and thus the accuracy of the minimum. We start catapulting approximately 12

knots above our predicted minimum end airspeed and work down at safe intervals (two or three knots) until the minimum has been reached. Once we have done it aboard ship, we forward the data to NAEC, Philadelphia, for the Launch Bulletins. The bulletins are written with a recommended launching end airspeed of 15 knots above the established minimum.

Remember: A minimum is determined for every critical weight and aerodynamic configuration of each aircraft. In addition to catapult minimum work, we also determine the max crosswind allowable for catapulting each aircraft. A pilot from Carrier Suit first does everything asked of Fleet pilots.

As a result of the A-7A steam ingestion problem (*NANews*, July 1968), each new aircraft with a turbofan engine is required to complete a catapult steam ingestion program to prove the engine's suitability to the carrier environment. These cat tests and those discussed earlier are done for only one reason, so that on that black night (no moon, max weight, and high temperature) YOU can fly with confidence.

During the catapulting phase of our routine shake-rattle-and-roll tests to determine suitability of aircraft, ordnance, or avionics equipment, we normally build up for a couple of shots and then fire at 105% of max G both on-center and all possible combinations of six inches off-center-spot conditions. An F-4 with both burners going, oscillating down the cat doing 174 knots when it's turned loose, is a real ride!

Arrested Landing Tests – Catapult shots are hairy, but the pilot has little influence on the success of the shot; he either has the airspeed or he does not. Not so for a carrier approach.

No other task (some may question that) requires more of a pilot than a properly flown carrier approach. All carrier pilots are different from other aviators in one way: they must match their skill against the *ramp*. The *ramp* represents the ultimate in democracy. It will accept anyone regardless of age, rank, or experience. Carrier Suit determines the relative ability of an airplane and its equipment to make repeated, safe carrier approaches and arrestments.

Each new aircraft is required to meet structural limits spelled out in design specifications. The airplanes at Carrier Suit are subjected to each and every limit prescribed for the airframe.

Let's take a look at the four basic limits on arrestments that each pilot should, but usually doesn't, know much about: hook load, longitudinal acceleration, sink rate, and arresting gear capacity. *Hook load* is the force applied to the hook where it engages the wire. This force is a function of stopping distance, engaging speed, and aircraft weight. *Longitudinal acceleration* is a function of force applied and the aircraft weight, F = Ma.

The next limit is the one we hear most about . . . *sink rate,* that all-elusive phrase each LSO and C.O. talks about: "Don't go for it," "Don't ease gun," and other time-worn phrases. It is a cold hard fact that these airplanes do have limits and there are safety margins to which Carrier Suit must also adhere.

Last, but not least, is the *arresting gear* – capacity to absorb energy. No, don't think about the gear as you do your airplane, but believe me, its limit is as real as your airplane's, with the same disastrous results when exceeded. It you've seen a cross-deck pendant break, you know what I mean. Learn the four basic limits of arrestment.

The following are some of the tests which aircraft are required to perform successfully during a shake, rattle and roll.

The free flight (FF) engagement has an "anxiety factor" for me, second only to the ramp strike. Each aircraft is required to sustain an FF engagement. Hold it, careful, you wave-off-in-close types: this is not a license to steal! When we say FF, we do require some sink rate to accompany this exercise. Airplanes *will* break as a result of an FF at too low a sinking speed.

Some aircraft are also required to land nosewheel first at considerably higher than normal sink rates. The A-7 was demonstrated at 21 fps, nosewheel first. Generally speaking, Carrier Suit pilots do not initially conduct this test. The contractor test pilots do it while we observe. (Smart, aren't we?)

The roll-and-yaw test is the most interesting. It is an entirely new regime of flying: chasing the ball in uncoordinated flight. We do it with roll and yaw in the same direction and then in the opposite direction. What a job! Basically, it determines whether a nugget (Old Hands never do it!) can make the late line-up correction over the ramp, touch down on one wheel and survive the event. (Gear strength goes down with roll.) Surprisingly, it is possible, but usually you've lowered the already bad odds to an unacceptable level.

Next comes the max G arrestment. We go to 105% of the limit hook load

or the arresting gear limit, whichever is lower.

Another test that will interest some of you is the off-center engagement. We all try to land on that big white line, but to err is human. Well, Carrier Suit makes sure that it's safe. We purposely execute 20 feet off-center arrestments, and it's quite a ride. Catching the wire in the middle is preferable. This one is also done at 105% of max G.

I have saved the best for last – *sink rate.* Since I believe this is the most commonly abused aircraft limit, I'd like to dwell on it. Aircraft are designed to withstand a specified sink rate at a given weight, for instance, 24 fps at 35,000 pounds for the F-4B. That 24 fps is an absolute max; anything greater will cause damage. But the most important thing is that the 24 fps is for no more than two degrees of roll. All bets are off if any more roll angle is present at touchdown. For this reason and to compensate for glide slope error, Carrier Suit test plans go to only 82% of design sinking rate (19.6 fps for the 24 fps maximum case.) Take it from one who's been there, 19.6 fps is hard to get. We fly glide slopes up to six degrees. It's like making a bombing run except that you don't pull out of the dive, you hit the deck hard. The evolution is safe under controlled conditions or it wouldn't be done. We perform the exercise to provide safe airplanes and an envelope to fly them in.

For comparison, let's take a 130-knot airplane on a four-degree glide slope approaching a ship with a 30-knot wind on deck; the sink rate would be 11.7 fps. In order for us to get 19.6 fps out of the same airplane on the field, we must fly down a 5-1/4 glide slope. Believe me, that's steep. It would not take much "drop nose in close" to bend the airplane.

If one of your friends breaks an airplane on a steady deck, he's really blown it. Even if he flew the ball on the top of the mirror, his true glide slope would be only 4.7 degrees, which is less than the 5-1/4 degrees that Carrier Suit pilots fly routinely for data points. Under normal conditions with the mirror set for four degrees, the only way to obtain an excessive sink speed is with a rapidly sinking ball.

I hope I have, at the very least, caused a few of you to scramble for your handbooks and search the Launch and Recovery Bulletins to see whether the things I've said make sense. Unfortunately, not all the things we find wrong with new aircraft get fixed because there are many other considerations. But at least you can be sure Carrier Suitability pilots are Fleet pilots working for the Fleet. If you have a question that no one in the area seems to be able to answer, give us a call. We may not be able to answer it, but we are serious listeners.

SELECTED

A WINNING HAND *was dealt NAS Seattle when eight Naval Air Reserve Squadrons were awarded Naval Air Reserve Aviation Safety Citations for FY '68. Receiving their ninth consecutive awards were VP-60T1 (VP-891), VP-50T3 (VP-893), VR-61T1 (VR-893) and VR-61T2 (VR-894). VP-60T2 (VP-892) received its seventh consecutive award; VS-35T3 (VS-891), its fifth. Third consecutive awards went to VS-68T2 (VS-892) and VS-68T1 (VS-893).*

Rear Admiral Guest Honored

Rear Admiral William S. Guest, Commander, Naval Air Reserve Force and Chief of Naval Air Reserve Training, recently received the Joint Service Commendation Medal, presented by Vice Admiral William I. Martin, Deputy Commander in Chief, Atlantic Fleet.

Admiral Guest was cited "for exceptionally meritorious service while he was Deputy Commander, Naval Striking and Support Forces, Southern Europe. Through his personal initiative, inspiring and indefatigable leadership, Admiral Guest succeeded in raising the level of readiness for his forces significantly."

It was during the period covered by the citation (June 1, 1965 – March 7, 1967) that Adm. Guest was called upon to recover a thermonuclear weapon off the coast of Palomares, Spain. The bomb was lost January 17, 1966, when a B-52 and a refueling tanker collided in mid-air.

Admiral Guest was placed in command of Task Force 65 and was given the responsibility of recovering the bomb. It took 51 days of search to locate it. Because it was the first operation of its kind, recovery from a depth greater than half a mile required 23 days.

New 'Fly Navy' Chryslers

Recruiters from all over the country assembled in Detroit recently to accept 18 new "Fly Navy" Chrysler convertibles presented to them by the Navy League of the United States.

Each year the Navy League provides each Reserve NAS and NARTU with a new car for use in Naval Aviation officer procurement as well as for parades and other special appearances. The recruiting teams use the cars on visits to college campuses to recruit aviation officer candidates.

The Navy League has presented 148 convertibles since the program began in 1961. Mr. James M. Hannan, national vice president of the Navy League, made the presentation to Captain Guiseppe Bello.

Varied Career

A Reservist's interesting story came to light recently when AO1 John C. Crawford, NAS Seattle, recalled his military career which began a quarter of a century ago.

Crawford enlisted in the Canadian Air Force in 1943, though his home was in Seattle, because he did not have American citizenship and was a native of Parksville, B.C. This barred him from the U.S. Air Corps which he had wanted to join.

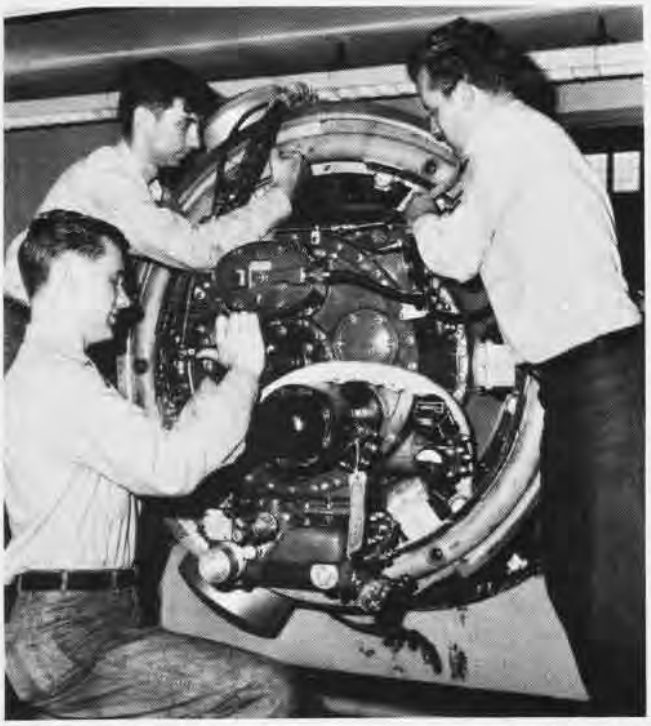
Attached to the RAF during WW II, Crawford served as a flight officer on *Lancaster* bombers. His plane was shot down over France in July 1944.

After two months in the French resistance movement, he was captured by the Germans and spent the rest of the war as a POW in a camp south of Berlin. On returning to Canada and being released from active duty, he came back to Seattle.

In 1949, after gaining U.S. citizenship, he joined the Naval Air Reserve at Seattle and became a member of VP-892. Called to active duty during the Korean conflict, Crawford served for 16 months. His Reserve participation before and after Korea has been perfect; he has never missed a drill.

Since affiliating with the Reserve, Crawford estimates he has flown a total of more than 2,500 hours.

AIR RESERVE



MEMBERS *of Naval Air Reserve Maintenance Unit T-1, ADR's William Cox(L),Hugo Vanderwall, John Kverness, check power plant.*

SKILLED PERSONNEL *work under supervision of experienced leaders. Above, ADJC Neil White (R) checks progress made by ADJ2's James Stensland and Ron Snow. Below, ADRC Thomas Paxton (L) completes check-off of the S-2 engine the men have fully repaired.*

Flight Readiness

Each year more than 130,000 Naval Reservists trade two weeks of their time as civilians to undergo two weeks of active duty training. It is this training which links them with the active duty forces and keeps Reserve units in readiness if needed.

Not long ago, three patrol squadrons and a maintenance unit trained at NAS Seattle. The four squadrons combined their skills and supported one another to increase their antisubmarine warfare proficiency.

Officers and men of VP-50T3, VP-60T1, VP-60T2 and NARMU-T1 worked around the clock. The flights they made and the ground activities in which they participated included electronic detection, ordnance, navigation and instrument flying and other ASW responsibilities.

This hardware cruise involved 250 officers and men, most of whom came from the greater Seattle area, but there were also Reservists from Oregon, Idaho and Montana.

ON PATROL

with the Fleet Air Wings

VP-28 Activities

VP-28 recently celebrated its 25th year of operation with an open house held in the squadron's hangar at NAS Barber's Point. Aircraft and equipment were displayed, and movies about patrol squadrons were shown.

Guests included Rear Admiral Fred E. Bakutis, ComFAirHawaii, and Captain Tom E. Sulick, ComFAW-2. Among those receiving Air Medals during ceremonies preceding the open house was the squadron's C.O., Commander Ralph R. Hedges.

Lt. Richard K. Smith, assistant personnel and public affairs officer for VP-28, represented Naval Air in Hawaii at the annual Navy League reception for the outstanding junior officers in the area.

The *Hawaiian Warriors* recently conducted a concentrated two-week training period for VP-65, a reserve squadron of 87 officers and 450 enlisted men from NAS Los Alamitos. VP-65 personnel were trained in Fleet operational, tactical, administrative and maintenance procedures, and land and sea survival.

VP-9 PPC Turns Submariner

During ASW exercises with the nuclear submarine USS *Snook* (SSN-592), a member of VP-9, Lt. Peter G. Guerrini, had an unusual experience. He was on the "enemy" team. He accepted an offer of touring privileges sent to the squadron at Moffett several weeks earlier by the *Snook*.

Playing the hunted rather than the hunter proved an interesting change for the patrol plane commander. Gradually acclimatizing himself to his new environment, he learned some of the tactics of evading the enemy and discovered that the sub "flies" much the same as an aircraft. He also learned at first hand the advantages of nuclear over conventional subs, features that have significantly increased the challenge to aviation ASW personnel.

Lt. Guerrini handled much of the communications between aircraft and sub during the exercise, so his time was well occupied – but he found time to decide that the chow on the sub was well worth the tour.

Another Medal for VP-47 Man

AMH2 Bob Starkey of VP-47, Moffet Field, who received the American Legion lifesaving gold medal for saving two boys from an icy death last winter while he was home on leave (*NANews*, November 1968, p. 30), has been awarded the Navy-Marine Corps Medal for his act of heroism by Rear Admiral Donald Gay, Jr., ComFAirWingsPac.

Four Moffett VP's in Search

Patrol Squadrons 9, 19, 40 and 48, based at Moffett, took part in the search for a Japanese pilot who crashed at sea last October. While ferrying a small plane from San Francisco to Tokyo, the pilot ditched approximately 700 miles southwest of Moffett. With Air Force and Coast Guard units, the patrol squadrons conducted a five-day, 24,000-square-mile search of the area, but found no trace of pilot or aircraft.

The Japanese firm employing the pilot thanked Rear Admiral Donald Gay, Jr., ComFAirWingsPac, for the extensive search by the squadrons.

VP-31 Back from Semi-annual Trip

Led by Commander Roy D. Snyder, Jr., C.O., VP-31 returned to Moffett Field from its semi-annual checkout trip to the Pacific.

Covering approximately 13,000 miles in 45 flight hours over a period of 11 days, the squadron visited the P-3 squadrons at Barber's Point, Sangley Point, Cam Ranh Bay, Naha, Iwakuni and Adak for which it trains pilots, aircrew and maintenance personnel. At each stop VP-31 reviewed the P-3 squadrons for quality and quantity of training received and obtained from each command its comments and suggestions.

The *Genies* of VP-31 now have two new Wave ensigns, Ann Marie Goyette and Faith Johnson.

"We will be specializing in personnel," said Miss Goyette. "One of us will eventually take over education services and the other will be assistant personnel officer."

VP-17's Last P-2 Flight

In November, the final VP-17 flight of a P-2 *Neptune* was completed when Commander Ralph Spaulding and Lt. Tom Griswold landed at NAS Whidbey Island. The squadron had transitioned to the P-3 at NAS Moffett Field and then moved to Barber's Point, Hawaii.

Cdr. Spaulding's flight concluded a long and productive history of VP-17 operations in the P-2. Flying it, the squadron won its E, the Maintenance Award, the Safety Award and the Isbell Trophy for ASW excellence. In the past three years, the squadron has operated the P-2 in the war zone through three deployments.

On its most recently completed deployment, the P-2's proved their worth through the detection and covert tracking of four enemy trawlers attempting to infiltrate South Vietnam with guns and ammunition.

The squadron now has a full complement of P-3's and is under the command of Commander C. R. Behnken.

VP-44's ORION, *above, climbs over Jan Mayen's 7,500-ft. snow-covered dormant volcano after air-dropping mail on the other end of the small island. At top right, A02 Ronald J. Regan takes in dazzling arctic scenery with the aid of the built-in sunglasses of his helmet. At lower right, A01 Bennett Hill (L) and AXC Robert Escobar shove mail out right on target.*

Arctic Mail Run

It takes a diplomatic bucket line to get mail from Norway to the 36 men on Jan Mayen Island, a Norwegian Loran station about 360 miles northeast of Keflavik, Iceland. People in Norway address it properly but send it to the Norwegian Embassy in nearby Reykjavik. From there it goes to the American Embassy which sends it to VP-44 at the U.S. Navy post office at Keflavik.

For 17 years, VP crews from Keflavik have been making the low pass over the rocky shore line of the island to drop the mail on the small gravel runway. VP-44 schedules a drop whenever a sufficient quantity of mail accumulates.

A typical mail run starts out early in the morning as a squadron P-3 *Orion* begins a 10-hour ocean surveillance mission. Two hours after takeoff, Jan Mayen's dormant volcano peak comes into view though it's still over 140 miles away. As the plane nears the island, two crew members don parachute harness, securing it to deck rings. Then, with the aircraft travelling at 160 knots, the men pry open the aft hatch and drop the mail. The pass and drop require skill and teamwork. VP-44 claims one exceptional drop. A mail package landed just ahead of the waiting men and tumbled to a stop almost at their feet.

VP-24's Flight over North Pole

In late 1968, a VP-24 P-3B *Orion* made a ten-hour, 4,000-mile flight over the North Pole from Keflavik to Thule AFB, Greenland. The flight was made to evaluate polar navigation techniques.

About 190 nautical miles from the Pole, LCdr. Davidson Luehring, pilot, descended to 200 feet and dropped a bathythermograph sonobuoy. Commander Charles H. Zilch, C.O. of Fleet Weather Facility, Keflavik, who supervised the environmental data collection flight, later learned that this bathythermograph stands as the northernmost and deepest (1,260 feet) water temperature reading obtained by other than surface methods. Four other successful bathythermograph samplings were made during the flight in areas which had never been investigated or where measurements had not been made in the past ten years.

The crew located the Office of Naval Research floating ice island, T-3 (*NANews*, September 1967, p. 18; June 1952, p. 13; May 1952, p. 27), and dropped a container of newspapers and magazines and a basket of fruit. It is impossible to land there during late summer.

When the VP-24 crew landed at Thule, they had recorded 16 pages of detailed weather observation and had shot color film of the ice and cloud cover. Meteorologists compared the photos with those transmitted by ESSA-6.

The flight proved that low-level aircraft work is feasible in the Arctic Ocean area although the year-round ice surface imposes severe restrictions on present ASW systems and tactics.

VP-24, commanded by Cdr. K. L. Geitz, is home-ported at Pax River.

at Sea with the Carriers

PACIFIC FLEET

Constellation (CVA-64)

Captain W. R. Flanagan, C.O., presented 57 Air Medals, one Navy Commendation Medal, seven Navy Achievement Medals and three letters of commendation to 69 crew members of CVA-64 and embarked CVW-14 as the attack carrier steamed toward Yokosuka.

It was a second honeymoon for 94 officers and enlisted men of CVA-64 when the ship put into Yokosuka after four months on the line on Yankee Station. The wives flew into Tokyo and then took a bus to Yokosuka to visit their husbands during the 11 days the ship was in port.

Of the 3,000 crewmen who put *Connie* into commission seven years ago, only seven are still aboard. Those seven were the guests of honor at a traditional birthday party on the ship's hangar deck as she steamed toward Okinawa after leaving Yokosuka. The seven are BTC Florian Morin, FTC James Ryan, AB1's David Corbin and Travis Bishop, RD2 Harry Sarver, TN3 Alejandro Alcayde and AA Bailey Gardner.

Coral Sea (CVA-43)

On November 1, two F-4B *Phantoms* of VF-151 made *Coral Sea's* last air strikes against communist Vietnam. Commander Bobbie D. Williard, squadron skipper, and his RIO, Lt. Richard C. Stearns, led the strike. CVW-15 and VF-151 also made *Coral Sea's* first strikes against North Vietnam.

WHEN SEVEN *Wave nurses came aboard Tripoli from the hospital ship Sanctuary, Commander W. Z. McLean, OinC of Surgical and Evacuation Team Bravo, had the pleasant task of showing (left to right) Sue Hudec, Glenda Jordan and Mary Overstreet the flag bridge.*

Enterprise (CVAN-65)

Lt. Mike Mason took extreme action to get his girl friend aboard *Enterprise* for a cruise at sea. He was married to Miss Karen Barnum in the ship's chapel as the nuclear carrier returned to NAS Alameda from a repair period at the Puget Sound Naval Shipyard, Bremerton, Wash.

Was it difficult getting permission to marry aboard a U.S. Navy ship underway? "You bet it was," said Mason. "And when I applied for a marriage license at the Kitsap County, Wash., courthouse for a wedding at sea, the officials were confused." Then the treadmill started. A license bureau employee referred him to the county prosecutor who obtained an opinion from the attorney general's office. The decision was that it would be legal as long as the ceremony was performed inside the three-mile territorial waters.

The lieutenant then had to convince Captain Kent L. Lee, *Enterprise* C.O., and Commander Jack V. Crawford, ship's chaplain, that the wedding would be according to Navy regulations. The manual said the captain could not perform the ceremony (contrary to popular belief) but that they could be married aboard ship. It said nothing about a ceremony at sea.

Finally, Miss Barnum needed special permission to sail because she was not officially a dependent. In fact, she was the only one of the 700 family members aboard issued two ID tags, one to Karen Barnum and the other to Karen Mason.

Hornet (CVS-12)

Hornet joined other U.S. and Canadian naval units recently for an ASW exercise in Hawaiian waters. The joint

D. A. Jeannette

BARBARA FELDON *(Agent 99) was treated like a queen by LISN Nick Giammona (L), AA Mike May (C) and SN George Williams. Barbara came aboard Yorktown with Don Adams as "Max Smart," and Ed Platt as "the Chief" (seated) to film an episode in "Get Smart."*

Jack Reeves

effort, under the command of Rear Admiral Eugene G. Fairfax, Commander Antisubmarine Warfare Group Five, was part of an operational readiness evaluation for the U.S. ships prior to a WestPac deployment.

Intrepid (CVS-11)

When Lt. Anthony J. Nargi, VF-111, Det. 11, took his *Crusader* off the deck of CVS-11 on his 111th mission, he shot down his and his squadron's #1 MiG. *One* seems to be the basic, magic number.

Lt. Nargi and his wingman, Ltjg. A. C. Rucker, were on an intercept mission when they spotted the MiG-21.

"I think the pilot saw me about the same time," Lt. Nargi reported to *Intrepid* C.O., Captain Vincent F. Kelley. "My *Sidewinder* tracked perfectly. It flew right up the tailpipe of the MiG and blew the tail off, creating a large red fireball. I saw the pilot eject and his orange and white chute open."

Kearsarge (CVS-33)

Kearsarge, fresh from a six-month overhaul period in the Long Beach Naval Shipyard, is back in fighting trim after a refresher training program. Rear Admiral J. H. King, Jr., Commander Antisubmarine Warfare Group One, came aboard in December. CVS-33 will serve as RAdm. King's flagship during her next deployment.

WORKING *on the Chain Gang" could well be the title of this photo of a crewman with his load of tie-down chains for the aircraft on the flight deck of Constellation.*

Yorktown (CVS-10)

After a two-month in-port period at the Long Beach Naval Shipyard, *Yorktown* conducted refresher training off the coast of California. During the second week of that training, LCdr. George Ormond, Jr., logged the ship's 126,000th fixed-wing landing.

But before she left Long Beach, her flight deck and hangar bays became television studios as a segment of the "Get Smart" show was filmed aboard. Spotlights beamed and cameras dollied back and forth as Jimmy Komack, director, shouted, "Cut it! Print it!"

The cast on board for the "shooting" included Don Adams as Maxwell Smart, Barbara Feldon as Agent 99 and Ed Platt as the Chief. Between scenes the cast posed for pictures, gave autographs and answered questions.

CVS-10 is scheduled to move to Norfolk early this year.

Princeton (LPH-5)

Princeton was one of several operating units visited by Secretary of the Navy Paul R. Ignatius on a recent WestPac tour. He was accompanied by Vice Admiral William F. Bringle, Commander Seventh Fleet, and Lieutenant General R. C. Cushman, Commanding General, Third Marine Amphibious Force.

SecNav toured the ship and observed a simulated medical evacuation recovery. Before leaving, he taped a TV interview in which he noted the importance of the amphibious forces and his desire to see their operations himself. This was the first time the Secretary had been aboard an amphibious force ship. LPH-5, commanded by Captain Carl M. Cruse, operates as flagship of Seventh Fleet Amphibious Ready Group Alfa.

Sweet Pea logged helo landing number 75,000 when two Marines, 1st Lt.

T. W. Brown

CARRIER AIR WING SIX AIRCRAFT FROM AMERICA FLY OVER THE TONKIN GULF

Robert N. Gillespie and his copilot, Capt. Thomas B. Hill, HMM-363, brought their CH-34 aboard.

A few landings later, LPH-5 recorded another milestone as Marine Captains James B. Citrano and Thompson B. Dickson chalked up the 65,000th helo landing since *Princeton* became an LPH.

Oriskany (CVA-34)

While *Oriskany* was completing the final phase of an overhaul at the Hunter's Point Naval Shipyard after her third combat tour in Vietnam, she was officially adopted by Oakland, Calif. In a ceremony in the city's council chambers, Oakland Mayor John H. Reading presented a sterling silver service to Captain Jack S. Kenyon, commanding officer of *Oriskany*. In turn, Captain Kenyon presented an American flag and a ship's plaque to the city.

Ranger (CVA-61)

While *Ranger* was conducting carrier qualification and flight operations in preparation for her current S.E. Asia cruise, Lt. Henry K. Wong and his B/N, Ltjg. George W. Brown, landed their A-6A for the carrier's 110,000th arrested landing.

With qualifications over, *Ranger* headed for Hawaii and an ORI, then steamed to the Philippines and Japan. On this cruise, two famous names in American naval history were again joined – *John Paul Jones* (DDG-32) and *Ranger*. The guided missile destroyer is named for the captain of the first *Ranger*, John Paul Jones, whose famous cry of "I have not yet begun to fight!" became a slogan of the war at sea in the American Revolution.

Valley Forge (LPH-8)

Valley Forge, after a nine-month tour of duty in S.E. Asia, was docked at Long Beach for upkeep and repair.

While she was tied up, 45 Navy League cadets from the Naval Reserve Training Center, Los Alamitos, were her guests for a weekend of training. The 12- and 13-year olds were given lectures and demonstrations by the various departments. They stood their share of watches, with the help of the regular watchstanders, and wielded brooms and swabs while learning some of the details involved in operating a carrier.

ABOARD *CVA-59, Vice Admiral Booth presents Mad Bomber Award to Lt. Atkinson.*

And a short time later, LPH-8's flight deck was the scene of a graduation ceremony for more than 70 seventh and eighth grade students participating in the "Science of Flight" program. The ceremony, held aboard a Navy carrier for the fourth year in a row, is part of an effort to stimulate interest in Naval Aviation.

The Science of Flight program was originated in 1959 by Gust Siamis, a Westchester, Calif., educator, as an academic summer science course to interest young people in the fields of flight, space and astronautics.

Ticonderoga (CVA-14)

And another bit of America's past is now aboard *Tico* – a segment of hull planking from the original *Ticonderoga*, a 120-foot, 17-gun schooner which fought in the last battle of the War of 1812. The 154-year-old relic was presented to Captain Norman K. McInnis, C.O., by Mr. George Greene of Long Beach, Calif.

Mr. Greene acquired the 10-inch oak plank when the original *Ticonderoga* was reconstructed in 1959 at Whitehall, N.Y. He decided to pass it on to the modern ship when he was assigned to work on her while she was in drydock at the Long Beach Naval Shipyard.

ATLANTIC FLEET

Forrestal (CVA-59)

Forrestal recently took part in a bilateral exercise with the Italian Navy in the Med. During *Quick Draw*, planes from CVA-59, along with a division of U.S. destroyers, simulated an attack against Italian destroyers and PT boats. Later, the carrier's planes

teamed up with the Italian naval contingent to simulate an attack on the U.S. destroyers.

Vice Admiral Charles T. Booth II, Commander, Naval Air Forces Atlantic, visited the carrier for a firsthand look at operations. He also met the Mayor of Berlin, Mr. Laus Schuetz, who happaned to be visiting the carrier at the same time.

While he was aboard, VAdm. Booth presented the Mad Bomber Award to Lt. Sid E. Atkinson, VA-15. Lt. Atkinson won the award for his pinpoint bombing accuracy during a recent CVW-17 weapons deployment to Fallon, Nev. On one flight he scored a perfect six straight bull's-eyes using combat delivery angles and release attitudes. Just to prove it wasn't all luck, on his next flight he put his first two bombs into the bull's-eye.

Independence (CVA-62)

Vice Admiral David C. Richardson, Commander Sixth Fleet, opened the Annual Sixth Fleet Commander's Conference aboard *Independence* as the carrier lay at anchor in Argostoli Bay, Greece. Three hundred representatives, guests of C.O., Captain H. S. Matthews, Jr., attended 29 individual meetings that called for an exchange of ideas on common problems and goals. Fifteen Sixth Fleet ships anchored in the bay for the conference.

CVA-62 logged her 108,000th arrested landing when Ltjg. William R. Black, VA-76, touched down in his A-4C *Skyhawk*.

REAR *Admiral Vincent P. Healey, ComCruDesFlot Six, and West Berlin Mayor Laus Schuetz come aboard Forrestal (CVA-59) after highlining from Tattnall (DDG-19).*

WHAT APPEARS *to be a reflection is really SA Michael Doyle's twin brother, SA Gerald Doyle. The two young men enlisted in the Navy on the same day, went to boot camp the same day and advanced to seaman apprentice on the same day. Any doubts they had about remaining together were dispelled when they were assigned to USS Essex (CVS-9).*

John F. Kennedy (CVA-67)

The Navy's newest attack carrier, operating off the Virginia coast, recorded her first arrested landing, cat launch, deck launch, helo takeoff and landing. She also accounted for all-Navy firsts with automatic carrier landings of *Phantoms* and *Corsairs*.

Guadalcanal (LPH-7)

LPH-7 recently returned to Norfolk from a five-month deployment as flagship for the Caribbean Amphibious Ready Group. While deployed, *Guadalcanal*, commanded by Captain Roy M. Sudduth, took part in several exercises including *Doria Salute* which was held off St. Eustatius, Netherlands Antilles, with the Royal Netherlands' Marines and Navy.

Roosevelt (CVA-42)

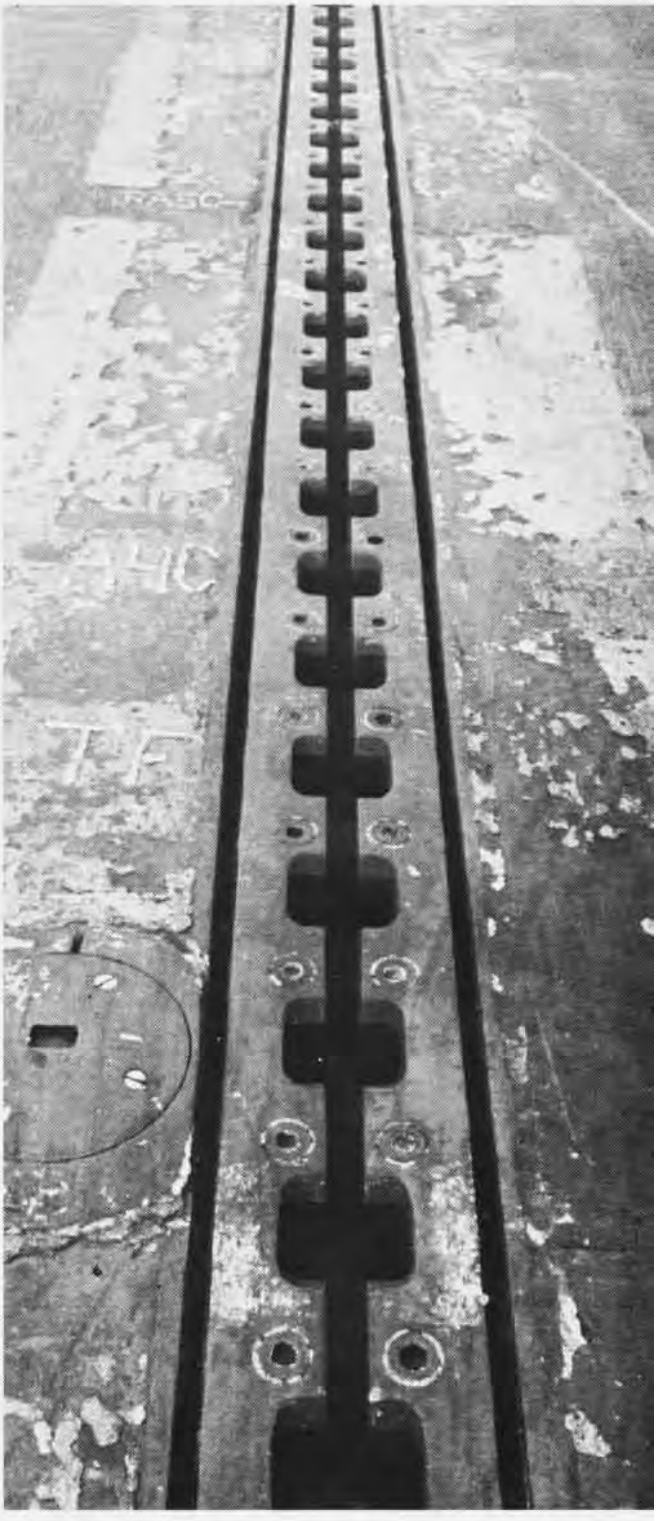
In the Norfolk Navy Shipyard, Portsmouth, Va., for a year of overhaul, *Roosevelt's* modernization was ahead of schedule. Commanded by Captain J. O. Mayo, the carrier is scheduled to return to the Fleet in July.

Wasp (CVS-18)

When *Wasp* returned to Quonset Point, she had a new commanding officer, Captain Samuel M. Cooley, Jr., who had assumed command during the carrier's four-month European deployment. While deployed, *Wasp* joined forces with other U.S. units and eight NATO nations in Operation *Silvertower*, a mammoth exercise stretching the width of the Atlantic.

Having visited such ports as Portsmouth, England; Greenock, Scotland; Hamburg, Germany; Lisbon, Portugal; and Naples, Italy, *Wasp* is scheduled for a yard period at Boston.

A FLIGHT DECK *crewman aboard USS Constellation surveys the action while he takes a quick breather from his contribution to the air war. He has few moments like this, so they are a pleasure. Below, the narrow strip of catapult track, which looks like a mod pattern, is in reality the starting point for all the air strikes flown by the men and aircraft from CVA-64.*



Constellation on the Mark

By J03 Jack Reeves

The Navy's part in the air war over Vietnam is not a new one. It is a daily drama that continually reveals itself in new ways. On *Constellation* it appears in the grim determination of the faces of the men who have never seen the enemy. It is portrayed in the incessant interplay of men and massive air power. It is captured in the quiet and chiselled strength of a tie-down chain or a strip of catapult track. It is found in the ominous shadows of bombs awaiting delivery. Though these dramatic scenes occur again and again, they are never dull.

AN AVIATION *ordnanceman pushes a cart loaded with two 500-pound bombs to a plane waiting on the flight deck. At right, an F-4B Phantom pilot of Fighter Squadron 143 confers with his maintenance chief. He has just returned from a strike mission. Work of the flight deck crew completed, a Grumman A-6A Intruder of VA-196 roars down the deck in a trail of steam (below).*

South Pole Station is Now Open

Twenty-one on Hand to Greet Arrivals

South Pole Station, Antarctica, opened November 1 when a ski-equipped *Hercules* aircraft of Operation *Deep Freeze* arrived. The flight landed at the Pole with a group of men who replaced the 21 U.S. Navy and scientific personnel who wintered over at "the bottom of the world."

Commander E. W. Van Reeth, C.O. of VX-6, was at the controls of the aircraft, thereby marking the third consecutive year he has piloted the first Pole flight.

Most of the wintering-over personnel, who have not had personal contact with the outside world for the last eight months, were outside in temperatures of -39° F. to greet the arrivals.

The flight left McMurdo Station at 0930 and arrived at the Pole three hours and 15 minutes later. Rear Admiral J. Lloyd Abbott, Commander U.S. Naval Support Force, Antarctica, piloted the plane during the landing at McMurdo on the return trip.

South Pole is the fifth station to be opened this year. The two remaining U.S. stations, Plateau and Palmer opened a few weeks later.

Plateau, where eight men have been isolated since February, is scheduled to be phased out. Palmer, located on the Antarctic Peninsula, will be opened by U.S. ships.

Instructor Builds a Training Aid

Helps Students in Study of 'Escapac'

Instructors at the Aviation Structural Mechanic Class A School, Memphis, Tenn., won't have to juggle parts of the personnel ejection seat system, the *Escapac I*, any longer.

AME1 David Dever, an instructor, designed a training display board of the equipment used during the second phase of the eight-week course.

Dever built the training aid on his own time. The board was completed in about a month, taking 30 hours of work.

"The ejection seat, used in the Navy's A-4 *Skyhawk*, is so compact that students can't see all the components at once," Dever said. Before the display board was constructed, instructors explained each part individually.

"It was hard for students to understand the relationship of each part to the system," explained another instructor. There was also the problem of hunting up all the parts for the classroom presentation.

The training board allows the students to see all the parts at once.

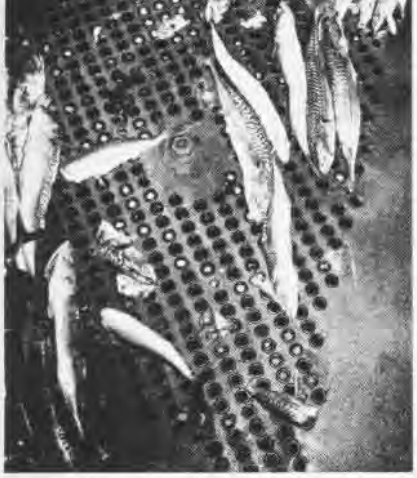
Hangar Becomes Historical Site

Former Home of Navy's Dirigibles

NAS Lakehurst's Hangar No. 1 was recently dedicated as a Registered National Historic Landmark by the National Park Service.

The building, at one time the largest single-arch building in the world, was completed in 1921. Over the years, it was home to the *Shenandoah*, *Macon*, *Los Angeles* and *Akron*.

Dr. Murray Nelligan of the Park Service presided at the dedication. Vice Admiral Charles E. Rosendahl, USN(Ret.), former Lakehurst C.O. and airship commander, was guest speaker.



ANIMAL CORNER fans will be pleased to note recent additions to our menagerie. After the polar bear report in December, we figured the series was complete. But now our friends on the USS *Essex* are writing about their fishy firerooms.

When two condensers suddenly stopped functioning one morning, *Essex'* chief engineer, Commander F. W. Gerow, became more than a little concerned as two engines lost vacuum. He had a hunch something was fishy.

And he was right. Investigation revealed that an abundance of mackerel had been sucked into the condensers, causing the trouble. Firemen netted 16 G.I. cans of fish from one condenser and six cans from another. More fish were found in yet a third condenser.

Order was soon restored with everything functioning normally, but *Essex* firerooms were left smelling somewhat "saltier."

A CRANE, *who landed aboard the Coral Sea and found the atmosphere, cuisine and attention favorable, finds a perch on the sleeping head of Airman Richard D. Kay irresistible. The bird is known as "B-A Crane" because he touched down first near the ship's boatswain aircraft crane.*

PERSONAL GLIMPSES

Editor's Corner

Snakes on Wake. It's one darn thing after another on the tiny mid-Pacific atoll, Wake Island. A year ago, Typhoon Sarah caused the evacuation of hundreds of residents. Later, a large part of the island was placed off limits because of chloropicrin gas leaking from canisters jettisoned on the reef during World War II. Then came the boa constrictors.

During a stop-over by a military transport, two of the big reptiles, souvenirs of Southeast Asia, escaped from the luggage of servicemen aboard the plane. After several hours of frantic searching by a posse armed with baseball bats and machetes, the snakes were located on the edge of a thicket not far from the airport.

We have a report from the Wake Island Epicurean Society to the effect that snake steak is not bad "atoll." And there are a lot of new belts on the island as well.

ALAS, POOR HENRY. Alas and alack, poor Captain Henry Barber is about to slip into oblivion. And all over a little apostrophe.

Anyone who has taken even a short course in English knows that an apostrophe between a name and the letter "s" means the name is possessive. Like Bryan's cap or Shirley's teeth or . . . well, you get the idea. So Barber's Point signified the place where wayward British Navy Captain Henry Barber ran his ship aground many years ago. Ergo — Barber's Point, not Barbers Point.

But, it seems, modern technology or something equally inexplicable has done in poor Henry. The map makers have decided that by leaving the ' in the name, it might confuse folks into believing there is a town or something on (or just off) the coast of Oahu near the Navy's air station there. So they left it out.

And people have begun picking it up (or putting it down), so that the ' like the five-cent cup of coffee (except at the geedunk) is now a thing of the past.

Barber's Point, farewell.

Barbers Point, welcome! (We guess.)

Revenge. A while ago we heard how the men of VX-6 detachment in Antarctica observed the Fourth of July.

Braving a blizzard, 55-knot winds and -17° temperature, they set off flares to celebrate the cherished American holiday. Later, while they were enjoying a mystery film, the theater was raided by a group of New Zealanders from nearby Scott Base.

The Navymen were forced to drink hot tea — retribution for the rebellious actions of their forefathers at the Boston Tea Party.

Roy McAlister

HAPPY FOURTH OF JULY!

ICEBOX FOOTBALL. They keep busy down there. One day, when the sun was shining brightly on Plateau Station, two four-man football teams took to the gridiron.

The Antarctic playing field was in the smoothest condition of the year, a near-perfect day with a temperature of 59 degrees below zero.

It was a slippery contest at the outset with both teams attempting to put the game "on ice" early. Both quarterbacks kept cool heads as did the centers, guards, tackles and any other living creature that happened to be in the area.

When all participants had turned to a predetermined tint of chilly blue, the game was considered official and came to an end.

Making seating arrangements for a large turnout at the game was not a problem. As expected, there was not one fan to be seen anywhere. The four players on each team comprise the total wintering-over population of the station.

LETTERS

More Kudos

I very much appreciate your fine publication. All of you on the staff outdid yourselves on the October issue. It is one of your best to date. Keep it up.

J. B. McDaniel, Commander
Former Editor, *Approach* Magazine

I have just received the 50th Anniversary Year issue. Outstanding!

For your information, I have been using your channel of information for over two years in my work with the Thai National Police Aviation Division. My November selection is taken from Grampaw Pettibone.

Keep all your joy of journalism and the messages of importance will be joyous.

Art Elder
Air Operations Advisor
Bangkok, Thailand

The Naval Aviation News, October 1968, looks great! I note with interest the full-color cover, typography and general layout.

Armand Troncone
Columbia University Publications

The excellence of your magazine has reached a new high in the October issue of Naval Aviation News.

The format tends to emphasize further the interesting and comprehensive content of your magazine. The full color covers are a striking addition and are fitting accoutrements.

To you and the staff, an emphatic Well Done. Your efforts are appreciated. Keep up the good work.

Captain D. D. Engen and Staff
Op-508, Aviation Plans Branch, CNO

Amendment Needed

An article concerning the Navy Unit Commendation received by VP-11 in the November issue of *Naval Aviation News* contained the following statement: "This is believed to be the first time the NUC has been awarded a patrol squadron not in a combat zone."

As a member of VP-6 from October 1965 to July 1968, I know this is not true. There are a number of Pacific Fleet VP squadrons that received the NUC during 1967 for operations not in a combat zone; in fact, the majority of the squadrons were not even deployed. The squadrons are VP-6, VP-9, VP-19, VP-22, VP-28, and VP-47.

George E. Leonard, Jr., Lt.
ROTC, Penn State

¶ You are correct. *Naval Aviation News* has confirmation that all the patrol squadrons listed in your letter received the NUC for non-combat operations:

VP-11: Oct. 12, 1967-Feb. 15, 1968 – ASW in North Atlantic.

VP-22: Jan. 22, 1967-Mar. 22, 1967 – ASW in North Pacific.

VP's 9, 19 and 47 (all in the same citation): Mar. 19, 1967-Apr. 1, 1967 – ASW in the Pacific.

VP's 6 and 28, and Detachments of VP's 9 and 47 (as units of TG 32.1): Jan. 31, 1967-Mar. 8, 1967 – ASW in the Pacific.

LTV's 'Four C' Society

Plans are underway for formation of an exclusive "Four C" Society limited to pilots who have flown all of four "C" aircraft – the piston-engine F4U *Corsair* and the jet-engine F7U *Cutlass*, F-8 *Crusader* and A-7 *Corsair II*.

Compilation of a charter honor roll is the necessary starting point in preparation for suitable recognition of individual accomplishment and distinction. Officers whose logbooks qualify them for inclusion on the select membership roster are requested to forward their names and mailing addresses.

L. B. Richardson, Jr.
Vice President
Vought Aeronautics Division
Dallas, Texas 75222

Challenge and Response

The *NANews* article entitled "Aircraft Maintenance Up North" (August 1968, p. 29), appears to be in error.

The article states, "Every 28 days, each *Orion* undergoes an extensive 'physical' or major check."

P-3 aircraft undergo major or calendar inspection every 16 weeks instead of every 28 days. This check cycle is outlined in NavAirSysCom message 170002Z Feb. '68, and the P-3A/B Periodic Maintenance Requirements Manual, NavAir 01-75PAA-6.

This correction is not to slander the strenuous maintenance requirements of the North Atlantic patrols but rather to clarify the check cycle for P-3 aircraft. As the article is written, one would tend to believe that all of VP-24's aircraft undergo a major inspection every 28 days. This is highly improbable and unlikely.

AEC C. E. Maher
ADJ-1 R. M. Devine
VP-45 Quality Assurance

We regret indeed that our maintenance story appearing in the *White Falcon* and the August 1968 issue of *Naval Aviation News* has engendered some confusion among the P-3B *Orion* maintenance community. Be assured that VP-24 faithfully conforms to the prescribed aircraft inspection schedule set down by NavAir 4700.2, NavAirSysCom message 170002Z Feb. '68, and NavAir 01-75PAA-6.

The article was written with the intention of spotlighting the entire maintenance department, not merely the 28-day or 16-week check cycles. However, the photos appearing in the magazine did indeed illustrate an aircraft undergoing the 16-week inspection vice the 28-day check mentioned in the text of the article. These photos were chosen because of their reader interest with no intention of linking them to the 28-day check cycle. The words "major," "extensive," and "stem to boom" are over-descriptions of the 28-day inspection and should have been deleted. These adjectives would apply to the 16-week calendar inspection which takes five working days and involves the efforts of approximately 30 technicians.

K. L. Geitz, Commander
Commanding Officer, VP-24

Undersea Mountain Named 'Kiwi'

VX-8 Makes its Find off New England

A sea mountain was recently named "Kiwi" in honor of the first aircraft ever to discover an undersea mountain.

In 1957, the *Kiwi Special*, a C-54 assigned to VX-8, was recording data for *Project Magnet* over the New England seamount chain when her instruments detected the uncharted mountain. A subsequent study by an Oceanographic ship revealed a mountain rising 3,000 feet above the ocean floor approximately five miles southeast of Cape Cod.

Crusader's New Wing-Fold Hinges

Being Made of Beta-forged Titanium

Beta-forged titanium wing-fold hinges are being installed on F-8 *Crusaders* being remanufactured by LTV Aerospace Corporation. This means a savings in both cost and weight.

According to J. R. Clark, vice president-general manager of the Vought Aeronautics Division, the F-8H *Crusader*, now delivered to the Navy, was the first known fixed-wind aircraft to incorporate critical structural components machined from this material.

The primary advantage offered by the beta-forged titanium, according to LTV, is the drastic reduction in the amount of material that must be purchased and the machining operations required as compared to conventional alpha-beta titanium forgings. Secondly, impact and toughness properties are improved significantly.

SQUADRON INSIGNIA

F6F-5P's (above left) and F4U's (above) were also used for photo reconnaissance.

On January 29, 1949, what is now VFP-63 was commissioned as VC-61 at Nas Miramar. In the 20 years since then, the home port has remained the same while the squadron transitioned from F6F-5P's to F2H-2P's, F8U-1P's, A3D-2P's and today's RF-8G's. During the same period, VC-61 became VFP-61, VCP-63 and VFP-63, in that very order. The 'Eyes of the Fleet,' led by Commander James L. Ellis, provide aerial photographic reconnaissance for our forces in the Pacific. To accomplish this the squadron deploys a detachment of four pilots, two photo intelligence officers, 40 enlisted men and four aircraft on most attack carriers now operating in the Pacific Fleet.

NAVAL AVIATION

NEWS

GET UP AND GO . . . .

Don't just sleep there. For the young man who wants a future, it needs to be seized. Be sure to get your copy of Naval Aviation News regularly. A coming issue describes in words and pictures the progress of the aviation training program which takes the know-how Navy man from airman recruit through to the upper echelons of the enlisted ranks.