

NAVAL AVIATION

NEWS



SPECIAL REPORT:
Naval Enlisted Aviation Training

MARCH 1969

NavAir No. 00-75R-3





ON THE MOVE

Dawn comes to the South China Sea. A call for fire support from Marines in South Vietnam puts the Navy team in motion. In Vietnam, the Mediterranean, the Western Pacific, around the world, the U.S. Navy is ready to move. Among its operating forces are the professionals of Naval Aviation. Only the very best is good enough to serve on this fast-moving team.

NAVAL AVIATION NEWS

About this Issue

The October 1968 issue of *Naval Aviation News*, which dealt with aviation officer training in the Navy, met with an enthusiastic response. A second reprint for the Recruiting Service brings the total overrun to 40,000 copies.

As a logical sequel, this month's edition of the *News* contains a special treatment of enlisted aviation training. JOC James Johnston, associate editor, has produced the complex feature and appropriately capped it with one of his fine photographs on the back cover.

Once again, we depended on contributions from our friends in the field. A partial list includes: Ltjg. Joseph W. Burgess, ComFAir Whidbey; JOC R. D. Witham, Joint PAO, Memphis, who helped with research on enlisted training; the Naval Air Facility and NARTU Washington, D.C., where the lead story and Reserve section were done; PHC B. M. Andersen, who provided the Fleet training story; the exceptional efforts of JO1 Bob Wood, NAS Olathe, Kansas; the Combat Camera Groups of both the Atlantic and Pacific Fleets; the Public Affairs Office, Patuxent River; and the ComFAir Brunswick PAO.

Special thanks go to Robert Ferguson and the Lockheed-California Company for their cooperation with VP-31 in providing an effective cover on short notice. Bob forwarded so many good shots that again a choice was difficult. Below is another sample of his work.



Vice Admiral Thomas F. Connolly
Deputy Chief of Naval Operations (Air)

Rear Admiral Frederick H. Michaelis
Assistant Deputy Chief of Naval Operations (Air)

Captain Paul Jayson
Head, Aviation Periodicals and History Office

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A comprehensive overview of the training received by the enlisted men in Naval Aviation begins on page 6 with one man's story of a dream fulfilled, followed by the creation of Group IX rates (page 10), recruit training (page 12), schools available in aviation (page 14), squadron and Fleet training (pages 16-21), Reserve opportunities (page 22), and a look to the future and the P-3C Orion (page 24).

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Naval Aviation News announces its second annual photographic award and a special award, explaining the criteria used to determine the winners.

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A specialist in the weapons test division at NATC Patuxent River, Md., describes the Corsair II's integrated system which gives pilots greater control and accuracy in attack.

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NAVAL AVIATION NEWS

Kitty Hawk and CVW-11 Honored Receive Presidential Unit Citation

On January 9 in a shipboard ceremony at Pearl Harbor, Admiral John J. Hyland, Commander in Chief, Pacific Fleet, presented the Presidential Unit Citation to the USS *Kitty Hawk* (CVA-63) and Carrier Air Wing 11. *Kitty Hawk* is the first Navy ship to receive the citation for duty in Vietnam.

The award, highest any armed forces combat unit may receive, praised the ship's 4,800-man crew and her embarked CVW-11 for exceptional performance in staging air raids on North Vietnamese railheads, power plants and industrial centers between December 23, 1967, and June 1, 1968. At one time during the 221-day deployment, CVA-63 remained on the line for 61 consecutive days when her relief ship was diverted to North Korea during the *Pueblo* crisis. Normal time on the line is 20 to 30 days.

Air Wing 11 launched 185 major strikes — 150 against the northern section of North Vietnam — and hit targets near Hanoi and Haiphong 65 times. During the Khe Sanh siege, early in 1968, 1,200 sorties were made against Communist forces at that base.

When Admiral Hyland made the presentation to Captain John F. Davis, *Kitty Hawk's* present C.O., and Captain Donald C. Davis, skipper during the period cited, he said, "The ship is recognized in professional circles as having been on Yankee Station during the toughest part of the war and against the most heavily defended area in the world.

"Adverse weather and heavy enemy

defenses forced *Kitty Hawk* to operate under the most difficult conditions ever faced in Naval Aviation history."

A Self-inflating Surface Target Point Mugu Engineer Develops Device

Future missile and gunnery marksmanship of Fleet aircraft and ships may be sharpened through the use of a novel surface target invented at Point Mugu by a Pacific Missile Range engineer.

The self-inflating surface target, developed by Raymond S. Daughenbaugh for testing air-to-surface missiles, can be deployed from aircraft or ships. Its versatility and low cost make it attractive for gunnery practice at sea, too.

Made of plastic polyester film (Mylar) with an interior radar reflective coating and a bright orange exterior, the target has a pyramidal shape with edges 20 feet long. A long flexible plastic filling tube extends from the center of the base, and the end of the

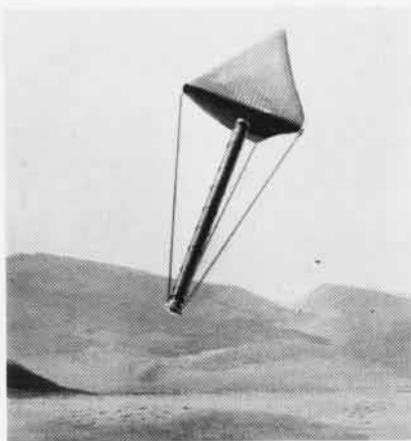
filling tube is attached to a weighted airscoop.

The target is packed accordion-fashion like a parachute in a canister. For deployment of the target from a fixed-wing aircraft or a helicopter, the canister is secured to a pylon or boom. When the release pin is pulled, the weighted airscoop drops and pulls the target out of the canister.

Air passes through the airscoop during the descent and fills the target. As the airscoop and filling tube enter the water, the air is trapped and compressed by the water rising in the filling tube. This completely inflates the target.

Aboard a ship, the target is inflated by directing the airscoop into the wind. A ten-knot airspeed is required. After the target is inflated, the airscoop is dropped into the water and the target is ready.

The estimated production cost is under \$300 per target, including packaging, compared to approximately \$8,000 for the foam-filled, steel sectional barges now being used.



TARGET BEING DROPPED FROM HELO

Navy TH-57A Named SeaRanger Helos Now Being Used in CNABaTra

The TH-57A, Navy's version of Bell Helicopter's 206A *JetRanger*, has been officially named the *SeaRanger*.

Forty of the new five-place, light turbine helicopters were recently delivered to the Naval Air Basic Training Command at Pensacola.

The training helos, which replace the TH-13M's, have dual controls and are powered by 317-horsepower Allison 250-C18 engines.

NFO Honored at NAS Pensacola New Building Named Griffith Hall

LCdr. John G. Griffith, a highly decorated Naval Flight Officer, was honored posthumously at NAS Pensacola when a new academic building was named in his memory.

At the dedication of Griffith Hall on January 17, Captain Silas R. Johnson, station C.O., said, "It is highly appropriate that the new academic training building for Training Squadron Ten bear the name of this distinguished naval flight officer. He was the type of naval officer future flight officers should strive to emulate in the performance of their duties in the naval establishment and as American citizens."

LCdr. Griffith was awarded the Navy Cross posthumously for extraordinary heroism as leading bombardier-navigator in a night strike in February 1968 against a heavily defended port facility in the heart of North Vietnam (*NANews*, August 1968, p. 9).

The new building houses a radar and a navigational trainer and two digital computer demonstrators. Other facilities include instructor and administrative offices, an auditorium, a student lounge and personnel work areas.

VX-8 is Redesignated VXN-8 Will Retain its Oceanographic Mission

On January 1, VX-8, NAS Patuxent River, became VXN-8. As Oceanographic Development Squadron Eight, it is the first Naval Aviation unit specifically organized to conduct oceanographic and magnetic research survey flights which provide a uniform method of coordinating the collection of scientific data vital to operational forces throughout the world.

In addition to its oceanographic duties, VXN-8 provides airborne radio and television to the Republic of Vietnam and is responsible for student training in the C-121.

A few days later, Dr. Jacques Piccard, world-famous underwater pioneer, joined a crew of the squadron on the NC-121K, *El Coyote*, on a routine Gulf Stream tracking mission.



THE CONTRACT for the Navy's new supersonic carrier-based fighter (mock-up above) has been awarded to Grumman Aircraft Engineering Corporation. The F-14A, a two-place aircraft with tandem seating, will be powered by a Pratt & Whitney TF-30-P-401 afterburner turbofan engine. The new fighter is designed with an optimized combination of speed, acceleration, maneuverability and radius of action which includes a fire-control system with multiple weapon options. Plans call for the first flight in 1971 and delivery to the Fleet in 1973.

Dr. Piccard was aboard to observe the currents. He and five other men were preparing to drift submerged in the Gulf Stream for six weeks in his PX-15, the *Ben Franklin*, a cylindrical vessel, 50 feet long and 10 feet in diameter, with 29 portholes and 70 searchlights for undersea observations.

CVA-14 in Exercise 'Bell Curve' First Fleet Practices Naval Warfare

USS *Ticonderoga* and 25 other ships plus 23 air squadrons participated for eight days in January in the First Fleet's Exercise *Bell Curve*.

Bell Curve was designed to train Navy ships and men in all areas of naval warfare with special emphasis on tactics useful in S.E. Asian waters.

Air strikes were made from the *Ticonderoga* against targets in the Chocolate Mountain impact range and at Twentynine Palms, Calif.

The ASW carrier USS *Kearsarge* (CVS-33) and other exercise ships operated against two submarines, USS *Bashaw* (AGSS-241) and USS *Snook* (SSN-592).

Terrier, *Talos* and *Tartar* missiles were fired from guided missile ships against drone targets simulating enemy aircraft.

Antiair warfare operations against

"enemy" flights were detected by Fleet units, and *Ticonderoga* launched her planes to intercept the incoming aircraft. The exercise provided ample practice for Navy radarmen.

Communications, underway replenishment, mine warfare, aerial reconnaissance and a wide variety of Fleet and shipboard training evolutions were included in the eight-day schedule.

The over-all commander of *Bell Curve* was Vice Admiral Bernard F. Roeder, Commander First Fleet, embarked in his flagship, the USS *St. Paul*.

MCCRTG-10 is Commissioned Will be Operational by June

On January 3, the newest Marine Corps unit, Marine Combat Crew Readiness Training Group Ten (MCCRTG-10) was commissioned at MCAS Yuma.

Second of its type, the new group is composed of H&MS-10, Fighter-Attack Training Squadron 101 (VMFAT-101), Attack Training Squadron 102 (VMAT-102) and VMT-103.

MCAS Yuma is the permanent station for all of the squadrons except VMFAT-101, which was commissioned the same day at MCAS E1 Toro where it will remain for two years.

The new group is expected to be operational by June 1.



GRAMPAW PETTIBONE

Eye of the Needle

A Ltjg. Fleet replacement pilot (FRP) was under instruction in the A-4 attack aircraft in the replacement training squadron at one of the Navy's master jet air stations. The flight schedule called for a 2130 launch on a one-hour night practice carrier-controlled approach (CCA) and mirror landing practice (MLP) hop at home field. The weather was clear; however, the visibility was reported at three miles in haze.

The assigned leader, also an FRP, briefed the flight of five in accordance with NATOPS and the syllabus guide. The Ltjg. taxied out as #4. Each A-4C took off individually, then climbed toward the marshal point.

Approach control assigned each plane a separate distance fix and altitude on the inbound *Tacan* radial to the field and upon arrival at the fix gave each an approach time.

The *Skyhawk* left 20,000 feet and departed the approach fix 15 seconds late on CCA, but the pilot advised approach control of the fact and continued the approach to the nine-mile gate. At nine miles, he called approach control and asked for a landing gear

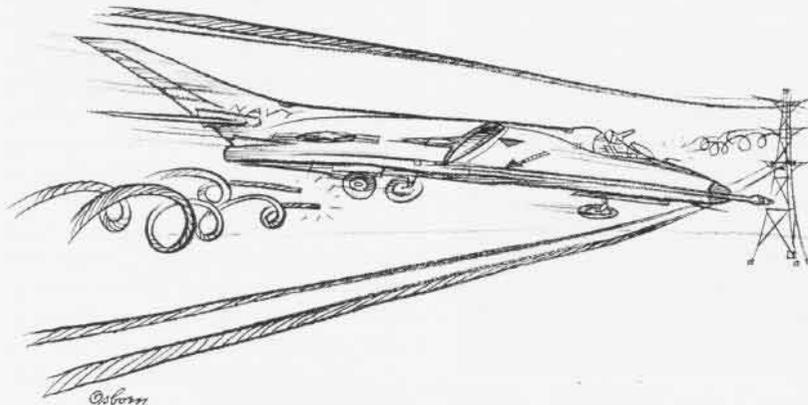
check and commenced a normal rate of descent. His gear and flaps were down at that time, and the aircraft was trimmed for "donut" airspeed. Receiving no answer, he called again at eight miles, noting by his altimeter that he was passing 700 feet.

Forty-three seconds later, he glanced at the radar altimeter. It read less than 150 feet. As the FRP instinctively added throttle, the aircraft hit some-

thing. Adding 100% power, the alarmed pilot climbed to 1,500 feet and checked all his cockpit instruments. Finding everything in order, he made one pass by the landing signal officer for a visual check of the landing gear. It looked all right, and an uneventful landing followed.

Upon examining the plane on the ground, investigators found cable marks on the main landing gear tires and on the nose gear fork. Parts of nearby communities found themselves without light and power for as long as 20 hours.

Seven miles from the *Tacan* station, 4.2 miles from the end of the runway, the *Skyhawk* had struck a 230 KVA power line. The wires broken were the middle pair of three vertical pairs of lines suspended between two steel towers at approximately 304 feet msl, 69 feet above the ground. The main wheels of the aircraft broke the first wire and the nose fork the second wire. One broken end of a cable slapped the port wing, causing minor damage to the slat and radar altimeter fairing. The aircraft did not touch either the upper or lower pair of cables. When investigators measured the vertical height of the aircraft and the distance between the wires, they found that the top of the vertical stabilizer missed the upper pair of wires by only one foot.



Grampaw Pettibone says:

Oh, brother! He really threaded the needle on that'n. The Accident Board pointed out that his altitude should have been 700 feet msl. That would've put him 323 feet above the highest of the two steel towers near the extended runway centerline. Seems that a bit more margin for error could've been provided by the planners of that CCA approach, particularly when the pilot is expected to maintain his altitude entirely on his own, based solely on pressure and radar altimeters without ground assistance.

That doesn't excuse the Ltjg.'s broken-

down scan pattern though. His intermittent radar altimeter and non-operative altimeter warning light and aural tone didn't help matters much either.

The angels were flying with replacement pilots that dark night.

Weakest Link

The *Crusader* pilot was making a ground controlled approach at an unfamiliar air station. The weather was bad and the runway was wet, so the pilot requested an arrested landing. The tower obliged, warning him that the abort gear was still in battery at the approach end of the duty runway. They advised him not to lower his hook until 2,500 feet down the runway in order to catch the mobile arresting gear.

Touching down on the numbers, the pilot noticed a chain alongside the runway, so he thought this was the arresting gear. He quickly lowered his hook.

The F-8 then picked up the cross-deck pendant of the E-5 chain gear at the head of the runway which was rigged for engagement from the opposite direction. Both cables were torn out and so was miscellaneous rigging gear on the sides of the runway. The anchor chain broke into several pieces, backlashed and crisscrossed the runway behind him as the pilot lit the afterburner and continued on into the mobile arresting gear, dragging the severed cables behind him. Luckily only limited damage was done to the aircraft.



Grampaw Pettibone says:

Whew! At least he got it stopped in one piece. If some guys would just listen to what they're bein' told, all of us would have less gray hair.

Checklist Charlie

The young fighter pilot had just returned from an operational deployment aboard the aircraft carrier, and it was his first night flying from home station. He landed his *Crusader* at 2035 for a quick recycle in order to complete a second field carrier landing practice session at the nearby outlying field.

Taxying into the pits, his F-8 was hot refueled (taking fuel with the en-



gine running). To expedite his turnaround for a 2100 Charlie time in the FCLP pattern, he only took about one half the normal load. Leaving the line, the ground crew checked the craft externally, wings spread and locked, wing up, no leaks, etc.

While taxiing out to the runway, the Ltjg. called for takeoff at 2059. The tower cleared the F-8 for immediate departure and asked the pilot to expedite due to landing traffic. He took the runway and a rolling takeoff was commenced. At 2,450 feet down the strip and at 125 knots airspeed, the aircraft lifted off in a shudder, extremely nose high, leaving a streak of sparks on the runway. Almost immediately the left wing dropped 30 degrees. As the pilot leveled the wings, the plane touched down on the extreme left side of the runway and rolled 250 feet into the grass.

The aircraft once again became airborne, very nose high, and the left wing dropped again. Application of full right stick very slowly leveled the wings. With the aircraft rapidly approaching the field arresting gear and still shuddering, the pilot ejected at 75 feet altitude. The aircraft hit the ground 6,700 feet from the takeoff point and 300 feet left of the runway, broke in half and exploded. The

Martin-Baker seat functioned as advertised and deposited the pilot 390 feet from the wreckage, unconscious but relatively unhurt.



Grampaw Pettibone says:

Great jumpin' Jehosaphat! I'm ready to blow my top. We buy 'em books and buy 'em books and all they do is tear out the pages. The pilot says he completed the checklist. Humph! The longitudinal (UHT) trim wheel on the stick and the trim actuator were found in the full nose-up position. The fuel transfer switch was still in the refueling position. Aileron trim was at three units right wing down. The fact that the fuel transfer was off further aggravated the situation owing to the center of gravity being aft of normal.

Solo tigers are notorious for ignoring checklists. They can do it from memory. Ha!

I think that *Crusader* left the pilot sitting in the fuel pits, while it went on without him.

A mighty expensive lesson for this gent. Perhaps some of the rest of us might profit by his mistake.

Snivels

'I don't believe I should be held responsible for the accident as I was authorized to fly on a day when there was absolutely no lift in the air.'

On these pages, NANews summarizes the opportunities for enlisted men in Naval Aviation and describes the job they do in direct support of Naval Aviators and Naval Flight Officers featured in the October 1968 issue.

AVIATION MECH

Produced by
JOC James Johnston



When Dan Kraft was growing up in Philadelphia, he liked airplanes and dreamed that some day in the future he would fly.

As he grew older, his initial interest in engines and mechanics increased. He had a teen-ager's obsession for cars. In the ninth grade of junior high school, he enrolled in a mechanics shop class. He got his own car and began tinkering with the engine. He hasn't been far from engines since.

Dan is still a kid. Nineteen. But he has a responsibility now — one that he asked for and accepts daily. He sought to combine his mechanical aptitude and his insatiable urge to fly. What he wanted to be was a Navy Aviation Mechanic.

As a high school graduate, he entered the Navy in December 1967

under the High School Aviation Program and was guaranteed a Navy school even before he left home for recruit training. He scored high in mechanics on the initial battery of tests and was assigned to the 14-week Aviation Mechanic School in Memphis where he specialized in reciprocating engines.

Kraft's interest in mechanics extends his days into nights at NAF Washington, D.C. He is still a car owner and spends "about 75 percent" of his free time at the base hobby shop working on it.

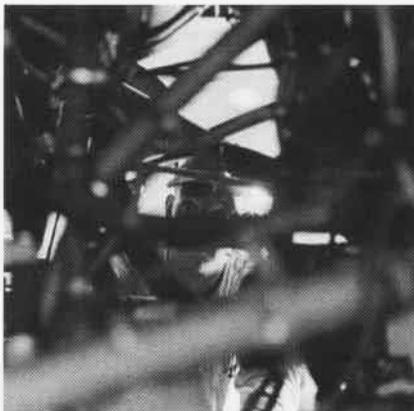
As an ADRAN — aviation machinist's mate (reciprocating) airman — he is currently working on the engines of S-2 Trackers, twin-engine antisubmarine warfare airplanes designed for aircraft carrier operations.

He realizes the responsibility he has every time he works on an aircraft engine: "When you're working on an engine, you know that one little mistake could cause a crash. It makes you work carefully.

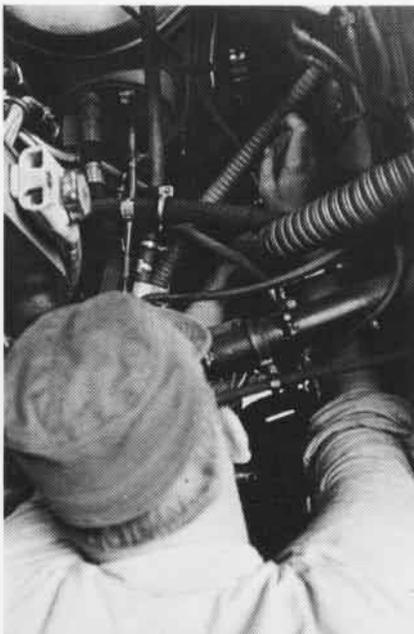
"I want to be an aircrewman on one of these planes. I think about that a lot — how I would feel flying in it if I hadn't done a good job."

Kraft is one of the youngest men assigned to the maintenance department at the air facility. His only complaint is that he sometimes does not have enough work.

"I'd like to have more to do and be able to work on my own more, but I realize that I must prove to my superiors and to myself that I can do a good job, then there will be plenty of work for me. And that's the way I like it."



KRAFT peers through an intricate maze of connections in an S-2 Tracker engine before he tackles the task at hand.



BEFORE he reported to NAF Washington, Kraft attended a three-month course at NATTC Memphis where he learned aviation fundamentals, basic mechanics, and how to repair and maintain reciprocating engines.

AVIATION MECH

Kraft would like to qualify as an air-crewman on an S-2 Tracker. He realizes the responsibility involved in his job, thinks about the perfection in workmanship he would like to enjoy as a flight crewman, and strives for perfection in ground maintenance work.



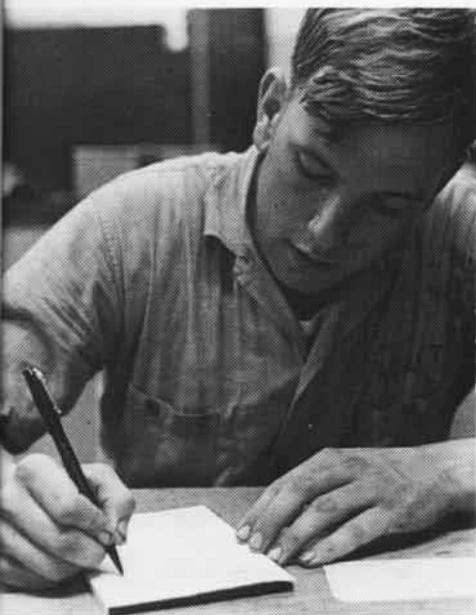
IN REPAIRING an engine, he is often on the top looking down, or under, looking up. He moves easily around the aircraft with the instinctive caution a mechanic has for propellers.



ENGINES have been Kraft's hobby since he was in junior high school. His keen determination to do any job he does right is personal as well as professional.



BUT PAPER work must be done; the job is complete when Kraft writes up the record.



February 10, 1914

To: Secretary of the Navy, Division of Operations

Subj: Recommendations in regard to ratings and pay of enlisted men on aviation duty

1. It is recommended that special ratings be established by the Navy Department for enlisted men who are detailed to aeronautic duty, such ratings to be given upon approval of the Commandant of the Naval Aeronautic Station and upon satisfactory completion of examination for such ratings before a board of two or more officers performing duty in connection with aeronautics and appointed by the Commandant of the Naval Aeronautic Station.

2. These ratings will consist of:

- (a) Chief Mechanician, corresponding to the rating of CPO.
- (b) Mechanician First Class, corresponding to the rating of PO1.
- (c) Mechanician Second Class, corresponding to the rating of PO2.
- (d) Mechanician Third Class, corresponding to the rating of PO3.

3. The base pay of the men holding the above ratings will be:

- (a) Chief Mechanician to have the base pay of \$80 per month and to receive the additional sum of \$20 per month while on actual duty in connection with aviation.
- (b) Mechanician First Class to have the base pay of \$65 per month and to receive the additional sum of \$20 per month while on actual duty in connection with aviation.
- (c) Mechanician Second Class to have the base pay of \$45 per month and to receive the additional sum of \$20 per month while on actual duty in connection with aviation.
- (d) Mechanician Third Class to have the base pay of \$35 per month and to receive the additional sum of \$10 per month while on actual duty in connection with aviation.

4. Should it not be the policy of the Department at the present time to authorize the above set ratings, it is urgently recommended that all enlisted men performing actual duty in connection with aeronautics who have completed or will complete four months service in this duty shall receive the additional sum of \$25 per month. This is to go into effect immediately.

5. It is believed that the establishment of permanent ratings as herein recommended for men detailed to aviation duty will give them a definite status in the naval service and will be a strong incentive to more thoroughly fit themselves for their various duties and will assure them promotions as they become better qualified in their special line of duty. The result of this will be to increase the efficiency of the entire force engaged in aeronautical work.

6. The increase in pay for the enlisted men detailed to aeronautic duty is recommended for the following reasons:

- (a) On account of the hazardous duties performed, such as testing motors and taking occasional flights.
- (b) On account of the exposure they are at all times subjected to in handling machines in the water.
- (c) On account of the high standard of attention to duty demanded of every man on aeronautic duty.
- (d) On account of the additional expense incurred. Due to the fact that the base has been, and to a certain extent will continue to be, portable, the men are subjected to an unusual expense in transporting their families.
- (e) On account of the additional incentive thus offered for the proper kind of men to volunteer for this work.
- (f) On account of the cases arising where the pay received is less than would be received aboard ship.
- (g) On account of the fact that acting appointment of petty officers is not authorized on this detail as all ratings are in excess.

7. It is believed that each member of every crew of all machines should at all times be ready to make a flight at the suggestion of the pilot. This serves the double purpose of exciting interest and insuring carefulness in each member of the crews. Therefore, it is recommended that all men detailed to duty in connection with aviation should be volunteers for this duty.

H. C. Mustin

MEN

Aviation Rates have evolved from the original Navy training flights. In the early days, there was but one rate. Today there are seventeen.

Back when they were flying "aeroplanes" by the seat of their pants, when Naval Aviation was little more than a dream, a young lieutenant named John H. Towers trained at the Curtiss plant in Hammondsport, N.Y. He realized then, in 1911, that Naval Aviation was going to need more enlisted men.

Years later, Admiral Towers recalled the first enlisted men in Naval Aviation: "I remember so well that group. I can't imagine how people thought up this thing. For instance, we got a cook, and we didn't have any place to cook. We got a coxswain, and we didn't have a boat. We got a gunner's mate, only we didn't have any guns. What we needed was mechanics, and that's what we didn't get. But we had to make them up out of these people who were assigned to us, and we worked there and flew."

In 1914 an aviation school was established at Pensacola, and in 1916 the first class of enlisted mechanics graduated. Several of them later became aviators or enlisted pilots.

They studied engines, aeroplanes and balloons, hydrogen gas plants and structural maintenance. They were graded also on sobriety and obedience. These men were not yet aviation rates. They came from the general service rates and, upon graduation from the school, were designated "Quartermaster (aeroplanes)."

In July 1921, four aviation rates were established for petty officers from third class through chief, except one which began at PO2: Aviation Carpenter's Mate; Aviation Machinist's Mate (PO2 and up), Aviation Metal-smith and Aviation Rigger. From those four rates have evolved 17, with specialties in more than 40 fields.

BEHIND THE PILOTS

As Naval Aviation becomes more sophisticated and demanding, so do the jobs that support air power. New rates are established to meet the increasing needs of the Fleet. Ten years from now, aviation rates will be more critical than ever.

The men who fulfill these requirements come from all parts of the country — from the farms and the plains of the Midwest, and the cities and coastlines of the East and West.

According to Rear Admiral Ernest E. Christensen, Chief of the Naval Air Technical Training Command, the capability of men being trained in aviation today is 20 percent higher than the national norm. The figure is based on the combined GCT-ARI (general classification test-arithmetic) test scores of each man. The average for aviation trainees today is between 115 and 120. The national average is 100.

"These men are better off educationally, especially in mathematics and the sciences. Of the men here at Memphis, 95 percent are high school graduates, 15 percent have attended college, and a small percentage have completed four years of college," the admiral said.

While the intelligence potential of today's students has increased, so has the amount of technical subject matter.

"The degree of knowledge obtained by these young men today and the airman of ten years ago can be compared to the difference in cost of an aircraft today and one a decade ago," the admiral said. "He knows one and one-half times the amount of technical detail that his counterpart of the past knew."

Most aviation rates are trained at the Naval Air Technical Training Center in Memphis, Tenn., but other aviation schools are located in Pensacola and Jacksonville, Fla., Lakehurst, N.J., and Glynco, Ga.

A high school graduate joining the

Navy as an aviation striker is guaranteed a school. Before receiving technical training, aviation enlisted men attend an indoctrination course to obtain basic aeronautical knowledge. The technical courses that follow range from two months to almost a year and cover phases of aviation from administration and supply to the techniques of airborne electronic data computation.

The training provided in Navy aviation schools is comparable to a two-year, post-high-school curriculum in electronics technology. In a 1966 government study, the electronics school course at Memphis met or exceeded the requirements set for a two-year course at a technical institute. The most advanced course is comparable to the junior level of electrical engineering.

Electronics courses, covered in 32 weeks, provide the equivalent of four semesters of civilian electronics training.

Courses for enlisted Naval Aviation Rates are taught by senior petty officers who themselves have been through the schools and served with the operating forces. They combine theory with simulated classroom problems on actual equipment to teach the future mechanics, systems operators and men who will load cargo planes.

In some rates, for example, that of air controller, intelligence is sometimes not enough. In the air control training tower at NAS Glynco, seasoned air controllers create problems for students in which, were they actual situations, planes would collide in mid-air or crash on the runway. Some of the students crack under the pressure. They are not blamed, simply assigned to another rate.

All aviation schools operate on basically the same principle: The place for errors and placement is in the Naval Air Training Command. The operational forces need responsible, well-trained men for the enormous job.

Since that first class of "Quartermasters (aeroplanes)" graduated in 1916, training methods have been tremendously modernized. Although the Naval Aviation Historian does not know how long the original course was (it is assumed to have been about two months), the men trained at Pensacola functioned as mechanics and were trained in the basic fundamentals.

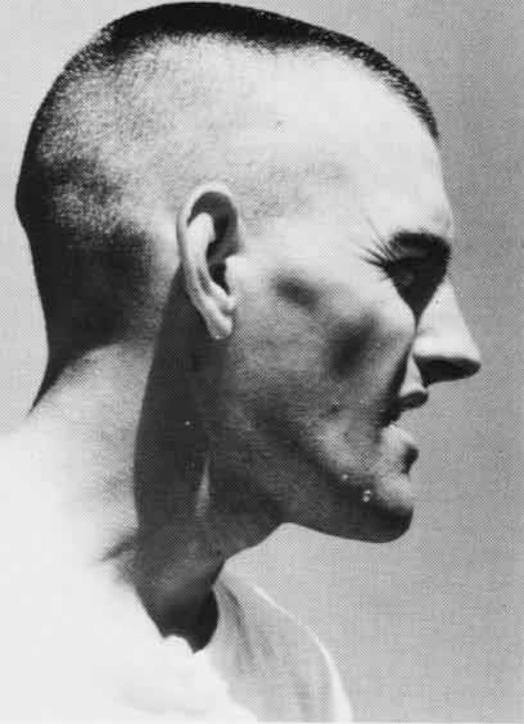
Today, throughout the Naval Air Training Command, the mechanics, as well as the rest of the aviation rates, must comprehend a greater amount of material, even though the classes are much larger. The vehicle used to convey the complex knowledge is programmed instruction, combined with visual aids and classroom lectures. With programmed instruction, each student is able to pace himself, and the instructors become tutors, rather than lecturers. (See page 15 for a related article.)

Upon completion of the basic "A" School, "designated strikers" are assigned a specialist job code and placed in the rating structure. Then they are sent to naval air stations in the United States and overseas to aircraft carriers and squadrons. Here they get the necessary experience to advance in rate. Their responsibilities, of course, increase, but so do the opportunities for advanced training in their field.

Assignments are made according to the needs of the Fleet, but each man also has a choice of duty station. A preference card is submitted during training, listing three duty choices.

Advancement in aviation rates is commensurate with the individual's training and desire. Most of the rates, because they are critical, are open channels for advancement.

One young trainee summed up the program when he observed: "Everything we learn in the classroom is information we use on our jobs. There's not a lot of unnecessary information to clutter our brains."



The Training Cycle

BOOT CAMP

By PH1 Robert E. Woods

Being a "boot" is part of every enlisted military man's experience. In boot camp, he changes from a civilian to a confident military man. Some recruits adjust easily; others, with difficulty. But however smooth or rough the course, everyone comes out of boot camp ready to take his place on the team.

In these pictures, James A. McKeon, Jr., is followed through recruit training in San Diego. McKeon's father, a

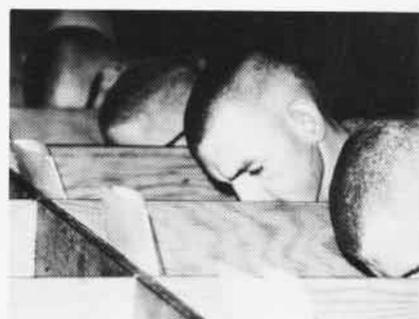
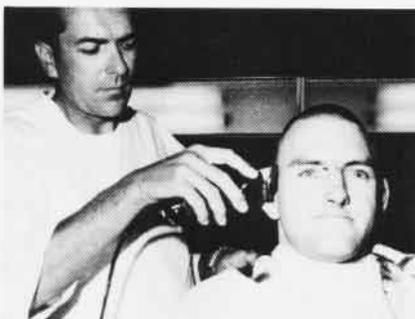
senior chief aviation ordnanceman, recently retired from the Navy after 31 years of active duty, and young McKeon hopes to encore his father's career. As a civilian, he worked with his father in their ammunition reloading business in National City, Calif. In keeping with his interests in weapons and airplanes, McKeon is training to become an aviation ordnanceman — his choice of the more than 70 rates available to him in the United States Navy.



McKeon confers with a Navy Recruiter in San Diego about aviation ordnance.



Now enlisted, young McKeon and other recruits from the San Diego area are sworn into the Navy. From recruit headquarters, they go directly to boot camp for nine weeks training.

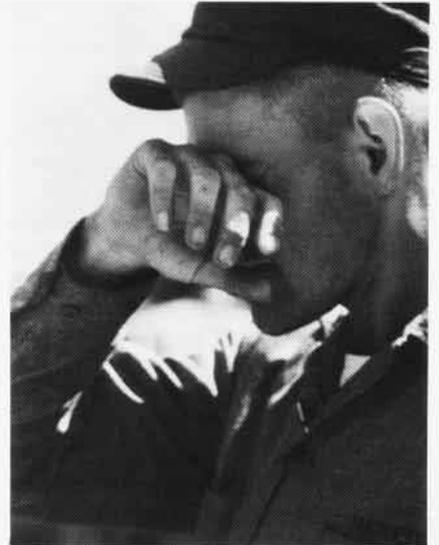


First a physical... then the "boot" haircut... and finally a battery of exams.



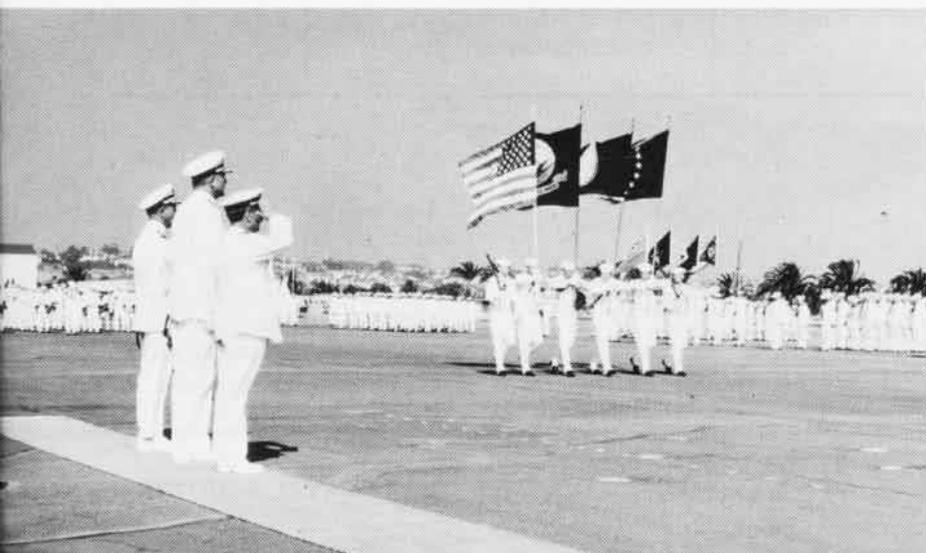
In boot camp, each recruit is fitted individually for his Navy uniforms. Training begins with assignments to companies and marching

drills. The recruits' competitive spirit gets full play as they make every effort to win honors in training categories of various kinds.



Fire fighting, swimming and open-air classroom work mold men into capable sailors.

The men work hard and long for weekly honors; sometimes strain on the recruit shows.



The last day of recruit training is highlighted by a review for families and guests. Below, a proud Navy man chats with his sisters after graduation exercises.

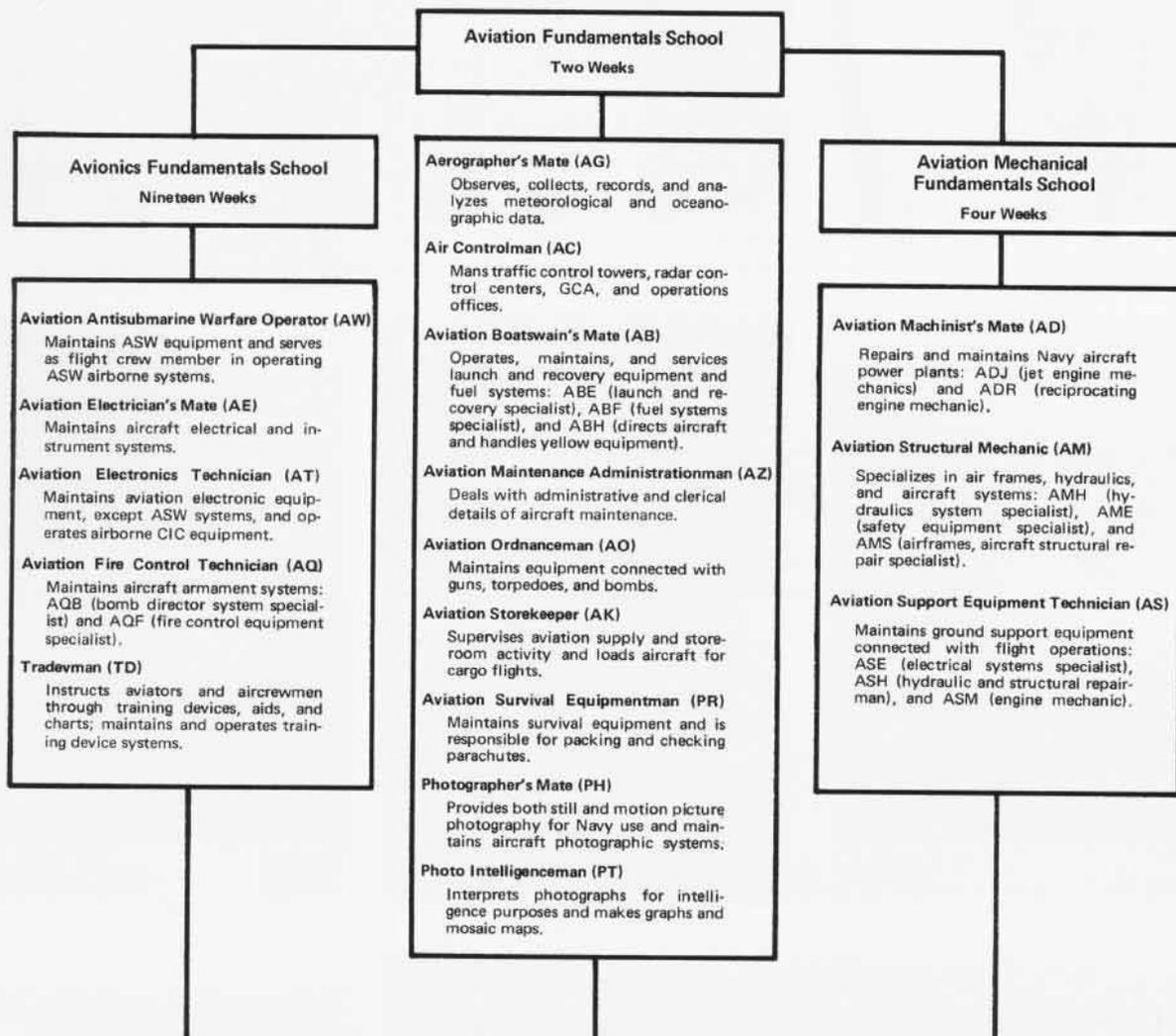


Group IX Rates



'Enlisted men in the Air Service have the same rating that they would have if serving on board ship or elsewhere in the Navy, and those enlisted men who have qualified for the operation of aeroplanes are issued certificates designating them as Quartermaster (Aeroplane).'

—Secretary of the Navy Josephus Daniels, April 7, 1916.



Combat Aircrew Wings were authorized February 8, 1943, as a recognition device for enlisted aircrewmen who were flying as gunners during World War II. These wings were silver with gold stars above the crest. Some of them may

still be seen in the Fleet, but their number is rapidly diminishing. In April 1958, the Bureau of Personnel authorized the current design (above) for enlisted aircrewmen.

Any enlisted man serving in an aviation rate is eligible to become an Aircrewman provided he meets the physical and practical requirements. Aircrew qualification is accomplished at Fleet and shore commands in the operating forces.



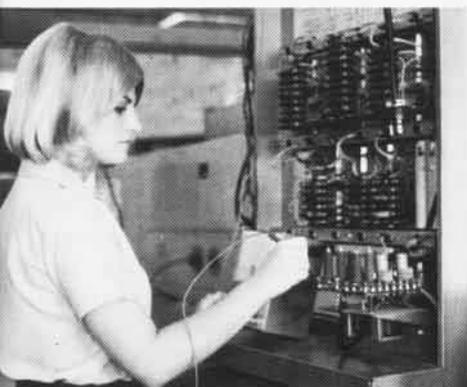
Programmed instruction allows students to get individual help.



An AS student works in shop.

Programmed Instruction

By JOSN Glenn Hodges



The prep school teaches basics.



In the avionics workshop.



A TD student at a console.

The 18th century French philosopher and educational theorist, Jean Jacques Rousseau, described the ideal learning situation as a tutor with one student, with the student learning at his own pace.

At Naval Air Technical Training Center (NATTC), Memphis, students outnumber their instructors 25 to 1, but they comprehend complex technical subjects without close assistance from their teachers.

The explanation for this revolution in the classroom is programmed instruction, best identified by the active role the student takes in the learning process. He advances toward specified goals in prescribed steps and knows at once the measure of his progress. In essence, the instructor becomes a tutor rather than lecturer.

"The beauty of programmed instruction is that the objectives specify what the student will be able to accomplish after completion of the programmed material," according to Cdr. Michael Wasco, director of training.

The students like the method, Cdr. Wasco says. "It's a change from the conventional method. Their retention rates appear to be equal to those achieved by a conventional system."

Programmed instruction has become a valuable instrument for analyzing course material more thoroughly and determining what should be taught. Its preparation has given

NATTC the opportunity to evaluate and determine the objectives of its conventional instruction methods.

To supplement programmed instruction, new and equally revolutionary teaching methods are already appearing on the horizon at Memphis.

Two modern training schools for aviation mechanics and electronics are being built. Memphis also is just four years from implementing computer-managed instruction.

"Computers will individualize instruction," Dr. George Mayo, head of the NATTC staff research division, says. "Each man will get a different course. It's all determined on the basis of how the student is progressing in the course and how much he knows about the subject."

After each phase of training, the computer will decide what the student will take next. The computer will be introduced in the aviation mechanical courses and, if initially successful, will be used in other schools.

The high quality of today's training is revealed by the fact that nearly 95 percent of the men who have graduated from NATTC schools during the last two exam periods were rated when they took the test the first time.

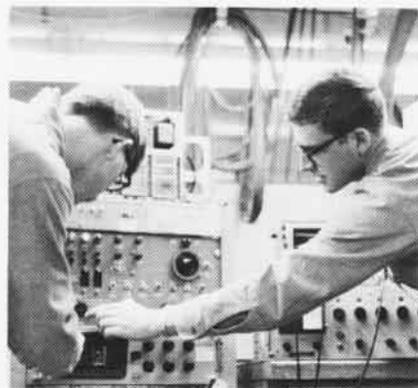
NATTC instructors, who get their initial training at NATTC schools, go to the Fleet for on-the-job experience and return to Memphis to teach, are credited with much of the success of the program.

The Training Cycle

SQUADRON SCHOOL

By Ltjg. Joseph W. Burgess

ComFAir Whidbey Public Affairs Officer



AQ's adjust their data processing unit test set which can detect which module is faulty.

There are those who say that it is a special breed of men who fly the Navy's Grumman A-6A *Intruder*, that it takes an unusual dedication to fly an aircraft on a single-plane mission in the black of night into heavily defended enemy territory.

It also takes a special breed of men to maintain that blunt-nosed, electronics gear-packed weapons platform that puts into play such equipment as search and track radars, a high speed digital computer, inertial and Doppler navigation systems, an automatic flight control system and integrated cockpit displays.

And it takes a large measure of dedication on the part of the maintenance personnel, too. In the end, it is dedication to performing tasks which result in A-6A flight crews having an aircraft capable of performing its mission. In the beginning, it is dedication to a long-strenuous training program, including classroom and on-the-job training.

At NAS Whidbey Island, Wash., the special breed of men who maintain the *Intruder* for the Pacific Fleet A-6A squadrons is highly trained in Attack Squadron 128 and in Naval Maintenance Training Detachment 1001.

There are six major aviation maintenance ratings in the current training program at VA-128: Aviation Structural Mechanic; Aviation Ordnanceman; Aviation Electrician's Mate; Aviation Electronics Technician; and Aviation Machinist's Mate (Jet Engine Mechanic). The tools and knowledge of all are necessary to keep the A-6A

Intruder ready to go.

Navy men who receive A-6A maintenance training at Whidbey Island either stay with VA-128 (which also instructs pilots and bombardier navigators to fly and fight the A-6A) or go to one of the four Whidbey-based Fleet operational squadrons — VA-52, VA-145, VA-165 or VA-196.

When an A-6A maintenance-designated trainee arrives at VA-128, he has from 12 to 22 weeks of intensive training ahead of him, depending upon his specialty or rating. If, for instance, he is to become an Aviation Fire Control Technician, he already has had as much as 41 weeks of Navy schools before he arrives, and he is one who has as much as 22 weeks of training ahead of him.

However, the actual length of training will be determined on an individual basis as indicated by the trainee's past experience and training, his rate and the desires of the squadron to which he will ultimately be assigned.

Regardless of his specialty, every student receives an indoctrination course in which he spends several days on the A-6A flight line and in which he goes into the maintenance shop areas of his future specialty. In addition, he receives fire fighting and damage control training along with instruction on safety precautions for the general line and carrier flight decks. During the indoctrination course, students are given a general introduction to the A-6A which deals with the mission,

systems, compartmentation and safety.

Following the indoctrination, all the maintenance trainees — from tin-bending Aviation Structural Mechanics to computer-expert Aviation Electronics Technicians — get down to the business of learning the A-6A at NAMTraDet 1001's bright, new multi-million-dollar training building.

As anyone in VA-128 will quickly point out, instruction is not limited to classrooms. On-the-job training is a part of the instruction. Normally, training at NAMTraDet 1001 is accompanied by one hour of on-the-job training for each hour in the classroom. Where classroom training exceeds eight weeks, however, on-the-job training is limited to eight weeks.

Student training for the A-6A includes the following:

- *Aviation Machinist's Mate (Jet Engine Mechanic)* — The J-52 jet engine, power plants and related systems such as the starter and fuel systems.

- *Aviation Structural Mechanic* — For some, aircraft structures and hydraulics, such as the flight control surface systems and hydraulic systems; for others, the environmental systems of the A-6A which include the cockpit air-conditioning and pressurization, ejection seats and oxygen system.

- *Aviation Electrician's Mate* — Generation of electrical power and its distribution, the inertial navigation systems and the automatic flight control system.

- *Aviation Electronics Technician* — The ultra-high frequency two-way com-

munications system, radar navigation equipment and other "black boxes" which help protect the aircraft.

● *Aviation Fire Control Technician* — The complicated, sophisticated weapons control and guidance system, its computers and related track radars.

● *Aviation Ordnanceman* — Bomb and rocket handling and the maintenance of the A-6A's armament release systems.

In the classroom, the student is under the instruction of a highly qualified teacher; in the hangar, he is under the careful eyes of men who have been in the business of maintaining the Navy's most sophisticated aircraft for quite some time.

An industry-trained computer technician has nothing on the training given to some A-6A maintenance personnel, particularly the fire control technicians. An Aviation Fire Control Technician's training usually includes 12 weeks of recruit training, two weeks of aviation "prep" school, 16 weeks of avionics fundamentals at an "A" school, 11 weeks of Aviation Fire Control Technician "A" school, and from 18 to 22 weeks of training on the A-6A.

Why all this training? Because both the Aviation Fire Control Technicians and the Aviation Electronics Technicians work with a complicated arrangement called DIANE (Digital Integrated Attack and Navigation System). DIANE frees the A-6A crew from the consideration of details which can be performed in this integrated computer-radar system. The crew can pre-select on DIANE an automatic course of action for their A-6A which will take them to the target, discharge their weapons and leave the area along a predetermined route — all in the dark of night over rugged terrain without the crew ever looking outside the aircraft. Aviation Fire Control and Electronics Technicians are responsible for maintaining that system.

The other maintenance personnel are just as important to the program, however, and the extent of their training shows it. Their classroom and on-the-job training is from 14 to 18 weeks.

Thoroughness is essential, for the

success of an A-6A mission depends on every element of the aircraft: the electronic and electrical systems, jet engines, ordnance loading and release mechanism, and the structural efficiency of the A-6A. No part is unimportant.

Lt. Robert A. Gammons, the VA-128 technical training officer and an LDO with 17 years in aviation maintenance, points out, "The young men we train here make the A-6A mission possible.

"They arrive here bright and ready to go," he continued, "and since VA-128 was commissioned in September 1967, some 5,100 have left here a little brighter, we think, ready to *make* or *break* their squadrons.

"A look at the Whidbey A-6A squadrons' achievements, with their dedicated maintenance personnel, many of whom trained here, shows us that they're *making* them," he concluded.

To make anything takes a special breed and a great deal of dedication — particularly when it comes to *making* a Navy A-6A squadron. There is little doubt, indeed, that a special breed of men keep them flying.



The plane captain and his crew thoroughly check out the A-6A after a flight. Here plane captain places pins in ejection seat for safety.

Tom L. Jones



The multiple radar and related systems are the heart of the sophisticated A-6A, Intruder. Here, an AQB is removing the search radar modulator from the electronics-packed nose.



USS JOHN F. KENNEDY

07



Experience has been called the great teacher. While the theory and technical knowledge taught in Naval Aviation School Commands is important for today's specialists, its full value cannot be realized until the individual tests it in the field. The young men joining the Fleet from service schools today combine their scholastic knowledge with on-the-job training under the supervision of senior petty officers.

By PHC B. M. Andersen

The Training Cycle

FLEET EXPERIENCE

This is a drill, this is a drill, general quarters, general quarters and flight quarters. All personnel concerned, man your flight quarters stations." The call blares throughout the immense, steel hull of the Navy's newest attack aircraft carrier — USS *John F. Kennedy* (CVA-67).

Gone are the shipyard sounds of riveting hammers and paint chippers. New sounds of screaming jet aircraft engines and steam catapults have replaced them as men and machinery are molded into a weapons delivery system. This is Fleet training: preparation for a mission.

The carrier's size is overwhelming. Quite probably the last of the conventional powered aircraft carriers, the *JFK* has the largest flight deck area (4.56 acres) of any ship afloat. The deck is 1,051½ feet long and 252 feet at its widest point. The hangar deck is 128 feet wide.

The four, five-bladed propellers — weighing 69,400 pounds each — can push the ship through the sea in excess of 35 miles per hour.

In contrast, only two anchors — weighing 30 tons each and suspended from anchor chains with links weighing 360 pounds each — are required to hold the carrier fast.

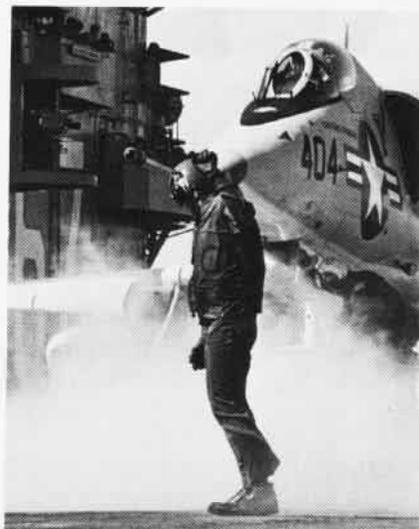
How do more than 5,000 men and such a huge ship fit together to obtain optimum battle efficiency? That is what Fleet training is all about. That is the purpose of constant training even after a man has graduated from a service school and joined the Fleet. This is where he benefits from the accumulated years of experience.

Constant teamwork between ship's company and Fleet training group personnel is the order as drill upon drill upon drill is held and observed. The training often begins early and runs far into the night during an operational readiness training cycle.

When USS *John F. Kennedy* sails, the men and machinery will be welded together, capable of meeting any situation, anywhere in the world.



The high-keyed tempo during Fleet Training Readiness Inspections is designed to test and evaluate the machine and the men who run it. Training, however, is a daily process — in the form of organized lectures, practical application on the job or, perhaps, simply questions on their own time after work. From the senior petty officers, the young men who will be tomorrow's supervisors learn the intricacies of their trades. This, briefly, is Navy teamwork.



A CATAPULT bridle checker signals it's OK to launch a Phantom (left). Above, plane director positions a Skyhawk for the next shot.



THE CYCLE continues as an arresting cable is hooked up (above) and an A-4 Skyhawk is launched while flight deck personnel stand ready.



A TRACTOR driver takes advantage of a lull in operations.

The Training Cycle

Air Reserve **PROGRAMS**

It is my duty to my country to love it, to support its Constitution, to obey its laws, to respect its Flag, and to defend it against all enemies.

— The American's Creed



Attorneys, electrical engineers, construction men, students, salesmen, government employees, correspondents and even presidents of their own companies — they are all Selected Naval Air Reservists.

These men and women come from the cities and country of America to train one weekend a month: to maintain a high state of readiness for national emergencies.

There are now three programs available to enlisted personnel in the Naval Air Reserve:

- *The Veteran's Program* consists of two divisions: one for former Navy or Coast Guard enlisted men and another for personnel from other services. Veterans are enlisted in the Reserve at the same pay grade they held in their last active duty enlistment.

- *The Advanced Rating Program* was established to take advantage of the pool of trained manpower in civilian life by bringing certain individuals into the Naval Air Reserve whose civilian skills are compatible with rates within the Reserve. To qualify for this program, a man must have served at least two years active duty. A rating compatible with civilian experience is assigned upon enlistment.

- *The Original Recruit Program* is for personnel with no previous military service. They must serve two years active duty and four years reserve drill to fulfill their military obligation. Upon enlistment, they begin attending meetings at the nearest naval air reserve station. Twelve months after enlistment or upon graduation from high school, they serve two years active duty, then return to civilian life to complete their obligated service time in the active Reserve program, attending meetings and participating in an annual two-week training cruise.

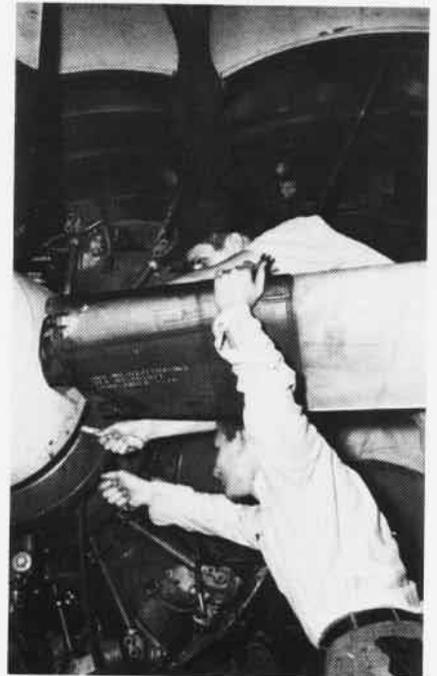
For further information on the Selected Naval Air Reserve Program, contact your local Navy recruiter or write: Chief, Naval Air Reserve Training, NAS Glenview, Illinois, 60026.

It's your future.

VP-68A2 crew members prepare for a training flight in a P-2 Neptune at NAF Washington, D. C., where they train weekends.



SELECTED Air Reservists converge one weekend a month on 18 Naval Air Reserve training units across the country. Navy aircraft fly to outlying areas and airlift them to their training units where they practice their part-time trades, preparing for recall. In these pictures, portions of the weekend training are depicted. Above, during a submarine exercise, a radio operator on an SP-2E Neptune sends Morse code signals. At right, midwestern Reserve recruits learn the importance of a gas mask and exit a tear gas chamber. Below, a Reserve patrol plane commander briefs his crew before an antisubmarine warfare training exercise. Below right, Naval Air Reservists in Washington, D.C., perform routine maintenance work on a P-2 Neptune patrol aircraft, used for ASW.



Preview of Things to Come





The P-3C Orion — with advanced electronic and weapon systems built around a digital computer — will join Navy antisubmarine patrol squadrons this year.

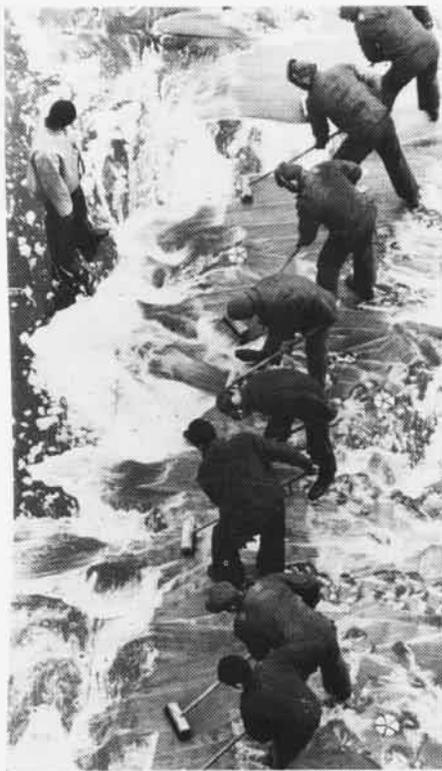
Orions are long-range, land-based turboprop aircraft built by Lockheed Aircraft. The P-3C will carry a ten-man crew (five officers, five enlisted men). Orions are equipped with bunks and a galley, where hot meals are prepared in flight, to sustain crewmembers on extended flights. The primary mission of patrol squadrons is to seek out and destroy enemy submarines.



BECAUSE of their special use and the fact that they were color, Curtsinger's pictures were exempt from the contest. But for his zeal, he has been named for a special category award. Specifically, his sunset view of the A-4 on the October 1968 back cover received more acclaim than any other photograph we ran.



IN THE JANUARY 1968 issue, PH3 Phil Cook captured the aura of an aircrewman to tell the story of that often overlooked man in the back end of the plane. The arresting composition of PH2 Frank Peak's picture of Ranger men scrubbing the deck presents one duty at sea in a pleasing way. Photographers Cook and Peak have returned since then to civilian life.



By JOC James Johnston

Light Water Tests" by PH1 Robert E. Woods, Pacific Fleet Combat Camera Group (PFCCG), has been selected for *Naval Aviation News*' second annual "best picture" award.

In determining this year's winner, *NANews* solicited the aid of several top photographic people in the Office of Information and the Naval Photographic Center. In addition to the Navy judges, the editor and publisher of *Government Photography*, John Neu-

bauer, and his associate, Bob Moeser (formerly a Navy photojournalist and now photographer for the Labor Department), assisted. More than 20 judges helped with the selection.

With so many well qualified opinions, the choice of pictures covered a wide range. Several excellent photos from 1968 issues were marked for final judging. The four on these pages, however, accumulated the greatest number of votes. The final selection was made by a narrow margin.

The general picture quality improved considerably during 1968. Also, during the year, *Naval Aviation News* changed from letterpress to offset printing, thereby enhancing the appearance of the already fine photographs.

October 1968 saw the first full-color covers in *Naval Aviation News*' 50-year history. PH3 William R. Curtsinger, an Atlantic Fleet combat cameraman shot thousands of pictures over a two-month period to come up with suitable material for such an auspicious event.

Ling-Temco-Vought photographer Arthur L. Schoeni has continued to send excellent photographs to *Naval Aviation News*. Schoeni, a former *NANews* editor, has provided consistently good pictures not only for the inside pages, but also for our first offset cover (August 1968).

In the final selection of a Picture of the Year — a title which, in the final analysis represents nothing more than a consensus — several aspects were considered:

- As a Navy publication, *Naval Aviation News* seeks, of course, to recognize active duty men who continually contribute to the betterment of naval photography.
- As an aviation periodical, the

Pictures of 1968

magazine certainly is interested in pictures essentially dealing with Naval Aviation and the men, planes, ships and equipment that make it the strong air arm it is.

• Finally, but not least, the picture content and the many small points that make a potentially good picture great must be considered.

The four pictures here met the last two requirements easily. PH1 Woods' shot fulfilled all of them.

The winner is one of a 125-picture series on Light Water tests at NAS Miramar. Woods shot several hundred pictures of the tests from which a final selection was made by the Photo Center. The originals were in color. The photographer copied his transparency on black and white film to provide this print.

PH1 Woods, a photojournalist graduated from the special program at Syracuse University (class of '66), has been assigned to PFCCG ever since. He has been a consistent contributor to *Naval Aviation News* for more than two years. His work appears in this issue.

Woods is a dynamic photographer with an extremely professional outlook. He continues to come up with new ideas and improved methods of telling the Navy story with words and pictures. He strives to perfect his own photography as well as contribute to improving photojournalism throughout the Navy.

NA News is pleased to announce this photograph by PH1 Woods as the top picture of 1968. We extend congratulations and thanks to him and the other fine photographers who have devoted so much time and talent towards making *Naval Aviation News* a magazine to be proud of.





FOUR OF the original JRM-1 Mars flying boats are shown above. At right is one of the big fire fighters now used to protect the forests in British Columbia.



WHERE ARE THEY NOW?

By Betty Godzinski
NAS Alameda

On August 22, 1956, when the Navy career of the Martin *Mars* flying boats came to an end at NAS Alameda, nobody knew that the old girls still had a lot of life in them and weren't about to retire.

The *Mars* seaplane, JRM-1, was a development of the XPB2M-1 which had been designed and built by the Glenn L. Martin Company as a patrol bomber. But by the time of the first flight of the XPB2M-1, the *Mars* had evolved as a transport and cargo carrier.

Five of the new type, the JRM's, were delivered to the Navy in the post-war period. With a wing span of 200 feet, the giants were 120 feet long and 42 feet high from keel to fin tip. They were powered by four 2,500-hp engines.

From the beginning, each of the five had her own personality and name. They were named for island groups in the Pacific: *Marshall*, *Marianas*, *Caroline*, *Philippine*, *Hawaii*. Home-ported at NAS Alameda, they were work-horses which earned their keep. They began transoceanic operations in 1946 and averaged at least one flight each weekday evening from Alameda to

Pacific ports. In ten years, they flew 200,000 passengers and thousands of tons of high-priority cargo.

They were record setters, too. *Caroline Mars* set a seaplane non-stop distance record — 4,728 miles between Honolulu and Chicago. Then she set another by ferrying 68,327 pounds of cargo in a single flight between Patuxent River and Cleveland. Later she hit another mark, transporting 301 sailors and their gear from Alameda to San Diego.

In June 1959, four *Mars*, plus all the spare parts, were sold to the Mars Metal Company of San Francisco. The fifth *Mars*, *Marshall*, had sunk in 1950 after she caught fire.

In July of that same year, the flying boats were sold to Forest Industry Flying Tankers Limited, composed of five of the major forest industry companies of British Columbia. Tankers Limited converted the former transports to water bombers.

In heavily wooded British Columbia, forest products are an important industry and forest fires a serious

problem. Aerial water bombing had proved effective in fighting fires, but the results were limited because of the small tank capacity of the aircraft used. Terrain and payload dictated the type of plane required. The big boats were the answer.

Marianas launched the new career of the *Mars* family in midsummer of 1960. Installed in her fuselage was a 6,000-gallon, plywood water tank. Water was picked up by two retractable probes mounted behind the step and released through the two side cargo doors which were modified for the purpose. During the remainder of the season, she made 26 drops, dumping 127,000 gallons of water. But in June of 1961, she hit some trees and crashed, and a second *Mars*, *Philippine*, was converted.

By the end of 1963, *Philippine* had proved herself. She was able to put out fires without aid from ground parties and had dropped 495,000 gallons. As a result, *Hawaii* was also converted, ready for the 1964 fire season.

Caroline Mars will never fly again. She broke loose from her moorings in a freak windstorm and was damaged beyond repair. Stripped of all parts

which could be used on *Philippine* and *Hawaii*, the remnants disappeared to salvage in 1967.

But *Philippine* and *Hawaii Mars* have an exciting present and a bright future. There is a constant stream of visitors to their operating base at Sproat Lake, near Port Alberni, Vancouver Island, where their smart red and white paint job makes them easy to spot.

And they put on a spectacular show. Once the fire target is established, a Cessna 195 establishes approach and flight patterns for them and checks on water pickup areas. A stretch of water five miles long is preferred for the water pickup.

An average of 15 minutes is required for a full cycle of water pickup, dump, and return for reload. The captain eases the *Mars* onto the water, and when it is planing at precisely 70 knots on the step, he lowers the probes for the pickup. Six thousand gallons are loaded in 20 seconds.

A single water drop effectively covers an area of three to four acres. Fresh water is preferred to salt water because a gelling compound can be added which concentrates the water load. Drops from an elevation of 5,000 feet then cover the same area as untreated water dropped from 250 feet.

During the past eight years, the *Mars* have assisted in the suppression of 72 fires, dropping over 6,000,000 imperial gallons. They are doing a superb job of protecting the vast and rich forest of British Columbia.

LET US KNOW. . .

. . . if you are not receiving *Naval Aviation News* in good condition and in the desired quantity at the proper address. We are the victims of a computer that seems to be out of kilter. Changes of address or quantity are being delayed for months despite our constant attention to distribution. If you write, we will make every effort to see if we can do something in your behalf.

Fifty Years Ago

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

On March 1, NAS Pensacola reported that the photographic section had been experimenting on a camera which would record hits made with live bombs. A bracket had been completed that would allow a camera to be mounted on the lower righthand wing of an HS-1 seaplane. A few days later, satisfactory results were obtained with the camera recording the smoke puff of the small bombs and also the towed target. The report ended with the comment: "With this camera, it is hoped that the person checking up on the students' bombing will be able to determine within a very few feet just how near the students come to hitting the target."

Hampton Roads reported that four HS-2 seaplanes were flown to Rockaway to escort to sea the ship leaving New York March 5 with President Woodrow Wilson on his way to the Peace Conference to be held at Versailles, France.

On March 12, Hampton Roads announced that a landplane had been launched March 7 from a sea sled for the first time in the history of Naval Aviation: "This spectacular attempt was successful at the first trial and proves the feasibility of a most extraordinary manner of starting flights. This valuable method of launching has been developed as the result of much careful experimental work under the direction of Captain H. C. Mustin, USN, and the

initial performance, after several preliminary operations and testing of gear, was supervised by him." Ltjg. F. M. Johnson, USNRF, piloted the landplane which was of the N-9 type (Hispano-Suiza) with landing chassis. When the sled had attained an airspeed of about 50 knots and the plane motor showed a speed of 1,200 rpm, the pilot pushed his throttle wide open and released the plane, zooming upward about 20 feet with ease. A few days later, the experiment was repeated, in a machine carrying two pilots, with equally satisfactory results.

Still another report from Hampton Roads (March 20) stated that night flying had been carried out three nights during the week, "flying conditions being excellent, calm sea, very little wind and good moonlight." On the first test, the aim was to determine the practical value of Very's pistols as a night landing device. Several landings were made and, although the outcome was not considered to be satisfactory, the experimenters thought that the pistols might be valuable in an emergency.

Another type of landing device Hampton Roads tried consisted of two lamps mounted some distance apart on the upper wing surface. These were so set that the beams of the two lights would converge on the surface of the water when the aircraft had descended to a point 20 feet above the water. This, however, was not considered practical because it was desirable for the whole surface of the water beneath the seaplane to be well illuminated to show up any obstruction.



ON PATROL

with the Fleet Air Wings

VP-56 Begins Training for P-3C

With the delivery later this year of the P-3C to VP-56, NAS Patuxent River, Md., patrol aviation will step into a new age. The P-3C introduces the A-NEW system (*NA News*, March 1967, p. 37), "a new" way to meet the growing menace of unfriendly submarines threatening Free World sea-lanes. The system features the use of a central digital computer and associated computer-generated displays.

Training seminars and schools to prepare VP-56 officers and men to use the new system effectively are already underway. Commander John J. McIntyre, squadron C.O., has established a Plans Department to program the transition from the P-3B. Under LCdr. Lawrence Creswell, this department will anticipate personnel, schooling and maintenance requirements and will participate in writing the guidelines necessary for the tactical role of the new weapon system.

Commander Melvin Meltzer, VP-56 X.O. (formerly A-NEW project officer at the Naval Air Test Center), is conducting seminars and giving lectures to squadron personnel on the use of the computer while other personnel attend schools in digital fundamentals and related fields.

Because NS Keflavik, Iceland, is a possible deployment site for the new *Orion*, VP-56 is regularly rotating crews to that station for area and operational familiarization.

Four Awards Won by VP-5

In December at NAS Jacksonville, VP-5 received the four most coveted awards available to Atlantic Fleet patrol squadrons: the CNO Safety Award, the Patrol Maintenance Award, the Battle

Efficiency E and the Captain Arnold J. Isbell ASW Trophy.

Admiral Thomas H. Moorer, CNO, presented the squadron with the Safety and Maintenance awards, and Rear Admiral Robert J. Stroh, ComFAirJax, presented the E and the Isbell Trophy. Commander J. R. Farrell, then VP-5 C.O., accepted the awards on behalf of the *Mad Foxes*.

Rear Admiral Ralph Weymouth, ComFAirWingsLant, and Mr. Fred Lashley, vice president of Lockheed-California Company, donor of the maintenance trophy, were among the guests.

The presentation ceremony marked a high point in the history of VP-5, which was commissioned in 1942.

Recently, Commander H. C. Abelein took over as C.O. of VP-5.

VP-16 Eagle Receives Air Medals

At a ceremony held in December at Kindley AFB, Bermuda, Commander T. H. Ross, C.O. of VP-16, presented



ADMIRAL Moorer (R) presents CNO Maintenance Award to Cdr. Farrell, VP-5 C.O.

AMS3 Johnny P. Cruse with his 24th through 27th Air Medals and a Letter of Commendation from Admiral John J. Hyland, CinCPacFlt.

Cruse received the medals for "missions in support of combat operations in Southeast Asia against the insurgent guerrilla forces while serving with Helicopter Attack Squadron 3."

VP-2 Again Wins 'Totem Pole'

When VP-2 won the ASW Totem Pole Trophy recently at NAS Whidbey Island, it was the fourth time out of five that this squadron has taken top honors in the quarterly ASW competition. (The squadron has competed only four times — one time they were away on an overseas deployment.)

Out of a possible 7,800 points, VP-2's Crew Four racked up a total of 6,200 to make the winning score. LCdr. Alfred F. Beavert was the crew's plane commander. Members of the crew are: Lts. Phillip G. Stueck and William R. Belangia, Ltjg. Robert M. Coker, ADJ2 Thomas R. Sanders, ADR3 Gregory M. Karl, ATR2 Thomas A. Lemonds, AW3's Edward J. Adamski and Howard R. Holcomb, AE3 Brent A. Raupers, AO2's Thomas W. Skoblicki and Leonard J. Coufal.

The trophy was presented to Commander Lee Maice, Jr., C.O., by Rear Admiral Herman J. Trum III, ComFAir Whidbey.

2,500-Hour Pins for VP-8 Officers

Lts. Kenneth Liechty, Robert Hamilton and Vincent Gilroy, with VP-8 at NAS Patuxent River, now wear 2,500-hour P-3A tie pins, an unusual achievement for first tour personnel. All three are veterans of the squadron's Far East deployment.

A-7E Attack Systems

By Lt. Frank Wagner

Naval Air Test Center, Patuxent River, Md.

Two hundred years ago the pioneer hunted game with what was then his extremely accurate Kentucky rifle. When he fired, the hunter estimated range and wind, sighted along the barrel and often achieved remarkable results. Today, in combat, an attack pilot stalks his target in a million-dollar-plus airplane. When he delivers his weapons, this modern hunter shoots just like Daniel Boone.

The attack pilot's tactical flexibility in the target area is limited; he must arrive at a fixed point in space for proper weapon release because he has a "canned solution." If enemy defenses force him into evasive maneuvers near the roll-in point, a decline in bombing accuracy will be the probable result. The CP-741 bombing computer has done much to improve bombing accuracy but, to remove further the "Daniel Boone" quality from bombing, the Navy has developed integrated weapon systems for attack airplanes.

The A-7E will be equipped with an integrated system that provides the attack pilot with a greater capability to "shoot from the hip" than ever before. The system components in the A-7E, typical of the Navy's current attack system development, are: digital computer complex, inertial platform, doppler radar, forward-looking radar, head-up display, radar altimeter, horizontal display, vertical display, armament system and air data computer.

Each component is part of a subsystem that sends information to or receives information from the computer. The system is fully "integrated"; that is, its components talk back and forth. If a single subsystem is in error, the system is designed to reject its information, substitute from an alternate source and then inform the pilot of the degraded status.

A major problem in a heavily defended area is navigation. The constant jinking required precludes accurate dead reckoning. The integrated system can pre-store numerous navigational check points that can be called up during the flight. Regardless of the pilot's maneuvers, he has a continuous readout of heading and distance to the next check point.

During the attack itself, the pilot



need not be at a particular dive angle, airspeed or altitude. He can be at any G within the ordnance release envelope.

To deliver a weapon, the pilot places an aiming reticle over the target and commits the system. The forward-looking radar is then boresighted to this position. Slant range and depression angle are fed into the computer along with wind and velocity information from the inertial platform and other components. The computer complex continuously generates the weapon delivery solution at a high iteration rate. When the airplane flight condition matches the ballistic requirement to put the bomb on target, the weapons are automatically released. Incidentally, the computer can solve the delivery problem with the airplane in a banked turn.

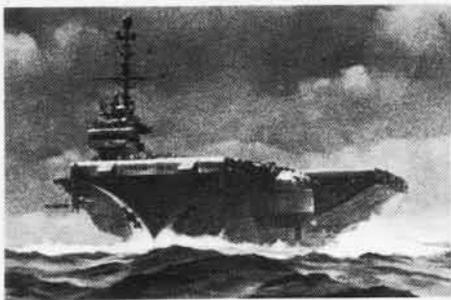
The armament system is designed so that the distance interval between bombs on the ground is selected by the pilot. The computer complex then determines the release interval for any airplane flight condition within the release envelope. This feature will en-

hance target destruction and allow detailed weaponeering in strike planning.

The head-up display (HUD) is an all-attitude presentation exhibited on a large gunsight type glass. HUD is the primary pilot instrument in the A-7E for weapon delivery, navigation, terrain following and landing.

Attack integrated weapon systems are designed to ease the pilot's burden in getting to and from a heavily defended target while retaining accuracy at the target. With the computer generating a continuous navigation or weapons delivery solution, the pilot's tactical flexibility, i.e., his ability to adjust to the surrounding environment, is greatly expanded.

The system does not take anything away from the pilot. It simply provides him with the tools which will allow increased tactical innovation on combat missions. In these systems, the pilot "closes the loop" so that he still flies and commands his machine. The weapon systems, however, let him fly to the limits of the airplane and not just his own.



at Sea with the Carriers

PACIFIC FLEET

Constellation (CVA-64)

As CVA-64 steamed in the Tonkin Gulf on her fourth combat cruise, Captain John S. Christiansen relieved Captain William R. Flanagan as commanding officer. Selected for admiral, Captain Flanagan was scheduled to become Deputy Commander, Naval Forces, Vietnam. Captain Christiansen was formerly C.O. of USS *Tappahannock* (AO-43).

Coral Sea (CVA-43)

When the "To Tokyo with Love" charter Super DC-8 landed at Haneda International Airport, Tokyo, on board were the wives of 250 *Coral Sea* crewmen. They had traveled half way round the world to spend the holidays with their husbands. The men had just completed two long periods on the line in the Tonkin Gulf on *Coral Sea's* fourth consecutive combat deployment in as many years. It was also the fourth Christmas in a row that *Coral Sea* and her men had spent in the combat zone.

This was the first time any U.S. Navy ship had taken on the huge task of chartering a passenger aircraft, making hotel reservations, arranging for shots, passports and visas, and handling the disbursements and monetary collections for such a project. The round trip fare was \$315, less than half the normal commercial charge.

Well in advance of the wives' arrival, Captain James Ferris passed the word: maximum leave and liberty during the ship's stay — for both married and single personnel. Crew members signed up for the tour on a first-come, first-



EVANGELIST Billy Graham talks with crewmen of the USS *Ranger* after delivering a sermon in the hangar bay. The visit was part of a tour of military installations in Vietnam.

served basis, and it turned out that the reservations were split almost evenly between officers and enlisted men.

Plans for the tour started four months before the ship departed for WestPac. Two *Coral Sea* officers, LCdr. Jim Messegee and Ltjg. Russ McCurdy, had the monumental task of

coordinating the flight, hotel reservations and sight-seeing and skiing trips for the men and their wives. When Lt. McCurdy, a bachelor, was asked if he would recommend such a logistics task to other ships, he said, "A positive yes. It's something many of us would like to see again on the *Coral Sea*."

And even with the excitement of the coming visit, personnel found the time to think of those less fortunate. The letter below is one of 43 received from Philippine school children whose \$22 school tuition costs are paid by the men so that the youngsters can acquire a high school education.

"Dear Sirs, Hello!! How are you for this day? I'm proud to converse you in my letter. . . . I was so very happy when our teacher told me that I was one of the members of the Operation *Schoolhouse*.

"May our Almighty bless you all ways for your kindness."

Operation *Schoolhouse* extends the education of a few children who otherwise would end their academic training at the sixth grade, the extent of free public schooling in the Philippines. The students who qualify all live in an area where the average annual income is \$150 and only two public high schools exist for thousands of youngsters. Pupils interested in the program are tested, and the ones having the highest scores and the greatest needs are chosen.

Almost 800 children from the provinces of Zambales, Cavite and Tarlac are sent to school by the program under the auspices of the Seventh Fleet and the Naval Communication Station, Philippine Islands.

Hornet (CVS-12)

Lt. Robert H. Birkemose, VS-35, snagged the honor of making the 107,000th arrested landing on *Hornet* during operations off the coast of Vietnam.

Cale Yarborough, winner of four of America's biggest stock car races in 1968 and Ford's racing "Man of the Year," received another honor when he visited CVS-12. He was named an "honorary *Hornet* tractor driver" in recognition of his ability behind the wheel of a tractor. Captain Jackson A. Stockton, C.O., presented him with a sweat shirt similar to those worn by the ship's plane handling crew.

While learning to operate the MD-3 tractor used on *Hornet's* flight and hangar decks, Cale found that, although the vehicle lacked the speed and han-

dling qualities of his competition car, it had certain assets that would be difficult to match.

The MD-3's 17:1 rear-end ratio limits its top speed to five miles per hour and its horsepower (102 at 3,000 rpm) and torque (204 ft/lbs, at 1,800 rpm) are small indeed compared to Cale's racing machine. Of course, its 12,000-pound gross weight and 67-inch wheelbase make the low-slung tractor incredibly stable. It is doubtful that there's a racing car made that can match the MD-3's 11-foot turning radius.

Ticonderoga (CVA-14)

Captain Richard E. Fowler, Jr., relieved Captain Norman K. McInnis as commanding officer of CVA-14 in a flight deck ceremony held while the attack carrier was moored at NAS North Island. Vice Admiral Allen M. Shinn, ComNavAirPac, was the principal speaker and presented Capt. McInnis with the Legion of Merit for his performance during *Tico's* 1968 Tonkin Gulf deployment. Capt McInnis then reported as chief of staff for ComCarDiv-3.

Ranger (CVA-61)

Another first in Naval Aviation took place when a TA-3 with Vice Admiral William F. Bringle, Com7thFlt, aboard,



CAPTAIN Stockton, *Hornet* C.O., presents special sweat shirt to Cale Yarborough for his mastery of the carrier's MD-3 tow tractor.



THE FIRST carrier landing of a TA-3 was made aboard the *USS Ranger* as she operated off the coast of Vietnam. VAdm. Bringle, Com7thFlt, was aboard the plane.

made its first carrier landing, on *Ranger*. The TA-3 differs from the basic A-3 in that the bomb bay has been converted to passenger seats and high priority cargo space, enabling this particular *Whale* to deliver passengers and critical material directly to carrier decks at high speed over long distances. The record landing was made as *Ranger* was steaming on her eighth Westpac cruise and her fourth combat deployment off the coast of Vietnam.

Intrepid (CVS-11)

The staff of *The Achiever*, CVS-11's monthly paper, has made it easy for procrastinating letter writers. They leave a space in the paper "for your letter home." What could be handier?

Princeton (LPH-5)

When *Princeton* pulled into Long Beach after her last Westpac cruise, she had steamed 38,476 miles while spending 176 days of a 229-day cruise at sea. As flagship for Amphibious Ready Group Alfa, Captain Carl M. Cruse's

amphibious assault carrier participated in Operations *Fortress Attack II* and *IV*, *Proud Hunter*, *Swift Pursuit* and *Eager Hunter*.

Tripoli (LPH-10)

Tripoli had a United States Marine at its helm for the first time in its 2½-year history recently when SSgt. Jerry Martin took the conn and sent the 18,300-ton assault ship on a short series of turns off the coast of Vietnam. Martin was invited to take the helm by *Tripoli's* C.O., Captain D. B. Shelton.

Sgt. Martin, an intelligence chief for Special Landing Force Bravo embarked aboard *Tripoli*, had associated with a "Tripoli" of a different type before coming aboard: His family lives in Tripoli, Iowa.

During a recent tour of amphibious units deployed to Vietnam, Vice Admiral John V. Smith, ComPhibPac, presented awards to crew members of LPH-10. Included in the awards was a long-awaited Air Medal for Ens. Donald W. Perry. Ens. Perry, however, was not available for the presentation, and his decoration was accepted by Commander Donald W. Perry.

The strange chain of events that led to the presentation started on January 31, 1951, when Ens. Perry was attached to VP-22, conducting combat flights against aggressor forces in Korea. His actions did not go unnoticed, and the young ensign was recommended for the Air Medal. But during the hectic days of that period, through an oversight, the award was never presented. But this was set right when Adm. Smith presented the Air Medal and Gold Star in lieu of the second award to Cdr. Perry, who gratefully accepted it on behalf of the youthful ensign he once was. Commander Perry is executive officer of *Tripoli*.

Yorktown (CVS-10)

The WW II famed *Fighting Lady* helped usher in a new era in space travel with her final Pacific performance: the successful recovery of *Apollo 8*.

Then it was back to San Diego for a quick off-load of HS-4 and Det. 34 of

VAW-111, part of the recovery force for the *Apollo* flight. A stop at Long Beach completed the final mission in the Pacific of CVS-10.

From Long Beach she steered a course to her new home port, Norfolk, Va. On the way, she made port calls at Valparaiso, Chile, and Rio de Janeiro, Brazil.

Yorktown replaces the decommissioned *Randolph* in the Atlantic Fleet.

Playboy Clubs have nothing on the first class petty officers aboard *Yorktown*. Their key won't let them in to see the "bunnies," but it does admit them to a spacious, modern, air-conditioned lounge.

BTC John W. Marks, who led the campaign to establish the mess when he was a BT1, said, "We had to find a compartment that was available and accessible to the general mess. A 30 x 30-foot compartment was selected, and three months and many hours of hard work were spent redecorating."

To the 96 PO1's, their mess is a home away from home. Complete with color television, refrigerator and two coffee pots, the mess will seat 30 for meals and almost all the members for the nightly movie. Luncheon meat, cheese, fresh milk, bread and ice cream are in abundant supply for snacks 24 hours a day. The coffee pots are never empty.

Bon Homme Richard (CVA-31)

Bonnie Dick received her second Navy Unit Commendation of the Vietnam conflict in ceremonies held aboard ship at NAS North Island. The commendation, covering the 8½-month period from January to October 1968, was presented by Rear Admiral F. A. Bardshar, ComCarDiv-7, who was aboard CVA-31 as Yankee Station commander during part of that WestPac deployment.

ATLANTIC FLEET

Lexington (CVT-16)

Lexington left the Alabama Dry Dock and Shipbuilding Company at

Mobile with a new hull number and a more efficient fuel system. She was the first large aircraft carrier to enter the port.

Saratoga (CVA-60)

Lt. Ralph V. O'Dell, ordnance handling officer, was recently awarded \$1,460 for a beneficial suggestion which he perfected while on duty at the Naval Weapons Evaluation Facility, Albuquerque, N. M.

The safety device developed by Lt. O'Dell is an additional precaution to prevent accidental firing of LAU 10/A rocket launchers and SUU-40 flare ejectors. It uses a safety pin attached to the aft electrical connector. During storage of the launcher and while it is being mounted on the aircraft, the pin interrupts the electrical circuit. Just prior to launch of the plane, the pin is removed, and the circuit is reinstated to normal position.

Independence (CVA-62)

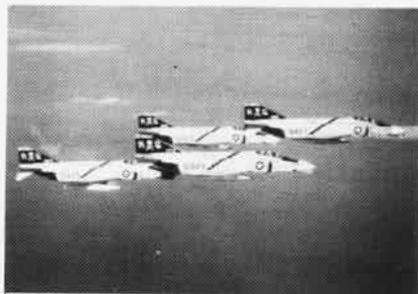
Independence celebrated her birthday while she was anchored at Palma, Spain. In the ten years since she was commissioned, CVA-62 has made a combat deployment to Vietnam, participated in a NATO exercise in the Norwegian Sea and was just finishing her sixth Mediterranean cruise. The photographs on the next page were taken during that deployment. Shortly after the celebration, Captain Herbert S. Matthews, Jr., commanding officer, set CVA-62 on a heading for Norfolk, Va.

But before she left, a lost "spirit" appeared and was present for an informal ceremony. The spirit was Captain Matthews and the ceremony was held in his honor by the members of VA-76. Squadron members gave him a tri-cornered "cocked hat" which the *Spirits* had reconditioned for him after using it as a model for getting each pilot in the squadron a new hat. The cocked hat and musket, symbols of the American Revolution, are the basis for the squadron emblem.

Capt. Matthews originally acquired a tri-cornered hat when he served as VA-75's first exec. He designed the squadron's emblem and the cocked hat.



AS INDEPENDENCE cuts her way through the Med (above), a pilot from VAW-33 applies full throttle to an A-1E as it clears her flight deck (far left). The UH-2 (left) of HC-2's Det. 62 is the ship's SAR aircraft. VAW-124 flies the E-2A (below left), and two squadrons fly the F-4J Phantom II's (below right). The ammunition ship USS Nitro (AE-23) cruises 150 feet from Independence as she prepares to transfer ammunition to the aircraft carrier while both ships maintain a speed of twelve knots.





THE SELECTED AIR RESERVE

Naval Air Station, Los Alamitos, is an ideal duty station because of its proximity to ocean beaches and snow-capped mountains. Thirty miles from Hollywood, it is often called "the station near the stars." In the photograph below left, Captain L. D. Ruth, station C.O., presents a Certificate of Merit to Jackie Cooper for his efforts in behalf of the Naval Air Reserve program. Below right, PN3 John F. Schumaker visits with Barbara Eden who is the star of "I Dream of Jeannie." In the bottom photo, LCdr. Jerry Pierce, Los Al PAO, and Lt. Don Stewart, VA-7L4, discuss the Naval Air Reserves with "Dragnet" stars Jack Webb and Harry Morgan. Lt. Stewart is a television actor.



New Landing Training Device Is Being Used at Pensacola by VT-4

At NAS Pensacola, a new training device which simulates actual carrier landings is being used by Training Squadron Four to enable the student pilot to experience all the sights and movements of his plane, the sea and the carrier, in a 27x35-foot classroom.

The Aircraft Carrier Landing Trainer was built by the Goodyear Aerospace Corporation, Akron, Ohio, under a contract with the Naval Training Device Center, Orlando, Fla.

Flight controls and an instrument panel from a T-2B are used, along with an image of a *Forrestal*-class carrier. The life-size carrier image is created from a four-foot model through the use of an advanced optical pickup, a high-resolution TV system and an intricate image display.

Student pilots are "catapulted" from the carrier deck, fly the plane out of sight, turn around, locate the carrier from as far as six miles out and land. Optical, electronic and mechanical devices are so designed and coordinated that the unit is accurate to within two feet from as far as six miles out to touchdown.

The imagery is made possible through the development of lightweight spherical plastic mirrors. Three such mirrors simulate a 240° view of unlimited seascape and allow the pilot to turn his head freely without losing the scene which appears three-dimensional and distant.

A computer accepts inputs from the plane's flight controls and directs the carrier model, the visual generation equipment and cockpit motion. The cockpit and visual presentation are mounted on a platform which moves to simulate aircraft pitch and roll.

An electronically generated Fresnel Lens Optical Landing System (FLOLS) is projected on the flight deck to assist the pilot in making descent on the proper glide slope. The FLOLS consists of horizontal reference lights and a center light or "meatball" which flashes above or below the reference lights to indicate whether the glide slope is too high or too low.

Instructors can control the FLOLS

glide slope angle, wind direction and velocity, carrier speed and visibility effect. They also can turn calm seas to rough, changing the roll and pitch.

A TV monitor duplicates for the instructor the scene the pilot sees. Flight path deviations are recorded on a tape to assist in scoring the student pilots as they learn to control the aircraft by use of instruments, visual cues and "seat-of-the-pants" feel.

USS Essex is Leaving the Fleet Will be Decommissioned by June 30

USS *Essex* (CVS-9), the oldest carrier in active status in the Navy, will be decommissioned by June 30, according to a recent Department of Defense release. Early this month, the ASW carrier will leave Quonset Point, R. I., to begin the decommissioning process. *Essex* will eventually be consigned to an inactive ships' facility and her officers and men will be ordered to other ships and stations throughout the Navy.

10,000 Safe Hours Accumulated 16-Month Record for VMA(AW)-332

From August 1967 to December 1968, members of VMA(AW)-332 chalked up 10,000 accident-free flight hours. And they did it the hard way as they transitioned from the A-4 *Skyhawk* to the A-6A *Intruder* and went on two training deployments.

During the transition period, the squadron had a 75% change of both pilots and ground personnel.

Lieutenant Colonel R. R. Van Dalsen is commanding officer of the outfit.

VT-27 Claims a Safety Record 125,000 Accident-free Flight Hours

In a little over 3-1/2 years, VT-27 had accumulated, by January 20, 1969, 125,000 hours of accident-free flight. Ltjgs. David H. Young and William L. Shroyer logged the milestone hour.

Commander H. L. Piper commands the training squadron.



ARTHUR L. SCHOENI, former editor of *Naval Aviation News* and for the past 15 years *LTV's "Man with the Camera,"* has 154 magazine covers to his credit. No. 154 was the January 1969 cover of *NANews*. Reportedly, *Aviation Week* editors have used more photos by Schoeni than any other photographer; *NANews* makes the same statement. His remarkable pictures of aircraft, missiles and aircraft carriers have appeared widely in American magazines and in foreign publications, in some cases illustrating features Schoeni himself wrote.

Editor's Corner

Bat Men. In a December news letter, the Federal Aviation Administration writes, "A great deal has been written in recent years concerning the aircraft/bird collision hazard while the aircraft/bat hazard has been almost completely ignored. . . . [But] the FAA regularly picks up and tracks 'living clouds' of several million bats on its radar at San Antonio International Airport. The bats show up on the radar from one to three hours in the evening and morning when leaving and returning to their caves. [They] swirl out of their caves in ascending funnel-shaped clusters and can be tracked on radar until they disperse for feeding. The largest concentration of bats in the immediate San Antonio area is Bracken Cave, which lies just ten miles northwest of Randolph Air Force Base. . . ."

"An estimated 40 million bats roost at Bracken Cave from spring to fall each year, and their presence there has prompted the Air Force to call in Dr. Timothy Williams of the Wood's Hole (Mass.) Oceanographic Institution to study the problem. Simply getting rid of the bats does not appear to be feasible since they perform an invaluable service for farmers and ranchers by keeping their fields free of insects. During a single night's foray, Dr. Williams points out, the bats from Bracken Cave will devour 10 tons of insects. Everyone seems to agree that something should be done, however. The bats . . . are due back in the spring and, since they have the same biological inclinations as the birds and bees, there probably will be more of them."

ON THE HOOK. One day on the USS Lexington (CVT-16), the engine order telephone rang up, "All stop," and the 910-foot aircraft carrier went dead in the water as F-9 jets continued to roar across her flight deck. For

three hours, Lex launched and recovered aircraft in a situation carriers are rarely placed in — at anchor — as she conducted carquals for jet students from NAS Corpus Christi.

This was made possible by a combination of wind with gusts up to 28 knots and a flight deck steadied by anchors in spite of seven-foot swells in the Gulf of Mexico. Her engines kept her into the wind. Accordingly, Captain E. W. Gendron, C.O., said, "We could maintain the proper amount of wind over the deck without moving."

New Low. During the last winter in Antarctica, Plateau Station recorded a new low temperature which stands as a record for any U.S. station in the world — 123.1 degrees Fahrenheit below zero.

Plateau Station, over two miles high on the Antarctic polar plateau and resting on the surface of an ice cap one and a half miles thick, is the most remote and isolated American station anywhere on the face of the globe. Eight men — four Navy men from the U.S. Naval Support Force, Antarctica, and four scientists from the U.S. Antarctic Research Program — spent the long winter night there. Except for radio, they were completely isolated from contact with anyone from the outside for a nine-month period.

EVER WONDER what happened to prop makers? Hamilton Standard is observing its first 50 years this year. The firm's first half-century has been marked by diversification and growth. Where once it designed and built only one product — aircraft propellers — today it turns out scores of different products: Jet engine fuel controls, aircraft air-conditioners, turbine propellers, space life support systems, a variety of electronic and ground sup-

port equipment, electron beam welders, biomedical devices, boron filament for reinforcing composite structures, guidance and control, and digital data systems.

The Flying Bug. PRAN Michael A. Deneen, Jr., NAS Meridian, Miss., is building "a flying Volkswagen." Deneen undertook the project after reading a magazine article about a low-cost, home-built flying machine. Only 12 feet long with a wing span of 18 feet, it derives its power from a Volkswagen engine and purportedly will cruise at 80 mph with a maximum speed of 120. A seven-gallon fuel tank provides endurance. Takeoff run is 300 feet.

Deneen hopes that, with the help of the St. Louis Blow Pipe and Heater Company of Meridian, he will shortly complete construction. Although he started from scratch with absolutely no background in aviation, he expects to get approval of the machine as an experimental aircraft from the Federal Aviation Administration. When asked how he planned to fly his plane without a pilot's license, he said, "I'll take lessons after I finish building the craft."



INDIAN rope trick? Nope. Just lightweight metal slings with eyes on their ends. Two crewmen on Iwo Jima (LPH-2) hand them to an H-46 crew member from USS Niagara Falls (AFS-3) during a recent replenishment.

Where The Mod Look Began.



We've been making innovations in medicine, aerospace, oceanography, electronics and other fields for years. Fashion had to come.

Our traditional Navy garb has turned into the Fashion Sleeper of the century. We designed the Navy pea coat approximately 81 years ago. For good reasons like keeping 100-mile gale winds away from the man inside. (The bell-bottoms are designed to make it easy to get one's trousers off in case he should take an unexpected swim.)

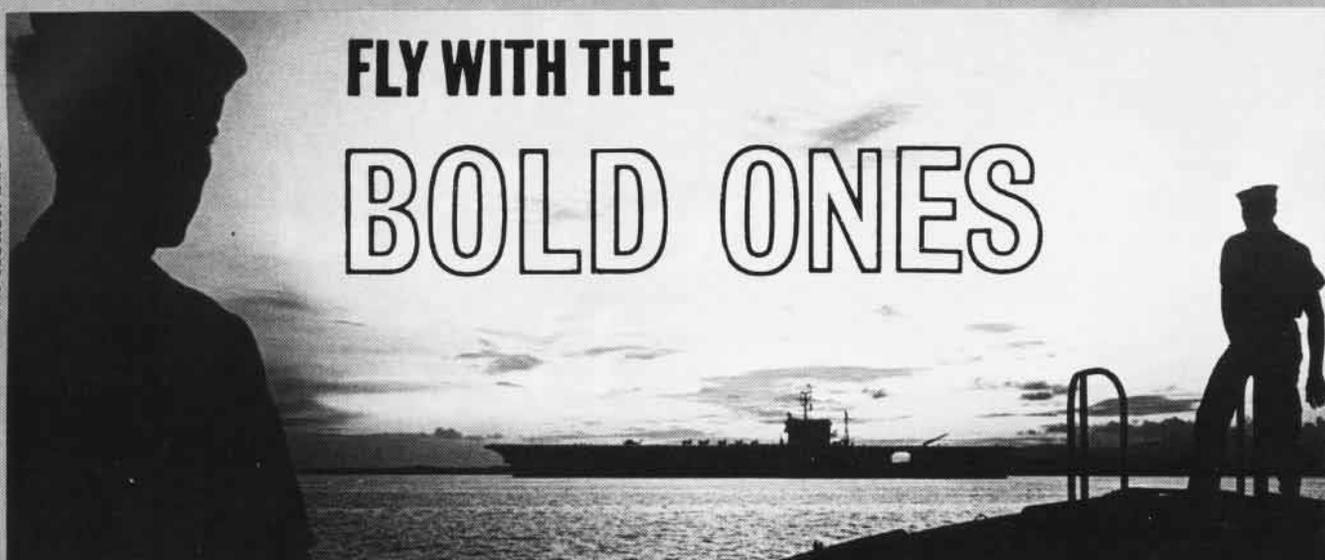
Now our styling is popular among teenagers, college students and socialites everywhere. For an equally good reason — it looks groovy. Which brings us to our proposition: We men who run the Navy can give you a first class education in almost every field you can think of. From Oceanography to Music. Right now, America has six million college students and 750,000 Navy men. (All the Navy men joined because they wanted to.) With what you learn as a Navy man, you might inspire some important changes of your own. Is all this worth a four-year investment on your part? *It's your country.*



U.S. NAVY
It's an education.

Fold this section back LAST

FLY WITH THE BOLD ONES



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POSTAGE AND FEES PAID
DEPARTMENT OF THE NAVY

NAVAL AVIATION PROGRAMS DIRECTOR, RECRUITING AIDS DIVISION

BUILDING 157-4
WASHINGTON, D. C. 20390

(After folding, staple or tape HERE)

I am interested in NAVAL AVIATION TRAINING. At present I am a member of the class of _____ and will graduate from _____
(year)

Name _____ Age _____

Street _____ Telephone _____

City _____ State _____ Zip Code _____

Fold this section back FIRST



Aerographer's Mate



Air Controlman



Aircrew Survival
Equipmentman



Aviation
Maintenance
Administrationman



Aviation Boatswain's Mate



Aviation Electrician's Mate



Aviation Fire Control
Technician



Tradesman



Aviation Electronics
Technician



Aviation Ordnanceman

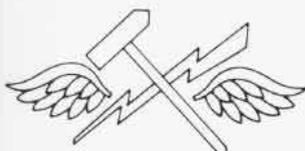
Aviation Rating Badges



Aviation Storekeeper



Aviation Structural Mechanic



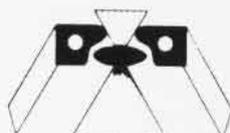
Aviation Support
Equipment Technician



Aviation
Machinist's Mate



Photographer's
Mate



Photographic
Intelligenceman



Aviation Antisubmarine
Warfare Operator





NAVAL AVIATION

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