Naval Aviation NEWS

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NAVAL AVIATION NEWS

FIFTY-FIFTH YEAR OF PUBLICATION

THE STAFF

COVERS—In the front cover photo, a pilot and instructor leave VT-4's flight line at Forrest Sherman Field. The back cover is a TH-57A SeaRanger of HT-8 over Pensacola Bay. PH1 Duane J. Richivine took the photo at left of a student pilot in a T-28 being launched from Lexington in the Gulf of Mexico.

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NAVAL AVIATION NEWS

1911 1973

New CinCPacFlt

WASHINGTON, D.C. — President Richard M. Nixon has nominated Admiral Maurice F. Weisner as Commander in Chief, U.S. Pacific Fleet, and Vice Admiral James L. Holloway III, Commander, Seventh Fleet, for appointment to the grade of admiral and reassignment as Vice Chief of Naval Operations to relieve Adm. Weisner in that billet.

Rear Admiral Daniel J. Murphy, Military Assistant to the Secretary of Defense, has been nominated for appointment to vice admiral and assignment as Commander, Sixth Fleet. He will relieve Vice Admiral Gerald E. Miller who will become Deputy Director, Joint Strategic Target Planning Staff, Offutt AFB, Neb.

MOCEM Training at Lakehurst

LAKEHURST, N.J. — Probably the most unique course of instruction at the Naval Air Technical Training Center is the MOCEM Class C Course of the Aerographer's Mate Schools.

MOCEM (pronounced mo-kum) stands for Meteorological and Oceanographic Equipment Maintenance Course and is designed to provide selected Navy and Marine Corps personnel with specialized training and technical knowledge required to operate and maintain meteorological and oceanographic equipment used by the Naval Weather Service Command and the Marine Corps Weather Service.

Students at MOCEM are all electronics technicians — quite rare at NATTC, among all the aviation ratings. The instructors are electronics and aviation electronics technicians.

During the 17-week course, students learn to align, calibrate and perform organizational-level maintenance on weather radar, television, microwave relays, VHF and UHF transmitters and receivers; repair and calibrate meteorological sensors, recorders and telemetry systems; and perform preventive maintenance on all meteorological and oceanographic systems.

Upon successful completion of the course, the graduate is designated a meteorological and oceanographic equipment maintenance technician.

Second Viking NPE

PATUXENT RIVER, Md. — Personnel from the Naval Air Test Center have completed the second of five Navy Preliminary Evaluations (NPEs) of the S-3A *Viking*. NPE II, held at the Lockheed Aircraft Corporation facility at Palmdale, Calif., included evaluation of flying qualities and airplane and engine performance as well as engine and systems characteristics.

This was the team's first look at the S-3A's automatic flight control system, including automatic power compensator and flight characteristics with external stores.

Planned test areas for NPE III will include evaluation of the avionics and weapons systems, the aircraft's deep stall characteristics, TF-34 engine, bomb bay door, MAD boom and refueling probe operation.

F-14 Missile Tests

POINT MUGU, Calif. — During a test over the Pacific Missile Range, the F-14 *Phoenix* weapons system tracked four separate jet drone targets, launched four missiles and guided them simultaneously to "hits" in the first four-missile firing ever attempted.

One of the missiles destroyed its target and the other three passed within their warheads' lethal zone and were officially scored as hits.

The firing was designed to test the multiple-launch capability of the AWG-9 weapons control system. The system is designed to launch and guide up to six *Phoenix* missiles against six separate targets simultaneously, enabling a small number of F-14s to engage a large number of attacking enemy aircraft or cruise missiles.

In the test, five radio-controlled targets (three converted T-33s and two BQM-34 drones) were vectored out over the Pacific Ocean at different altitudes and ranges. A Hughes Aircraft Company test pilot and a missile control operator in an F-14 located and established track on the targets with the AWG-9 radar, then ordered the system's computer to assess the threat and display launch priority for all five targets. The operator had the option of using the computer's selection or making his own choice of targets.

The targets were at ranges of about 30 miles and altitudes of 20,000 to 25,000 feet, considered moderate for the long-range *Phoenix* which has scored hits on drones 76 miles away and at altitudes above 80,000 feet.

Marines Looking for A Few Army WOs

WASHINGTON, D.C. — The Commandant of the Marine Corps has authorized enlistment of former U.S. Army warrant officer helicopter pilots into the Platoon Leaders Class (Aviation) and Aviation Officer Candidate programs. Candidates for the PLC program must be full-time students at an accredited college; seniors or graduates may enroll in the aviation officer candidate program. Personnel who have completed two years (60 semester hours) of transferable credits will be considered for the aviation officer candidate (scholarship) program.

An aviation assignment is given on successful completion of precommissioning training and the basic school. Progress through flight school and selection for fixed-wing or helicopter training depend on individual achievement at the Naval Air Training Command, Pensacola, Fla.

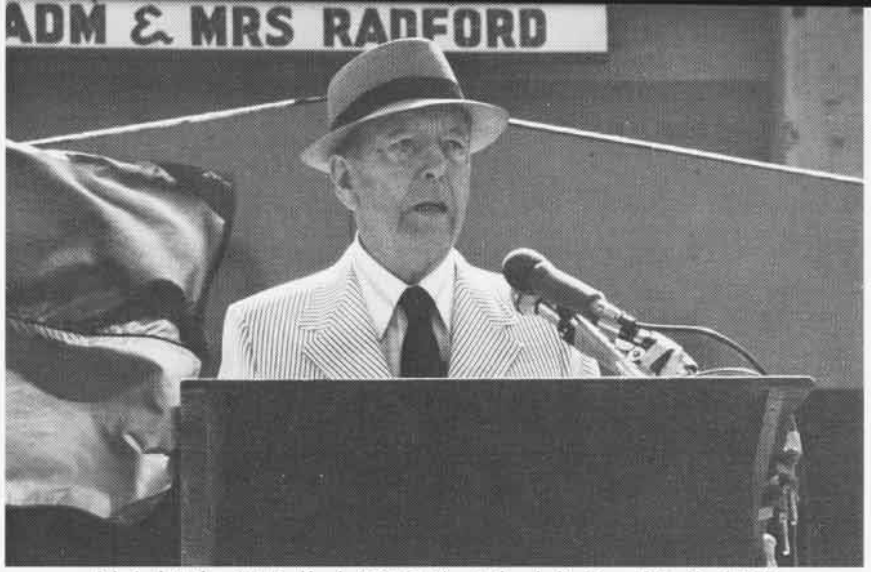
Information can be obtained from Marine Corps Officer Selection Officers in major cities or from the Commandant of the Marine Corps (Code DPC), Headquarters, U.S. Marine Corps, Washington, D.C. 20380.

Navy Crews Search for Missing Aircraft

LAJES FIELD, Azores — A Navy P-3 *Orion* crew of VP-45 responded to an emergency call January 6 from two civilian single-engine, crop-duster planes in trouble while on a flight from Newfoundland to the island of Santa Maria, Azores. The *Pelicans* located one of the planes and escorted it to the safety of Lajes Field.

Navy P-3 and Air Force HC-130 crews searched for the second crop-duster for another two days before the search was terminated because of bad weather in the search area, 200 miles off Terceria Island, Azores. Floating debris was found during the search but it could not be determined if it was part of the missing aircraft.

High winds and seas hampered search efforts throughout the three-day period, and the missing pilot's chances of having survived in such weather are considered extremely poor.



Admiral Arthur W. Radford, USN (Ret.), at the dedication of Radford Field.

Cubi Point Field is Named for Adm. Radford

CUBI POINT, R.P. — The airfield at NAS Cubi Point was officially dedicated December 21 to the man whose persistence against strong opposition made the naval air station a reality. The airfield was named Admiral Arthur W. Radford Field in honor of the former Chief of Naval Operations and Chairman of the Joint Chiefs of Staff.

In remarks during the dedication ceremony, Adm. Radford said, "I'm sure you can all imagine that this is quite an occasion for me. As I received the gun salute this morning, I remembered the first salute I received here in 1951. I came here to find out how the Seabees were getting along and they greeted me with dynamite explosions that took place all the way up the hill as they rooted out tree stumps. I'm not sure if the number was correct, but the effect was the same."

In 1950, Adm. Radford, then CinCPacFlt, strongly pressed for the establishment of a naval air station in the Far East. He strove — from conception through construction and inauguration — at all levels of command, from Subic Bay to the Pentagon, to make this vital link in the defense posture of Southeast Asia a reality.

The job of building the base was offered to private construction companies. Private contractors, however, were unwilling to bid on the project because of the tremendous amount of earthmoving required to build the base and the difficulties of supplying a vast work force in the jungle. They termed the task impossible. Thus, the admiral's proposed base became known as "Radford's Folly."

An appeal to assign the tremendous task to the Seabees, then on the verge of demobilization, was granted. This began what was to go down in history as one of the largest construction projects ever undertaken by a construction battalion.

Adm. Radford landed the first aircraft — a single-engine training plane — on a rough strip of runway at Cubi on May 10, 1952.

When the air station was ready for commissioning in 1956, the Seabees had moved 20 million cubic yards of earth, filled sections of Subic Bay up to 98 feet deep, moved a small fishing village and its cemetery to a nearby town, laid 36,000 tons of asphalt and concrete, cut 15.3 miles of road through thickly wooded hills, poured seven million square feet of concrete for the 8,000-foot runway, and built two water reservoirs, an aircraft carrier pier, bridges and utility systems. They had cut mahogany trees for lumber, quarried their own rock for subgrade and fill, pumped up coral from the ocean to be used on the airstrip, and built their own asphalt mixing plant.

"In the immediate years after Cubi Point was completed, it did seem to be a folly," said the admiral in concluding his remarks. "I sat back and said nothing because I was sure that someday we would need it."

GRAMPAW PETTIBONE

Hit a Rock

Following an extensive one and one-half hour brief, two lieutenants (instructor and student) manned a TA-4J *Skyhawk* for a day instrument training flight. The crew encountered nothing unusual during preflight, start, taxi and launch. Departure was normal and they arrived at the designated training area which was over mountainous terrain. Once in the area, no further communications were heard.

Approximately forty-five minutes after departure, two forest rangers saw a Navy jet in the dirty configuration, flying straight-and-level up a valley. They watched it for about ten seconds until it passed out of view. The sound of the engine suddenly stopped. They heard no explosion. About the same time, a forest fire lookout spotted smoke and reported a possible forest fire. It turned out to be the crash site of the *Skyhawk*, located at the 8,000-foot level, below the ridge of a mountain. Evidence at the site indicated that the aircraft had been flying level. The port wing had struck a tree moments before it hit the ridge. It appeared, however, that given the plane's attitude, altitude and configuration, there would have been no way for it to clear the ridge or turn out of the valley. Both pilots were fatally injured.

Careful investigation of the aircraft escape systems revealed that a last minute ejection had been attempted, but time and distance precluded a successful completion of sequence prior to impact. Additionally, even though an exact, clear-cut cause factor could not be determined, the most probable cause was the pilot instructor failing to maintain a lookout for his hooded student.

Grampaw Pettibone says:

Sufferin' succotash! About the time everyone figures we have seen the last of this type of accident, another flyin' machine runs into the "rocks" at altitude. The answer or preventive cure is so obvious it leaps up and bites you in the butt every time — when you got a fella under the bag, you gotta maintain an eagle eye — ALWAYS!

I gotta compliment the fellas who investigated this tragedy, cause they looked at every aspect — a very thorough job. However, when it was all over, the finger of suspicion pointed at misuse of the old MK-8 eyeball — one of the most reliable "instruments" in the aircraft. Nuff said!

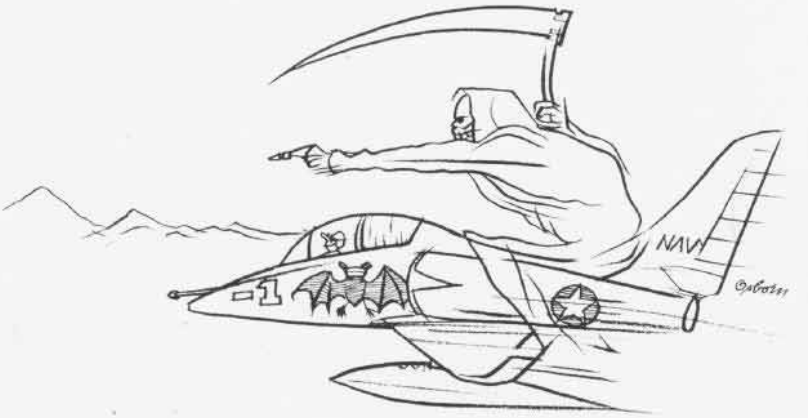
Mow the Man Down

It was evening after secure and the duty section had just completed normal secure activities. The line supervisor asked maintenance control if any aircraft movements were anticipated. Maintenance control indicated there was nothing more at that time and that he could shove off.

Prior to this, at 1600, the line supervisor had instructed the line watch, consisting of two airmen, not to move any aircraft without contacting him. He knew that these two individuals were not qualified but that fully qualified personnel were reporting for night check duty at 2000.

The maintenance control duty CPO was relieved by the 1800-to-secure duty CPO and did not know that the line supervisor had been secured. At approximately 1830, the on-coming maintenance control duty CPO told the line watch to move an A-3 from the hangar to the line. Hours earlier, the two line-watch personnel had participated in two movements of this same aircraft when a team of four men and five men, respectively, completed the moves safely. Knowing this, they attempted to contact additional men for this movement.

After waiting a short time, they decided to disregard the line supervisor's previous instructions, believing they could handle the move themselves, and proceeded to carry out the CPO's



ILLUSTRATED BY Osborn

orders. Prior to the abortive move, one of the airmen briefed the other on how to ride the aircraft brakes. During the move, one AN was on the tractor while the other was on foot, directing the movement of the aircraft out of the hangar.

Once the aircraft was clear of the hangar, the man on foot was going to ride the brakes to the line. As the aircraft was pushed out of the hangar onto the slightly downward sloping ramp, it separated from the tractor and accelerated uncontrollably. The driver stopped the tractor; both individuals attempted to stop the aircraft by placing chocks under the starboard main wheel.

One of the ANs lost his balance and fell in such a manner as to place his right leg in the path of the starboard main mount. It is estimated that at least part of the aircraft wheel rolled over his right foot and lower leg. The other AN endeavored to push the man away from the rolling main mount and most likely succeeded in saving him from additional injuries.

The aircraft continued to roll until the lower aft fuselage came to rest on top of a small power cart, causing minor damage to the aircraft. The airman was not as fortunate, having numerous fractures of his right leg.

Grampaw Pettibone says:

Leapin' lizards! These young lads just don't understand English! Appears to me the line supervisor made it very clear — don't move an aircraft without contacting me! Clear enough. However, these two young lads are not alone in taking "the blame"! Those two CPOs who relieved each other at 1800 did not properly brief each other. Had the relieving CPO known that his line supervisor had been secured — that would'a made a difference! Seems to me the C.O. has a number of "heads" that could be banged together in this fiasco.

Dear Gramps:

Byrd Camp is an isolated site on the Antarctic Continent located 800 nautical miles northwest (grid) of the major U.S. base at McMurdo. During the early part of each *Deep Freeze* season, camps such as Byrd are opened and supported by ski-equipped LC-130 *Hercules* of VXE-6 throughout the season.

On takeoff from Byrd Camp during an early season resupply mission in mid-October, an aircraft's inertial navigation system failed. This was no real problem, since polar-qualified navigators are trained to navigate by other means. However, upon entering an overcast, the N-1 compass system failed. The compass card began to rotate and attempts to stabilize it were unsuccessful. Being above the overcast, a return to Byrd Camp was not advisable as there are no approach aids, radios, fuel, or adequate shelter available there. Ahead some 800 miles, was McMurdo. There were no en route navigation aids in between and no visual references on the never ending snow below.

The challenge would task even the most experienced of polar navigators. LCdr. Joe Wiebelhaus immediately realized the major problem of no heading reference. The magnetic compass, constantly moving, was of little use since variation changed 75 degrees during the trip and the unstabilized radar indicated relative bearings only. The only way to determine aircraft heading was to continually check the sun's azimuth.

So, for three hours, LCdr. Wiebelhaus computed and observed celestial data on the sun, thus determining the aircraft's heading once every three minutes. The pilots of the aircraft maintained heading by attitude gyro alone, with corrections made between sun shots. During the ensuing three hours the aircraft's position never deviated more than 20 miles off the desired track. The few fixes obtained en route were a result of his past knowledge of certain peculiar radar returns from snow and ice crevasses along the route of flight. A McMurdo TACAN lock-on 40 miles out provided the final assurance of his navigation. The landing was uneventful.

Grampaw Pettibone says:

Shades of Prince Henry the Navigator! Prince Henry, Magellan and Balboa had nothing on this lad — well done, LCdr. Wiebelhaus!

Only a few will fly it...

because only a few will be trained to.

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It's the Navy's newest fighter, the F-14 Tomcat, and the only thing as good as this cat is another one just like it. And like the men who fly it. The pilot and missile control officer who will fill its seats are few in number and high in quality. They will have to be the best to fly the best.

In Naval Aviation, training makes the difference. Whether they are rocketing along at twice the speed of sound or slowly orbiting above the ocean's surface while tracking a subsurface target, the men of Naval Aviation share one special thing in common — they are the best at what they do because they have received the best training available in the field of aviation.

They needed it. They weren't born with the ability to operate expensive aircraft. They started off just like you: wondering where to go, what to do; with a lot of choices, questions and decisions. And they made it.

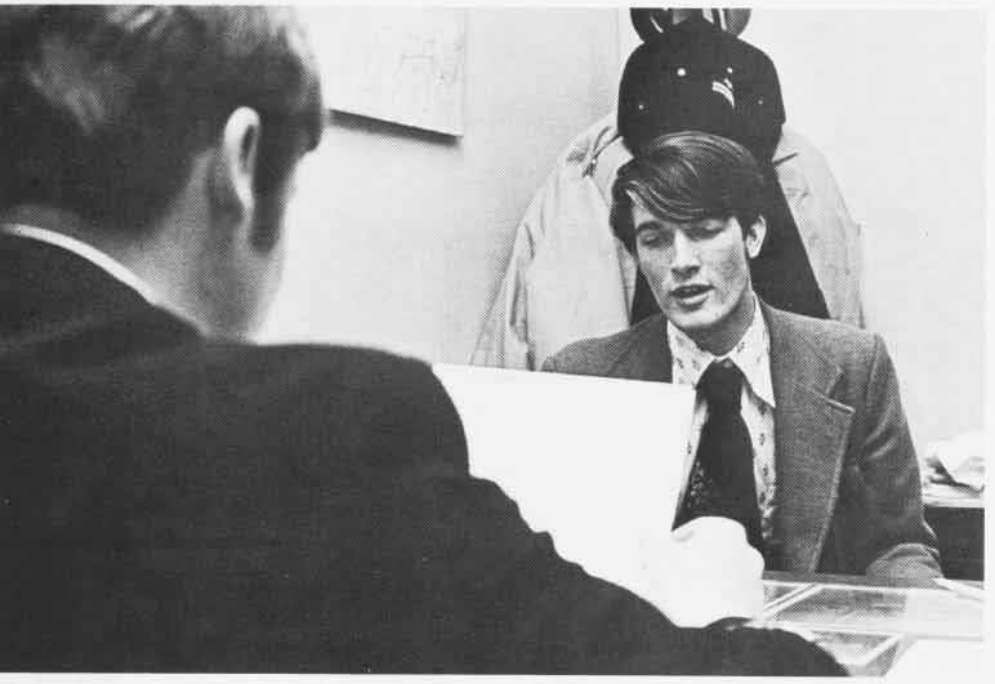
If you are interested in an aviation career, check out Naval Aviation and find out why it's the best in the field. If you are going to be something, earn the gold wings of a Naval Aviator or Naval Flight Officer and be something SPECIAL.

Please send me more information about Naval Aviation.

NAME _____ AGE _____

ADDRESS _____ CITY AND STATE _____ ZIP _____

QUESTIONS



It's easy to be dazzled by the glamour of Naval Aviation. The reasons have wings, the planes and the men. And it's just as easy to be overawed by it all. Those men in the cockpits of all those aircraft that you have admired were not born with gold wings and the special talents that allow them to fly. They started out much the same as you: four years of college, wondering what to do, with an urge to do something different upon graduation and, perhaps, for the rest of their lives.

By Lt. Skip Miner and Lt. Bob Holt
Recruiting Support Department

Photos by PH1 Kennerly G. Brown

Student: What are my chances of getting accepted in an aviation program? How hard is it to get in?

Lt. Holt: Acceptance into the pilot or flight officer programs is highly competitive, primarily because of the numerous rigid steps for qualification. First you must qualify on the written tests. At least one-third of our applicants do not pass the examination for the program they are interested in. And when successful examinees take their physicals, other problems frequently occur with blood pressure, eyesight, depth perception, and asthma or hay fever.

Possession of a baccalaureate degree is another basic requirement (or evidence that a degree is anticipated, if you are still in school). The maximum age at time of reporting is 26½ for pilot applicants. This is not waiverable. Naval Flight Officer candidates can be no older than 27½ at time of appointment but a waiver can be obtained — to 30½ for up to 36 months' prior active military service. To give you a rough figure, about 50 percent of the applicants who take the test — with the intention of applying — will ultimately go to Naval Air Station, Pensacola, Fla., for training.

What's the test like? How much math is there?

The test takes about three and one-half hours and consists of four parts: academic qualification, mechanical comprehension, spacial apperception and biographical inventory. The only math is in the 60-minute academic qualification test and is largely mathematical reasoning. A brushup on basic trigonometry and algebra should suffice. The math is only a small part of the test and is seldom the difference between qualifying and not qualifying. More important is the ability to exhibit practical reasoning skills and the possession of above average verbal reasoning skills. The mechanical comprehension test requires no preparation. Spacial apperception is a short test of your ability to formulate a three-dimensional view of flying in a two-dimensional medium. The biographical inventory attempts to discover which of the traits common to successful flight students you possess.

If you don't have to be a math major to qualify, what about the academic training in Pensacola?

I think you'd be surprised at how few Naval Aviators and Naval Flight Officers are math or engineering majors. Although those proficient in math generally have less trouble with the technical courses, all that is really required of any student aviator is self-determination and the desire to succeed. Sure, the liberal arts major will usually have to work harder at the aerodynamics and other technical courses, especially if he is in Naval Flight Officer basic training; but the courses are taught for the laymen, the non-engineering majors who comprise the majority of the students. In short, if you are selected, you are capable of completing the training. Most academic attrition results from a variety of motivational reasons in which the student fails to apply himself properly rather than from any inability to grasp the material. If you found the academic workload in college a real chal-

How did they begin? Where did they start? Whom did they see?

They most likely began where a senior from St. John's College in Annapolis, Md., recently started: in the office of a Navy Recruiter. In his case the office was in the Navy Recruiting District in Washington, D.C., and the officer was Lt. Bob Holt, Naval Flight Officer and Navy Recruiter. He, like his counterparts across the country, anticipated the student's first question because it is invariably asked at some point in the interview.

and ANSWERS

lenge, you will have to work harder than other students, and vice versa.

What's the overall completion rate in aviation training?

It is about the same for both the pilot and flight officer programs — about 60 percent of the students who report to Pensacola will earn their wings 12 to 18 months later.

I've heard a lot about Aviation OCS. What's it really like?

It's intentionally very difficult. The two primary goals of the program are to administer a basic indoctrination into military life and to prepare you mentally and physically for the rigorous training schedule that follows. Academic, psychological and physical training pressures are applied immediately and do not let up during the 11½ weeks of AOC training.

The initial week, called indoctrination week, is especially rigorous. It is a "shock treatment" during which seemingly impossible tasks are assigned the newly arrived candidate. Part of the process of learning how to lead involves learning how to follow. Your true motivation is tested here also. If you can't make it through the seven days, then your desire to be in Naval Aviation is questionable. A process of mental training begins here with seemingly meaningless memorization that will, in fact, become an important part of later training. The best way to approach the indoctrination phase is with a positive and aggressive attitude. Those who start out strong generally continue at an above average pace during the remainder of their training. And you'll also be surprised at how much you will learn about yourself.

What happens if I wash out; do I still have an obligation to the Navy?

That will depend largely on your own desires, the stage of training from which you were disenrolled and the reasons for your failure. The large majority of attritions from pre-commissioning stage (candidate school) are discharged from the Navy. Requests for enlisted programs and other officer candidate programs are considered on an individual case basis, but retention in the Navy is unlikely, unless, of course, you are obligated by a previous enlisted contract. The exception to this is a medical disqualification at AOCS. The candidate in this category is given every opportunity to enroll in some program for which he's otherwise fully qualified, consistent with the needs of the service. If you are dropped from training after commissioning, the reason for the failure will become paramount in determining your future status, but bear in mind that you have been trained in a specialty for which there really isn't any call in the rest of the Navy. Very few officers dropped from aviation training are retained on active or inactive duty. Lucky is the ensign who has some other specialty for which the Navy has some particular need at the time of his disenrollment. Here again the officer who is medically disqualified is the exception; needs of the Navy become the factors in his retention, but a special effort is made to keep those highly motivated toward a Navy career. We are constantly streamlining our officer

'What are my chances of getting accepted into an aviation program?'

corps in this day of the all volunteer force concept and we recruit for a specific job only.

How about pay?

Your pay as an aviation officer is surprisingly competitive with civilian industry. An ensign, married and drawing flight pay and the other allowances, which all officers get, earns over $10,500 his first year. But the additional benefits unique to the military are what add to the value of the officer's salary: free unlimited medical care for him and his family, free dental care for the officer, a $15,000 life insurance policy for only $3.00 per month, and exchange and commissary privileges. Only your base and flight pay are taxable, about 75 percent of your total gross earnings. Promotions and longevity increases are virtually assured throughout the junior aviation officer's first tour of duty and, after five years of service, the aviation lieutenant earns about $17,000. There are significant intangibles, too, such as prestige and credit potential unique to the military officer.

My fiancee wants to know what organizations exist for students' wives?

This is one of the things that many wives like about the Navy. The Officers Wives Club is an active organization at Pensacola and its members do a great deal to involve students' wives. They help them orient to Navy life: showing them how the base is set up; where the commissary, dispensary and exchange are; where to find off-base housing; how to get in touch with a baby-sitting service; or how the base nursery is run. They also correspond with the wives of students who do not join their husbands right away, acquainting them with the program. The club also gets involved in many of the social functions on base. It is really a very helpful organization and most of the people I have talked to enjoy it very much. It is the best way to get to meet the wives of other students. But I don't mean to infer that membership is mandatory, because it certainly is not. I personally think that your wife would miss a lot of the fun of the social life if she didn't join.

Do I get a chance to choose which type of aircraft I want to fly?

There are several opportunities to choose, but it comes down to two basic criteria: What are your grades? What does the Navy need right now? The first opportunity you get is at the completion of training at VT-1 which is the end of the primary phase. At this juncture, your combined grade — flight and ground training — is the primary factor in determining which pipeline you will follow. Naturally, the top students in the class get their choice. Surprisingly, not all choose jets. Many ask for the prop pipeline, for various reasons, although most of the students I knew that chose props did so because they wanted to fly heavy multi-engine aircraft. Also, until just recently, the best way to get involved in the antisubmarine warfare program was through the prop pipeline. Those that want fighter and attack aircraft ask for the jet pipeline.

The props are divided again after they leave VT-5, the carrier qualification squadron for prop aircraft. At this point, the student gets another choice between fixed wing, multi-engine aircraft or helicopters. Again, the top of the class gets first choice.

From VT-5 you can go either to Corpus Christi, Texas, to one of the three multi-engine training squadrons or to Helicopter Training Squadron 18 at Ellyson Field in Pensacola. There are a few rare instances where you can ask for, and possibly get, jets from VT-5. But, as I said, this is very rare. The same is true for getting multi-engine from VT-4, which is the jet carrier qualification squadron.

I've heard a great deal about landing on a carrier and it looks pretty dangerous. I would like to know about this phase of training since it is unique to the Navy. I understand that the first time is solo.

I can understand your concern about carrier qualification because it *is* different but there are some key things you should know about it. First, you will never be asked to land on a carrier if you aren't ready and, I might add, that goes for every phase of your training. By the time you find yourself about to "hit the boat," you will be prepared. You get several instructional hops with an instructor in the back seat and you fly the same pattern over an outlying airfield that you will fly when landing on *Lexington*. Once the instructor is satisfied that you get the picture, then you fly a number of solo flights at an outlying field. Called field carrier landing practice or FCLPs, they are flown at Barin Field if you are in props at VT-5 or at Bronson Field if you are in jets at VT-4.

On these solo flights, you will fly with the aid of a lens or mirror system — just as you would at the ship — and your instructor is the landing signal officer or LSO. He monitors every landing you make and advises you while you are flying. Then, at the completion of each flight, he goes over your good and bad points with you. Once you have completed the required number of hops and the LSO thinks you are ready, then you hit the boat. The one thing you have to remember is that if you listen to your LSO religiously and do what he says, you won't have any trouble on *Lex*.

I won't tell you that your heart won't be in your mouth the entire time at the boat, because it will, but believe me, you will love it.

That is the completion of your basic phase and it's quite a feeling. I have not talked to a single Navy pilot, no matter what plane he flew, that didn't feel like he owned the airplane after carrier qualification. Hitting the boat is the mark of distinction for Naval Aviators. It separates us from the other services and, to my mind, it is the one thing that gives us a slight edge over other pilots. Students who complete that phase generally go on to get their wings.

What are my chances of getting my choice of aircraft?

The Navy tries to give you your first choice, but it can't be done for everyone for obvious reasons. Selections are made from what is available based on your class standing. For the pilot program, you have a chance to choose just about everything in the Navy's inventory, depending upon which pipeline you have followed. All of them provide a challenge and your experienced instructors will give you valuable inputs during the course of your instruction. Your official request will be made some time during the advanced training phase.

If you are selected for the NFO program, aircraft pipeline assignments are made toward the end of the course of instruction at VT-10, which follows AOCS. Simple availability will determine the composition of the field to select from, while relative class standing determines who chooses first and who takes what remains. Class standing is a composite of academic and flight grades at VT-10, with a smaller input consisting of the overall grade you attained in AOCS. Here is the reason for aggressiveness and hard work during the AOCS phase! There are some limited input pipeline assignments, such as the RA-5C *Vigilante* program, which carry a minimum academic cutoff point for eligibility, and certain high performance carrier-based jet pipelines which require vision (uncorrected) of 20/70 or better, but these are the exception rather than the rule. It can generally be said that the students in the upper half of a class at VT-10 should get their first or second choices of duty and the lower half will not fare as well, having a smaller field to choose from.

Recruiting literature which could adequately describe the ten or more distinct pipelines available to today's NFO student would be too voluminous and complicated for economical distribution. Besides, the programs are constantly being upgraded and streamlined, peppered with the increasingly frequent arrival in the fleet of new aircraft and aircraft models. Associated training programs are proving to be a challenge to both instructor and student. For example, since I came into the NFO program five years ago, I have seen four major new aircraft or aircraft models, each with its own special challenge for the NFO — the man on whom the aircraft's mission depends. They are the P-3C, S-3A, F-14A and EA-6B. There is even talk of an antisubmarine warfare helicopter equipped with a trained NFO in its normal crew complement. By the time you earn your wings, there could be an entirely new aircraft available to you.

The programs sound so varied and complicated, how would I even know enough about the various aircraft to make a sensible selection?

Good question, especially since there is a limited amount of definitive literature in print. First, during AOCS you'll have a course that gives you the "big picture" in the aviation Navy. It will outline the major subdivisions by mission, type of aircraft, number and location of squadrons, etc. In short, how everything fits in the tightly interwoven finished product. Then, when you get to VT-10, you'll be exposed to instructors recently returned from all of the different pipelines. In one-hour lectures — complete with slides, films, extraordinary hand gestures and impossible sea stories—each will provide you, the student, with a complete and detailed rundown on the mission, training, size of squadrons and typical deployment schedules of a particular aircraft. You'll begin to see the pride and professionalism that today's experienced NFOs all share. You'll start to get a feel for what you think you would want and, as selection time approaches, you will generally know how many billets in each area will be allocated to your class. There is a wealth of experience from a broad cross section of the NFO community in the instructor staff at VT-10. Each unit is ready to help you make the right choice of available assignments. Of course, there are pilots instructing at VT-10 from many different aircraft, and they round out the total learning experience by providing some insight into how the professional pilot/NFO team works to accomplish its mission.

I've heard that NFOs are second-class citizens. How are you treated by the pilots and can you advance as rapidly up the promotion ladder?

Absolutely untrue today. A pilot/NFO comparison isn't even applicable anymore since their jobs (except in the aircraft) are completely interchangeable. Other than landing signal officer, there are virtually no billets within a squadron, or non-squadron sea or shore duty assignments, which

'Acceptance is highly competitive; about 50 percent of the applicants who take the test go to Pensacola for training.'

'What are my chances of getting my choice of aircraft?'

cannot be filled by pilots *or* NFOs. Within the operating squadron in most pipelines, you might be surprised to find that the NFO must know *everything* the pilot knows about flying the aircraft and about its systems; and the pilot must be thoroughly familiar with his NFO's equipment and its proper operation. Commensurate with this need for a 100-percent team effort, the corresponding effort and increased responsibility on the shoulders of the NFO is the recent enactment of legislation allowing the Naval Flight Officer to compete for major command at sea and ashore. Although only a few years old, this opportunity has already been seized by some two dozen NFOs, selected for, or already enjoying, the responsibility of squadron command.

Will I have an opportunity to learn other duties besides flying?

I think one of the things you will find most rewarding in the Navy is that you don't have to wait to be given an important job. You are given a lot of responsibility from the outset and, in turn, a great deal is expected of you. Besides flying, you will be given important ground jobs. You may find yourself in charge of a million-dollar project or a division of 125 men in addition to your regular flying duties. The opportunities are there.

Would you sum up the requirements for each program for me?

Certainly. The AOC program is for pilot training. For that you have to have 20/20 vision, normal depth and color perception and general good health. Academically, you have to successfully complete the tests we administer here and have a baccalaureate degree or be enrolled in a course of study leading to a degree that will be completed before you arrive at Pensacola. The age requirement is no younger than 19 and no older than 26½ when you begin active duty. The requirements for NFO and Air Intelligence Officer are the same except for the age and eye requirements.

For Air Intelligence, you can have less than 20/20 if it is correctable to 20/20 with glasses. Also the age requirement is 27½ years of age at the time of appointment but this can be waived up to age 30½, for up to 36 months of prior active military service. There is no waiver for the pilot program.

For the NFO program, the eye requirement is vision no worse than 20/200, correctable to 20/20 with glasses. The age requirements are the same as in the AI program.

Finally, there is the Aviation Reserve Officer Candidate (AVROC) program which is designed for students still in college. It combines potential pilot and flight officer candidates. To enter this program, you must have completed 30 semester hours of college or 45 quarter hours, be at least 19 years of age and pursuing a degree. The eye requirements are also slightly different for a potential NFO. In this program, you must have 20/40 vision or better, and correctable to 20/20. The pilot eye requirements are the same as for the AOC program. The only real difference between this program and the others it that you split your aviation officer candidate class into two eight-week tours at Pensacola. The first would be eight weeks during the summer of your junior and senior years and the second eight weeks would follow graduation from college.

That concluded the interview session. The student had some points to ponder, decisions to make.

You may be in the same position, with some unanswered questions as well. If so, your Navy Recruiting Officer is in the phone book. He was in the same position once himself, with the same type of question, and is available now to help you with any question you may have regarding a career in Naval Aviation.

'The Navy tries to give you your first choice, but it can't be done for everyone for obvious reasons.'

In Pursuit of Wings

...a look at the Naval Air Training Command

By LCdr. Paul N. Mullane

While assigned to the Naval Aviation Schools Command, a variety of activities dominate the student's time. Subjects range from world affairs to practical demonstrations of seamanship.

For all who aspire to wear Navy wings, the path begins at NAS Pensacola, Fla. There, next to Pensacola Bay where Ellyson, Towers, Mustin and Chevalier, the early pioneers, set up their "aviation camp" in 1914 on the site of a former Navy yard of the wooden hull and sail era, Naval Aviators and Naval Flight Officers are trained to operate subsonic and supersonic aircraft. Since those early days, thousands of young men have trained and joined the air arm of the fleet. Naval Aviators who learned to fly in this cradle of Naval Aviation went forth to fly antisubmarine patrols in Europe and along the U.S. Atlantic coast in WW I.

Between the wars, those who would become the carrier and squadron commanders of WW II were trained at Pensacola. With the approach of WW II and during that war, tens of thousands of pilots passed through the complex of airfields that grew around Pensacola to fulfill the vastly expanded needs of Naval Aviation. From there they went to advanced training bases throughout the country and then on to duties of flying patrols in search of U-boats, flying from the pitching decks of aircraft carriers large and small, being catapulted from the decks of cruisers or sometimes from island strips hacked from tropical jungles.

The Naval Air Training Command has continued to provide the manpower for Naval Aviation into the jet age and through changing international situations from cold war to Vietnam.

As aviation technology and the needs of Naval Aviation have changed, so has the training program. Gone are the float planes and flying boats which once rippled the waters off Pensacola and Corpus Christi, gone the way of biplanes and blimps. Now, in the age of supersonic jet aircraft and complex electronic equipment, new programs have been instituted to meet new requirements. The specialized duties of the TACCO, RIO and navigator have led to the designation of Naval Flight Officers who share with Naval Aviators the responsibilities of performing the mission of Naval Aviation.

The prospective NFO and Naval Aviator begin their aviation careers together at the Naval Aviation Schools Command at NAS Pensacola. There, both acquire the basic academic knowledge which lays the groundwork for specialized training. Future NFOs and pilots arrive in one of two categories: as already commissioned officers who require only the aviation and environmental training provided by the schools command, or as officer candi-

Important parts of preflight preparation include physical training aimed at building stamina and confidence and learning the survival techniques for use in both land and sea environments. In the low pressure chamber, left, students expe-rience the effects of high altitude and learn to use life support equipment.

dates who, in addition, receive training to prepare them for commissioning as naval officers. To assist the latter group, an opportunity is soon provided to meet that renowned shaper of young men, the Marine drill instructor. This rare species is found in only four habitats in the U.S. — Parris Island and San Diego Marine boot camps, Marine OCS at Quantico and the Aviation Officer Candidate department of the Naval Aviation Schools Command. The candidate may be assured that the D.I. will take a marked interest in guiding him along the correct path to proper military bearing and attitude.

While the commissioned officer reporting to aviation training is authorized all the prerogatives of his rank, the AOCs who make up approximately half those entering the training program are somewhat more restricted in their activities. An AOC is paid the same as an E-5 and authorized all dependent privileges; however, his liberty time is restricted during the first four weeks, until he achieves "secured" status. This brings an increase in on-base liberty and some off-base liberty. Restrictions are necessary because of the heavy academic load, required study periods, military drill and physical fitness sessions. During the four-week period, after 0500 reveille and a P.T. period beginning at 0505, AOCs are marched to their destinations by D.I.'s or advanced AOC officers. After eight weeks, AOC classes march to class on their own and enjoy increased off-base liberty.

AOC training averages 16 weeks, eleven in classroom and five in the initial flying phase. Specific lectures range from minority affairs and basic ship construction to Marxist theory and fleet organization. In between are discussions of military protocol, officer selection boards, junior officer duties, POW experiences, air wing organization, ASW and seagoing rules of the road, among many others.

The Naval Aviation Schools Command has a twofold mission: preparing the officer candidate for commissioned status, mentally and physically, while instilling the highest ideals of duty, honor and loyalty; and providing indoctrination and aviation academic training. The AOC receives instruction in naval history, naval justice, leadership, naval orientation and basic seamanship, along with military and physical training. This is followed by two weeks of instruction in the environmental indoctrination school dealing with basic aerodynamics, engineering and flight physiology.

The commissioned student begins his training with this phase and also

Pleasant mess facilities and a variety of outdoor recreation provide a relaxed environment where pressures of training may be escaped. The commissioning of Aviation Officer Candidate, bottom, brings officer status and privileges after completion of preflight training.

receives swimming and physical conditioning training similar to that given AOCs. Officer students normally come from the Naval Academy, NROTC and OCS, and from the officer ranks of the Marine Corps, Coast Guard and Allied nations.

On completion of this phase, AOCs and student officers proceed to survival training which includes classroom and field work for both land and sea survival. They are taught how to escape from a downed aircraft, how to construct a shelter and how to procure food.

With this training successfully completed, students are sent to Training Squadron One (VT-1) for initial training as Naval Aviators or NFOs. After five weeks of flight operations, AOCs return to the schools command for commissioning before continuing with primary flight training. From this point on, all students are commissioned officers.

Before following the student further along his training cycle, it should be mentioned that he is not the only one to receive instruction at the schools command. An Aviation Instructor Training School is a part of this establishment and is dedicated to providing instructors who are equipped to meet student needs. Two training courses are available for this purpose: a two-week flight instructor and a four-week academic instructor course. Among the subjects treated are oral communications (the "screamers" are a thing of the past) and educational psychology.

Dependents are not overlooked either. Since the sponsors' time at the schools command often provides the initial exposure to the Navy for most wives, an extensive program has been established for their benefit. This includes a tour of base facilities and a series of lectures about medical and legal benefits, naval history, military etiquette and general naval subjects. Wives' clubs and a schools command wives' ombudsman program also aid wives of AOCs and student officers to cope with any problems presented by Navy life.

Upon completion of the academic phase at the schools command, the future Naval Aviators and NFOs begin primary flight training with VT-1 at nearby NAS Saufley Field. VT-1

has the distinction of being the only training squadron in the Naval Air Training Command that provides training for every potential pilot and Naval Flight Officer. The two receive different training, however. Student pilots enter a six-week flight syllabus which programs them to spend half of each day at ground school and half at the squadron. Ground school is conducted by the air station, employing the "modular concept" or "programmed learning," as it is alternately termed. This approach to a student's studies is designed to allow him to study at his own rate, using programmed texts and reducing classroom work to a minimum. Instructors are available to provide guidance and assistance. Using the programmed text, a student studies a specified block of knowledge and then is tested to determine what portion, if any, he must review. The material studied is complementary to individual flights for which the student is scheduled. Subjects include aerodynamics, engineering and similar areas taught during the environmental phase at the schools command and continued in greater detail to meet specific needs. Students have indicated that these studies are generally more rigorous than their work at college. The study procedures are also designed to teach the student how to organize his time.

After the first week, the pilot-to-be meets his instructor and is introduced to the T-34 *Mentor*. The majority of students have had little or no previous flight experience and the instructor is trained to take special care in adapting his students to the world of aviation. To that end, he is assigned a minimum of students.

Primary flight training for the Naval Aviator is divided into two phases: pre-solo and precision. The first phase consists of 11 flights under an instructor's guidance, one safe-for-solo check flight and then the student's first big hurdle — his solo flight. During this phase, the student practices controlling the aircraft, using communications equipment and meeting emergency situations. The second phase, totaling six flights, introduces the student to aerobatics, including wingovers, loops, spins, barrel rolls, Cuban Eights and Immelmans. Preci-

Students, above, study the T-34 Mentor's Continental engine as a part of their academic training before meeting the instructor who will take them through the primary flight phase at Saufley Field.

Basic jet syllabus calls for more ground school to prepare students for operation of the Buckeye, and flight support sessions with instructors to discuss specific maneuvers. Soon, the student finds himself looking down the runway, on his own.

sion and crosswind landings are also practiced. Two of these flights are under instruction and three are solo. The last flight is a check ride to ensure that the student is ready to proceed to basic flight training.

The NFO spends a maximum of two weeks with VT-1 and receives four flights which acquaint him with the fundamentals of interplane communications and basic visual navigation and expose him to the sensations of an airborne environment before he goes to VT-10.

On leaving VT-1, not only do student pilots part company from their prospective NFO colleagues, they also scatter from one another. At this time, the Naval Aviator-to-be is assigned to one of the three aviator training "pipelines" — jet, fixed-wing prop or helicopter. In a typical year, approximately 42 percent go to jets, 30 percent to helicopters and 28 percent to props. Assignment is dependent on the student's academic and flight record, individual preference and the needs of the Navy, though not necessarily in that order.

Prop and helo students remain in the Pensacola area for basic flight training while most jet drivers depart for such places as NAS Meridian, Miss., and NASs Chase Field and Kingsville near Corpus Christi, Texas. A number who are selected to attend the University of West Florida in pursuit of a Master of Science degree in aerosystems are assigned to VT-4 and return to NAS Pensacola's Forrest Sherman Field. These students gain 30 hours in an academic year while spending half a day, four days a week engaged in flight training. During their last quarter, they are available to fly two full days and three half-days. VT-4 students receive the same flight support and academic instruction as their counterparts in other jet training squadrons and follow the same syllabus for inflight training; however, on completion, they will also win an MS along with their Navy wings. Flight instructors in VT-4 understand the problems of this sort of workload; about half are also attending classes at nearby colleges in their off-duty hours. Some have schedules similar to their students' and are also working on an MS in aerosystems at UWF under a CNATra-sponsored program.

VT-4, under TraWing-6, differs from

Training Squadron Nine students at NAS Meridian, Miss., relax in the squadron ready room prior to their scheduled flights. Completion of the basic jet phase is marked by qualifications aboard the Navy's only training carrier, USS Lexington.

its sister squadrons in several other ways. It is the only such unit to combine both basic and advanced flight training and it conducts its own academic and flight support instruction which is an NAS function under other training wings. VT-4 is also the only squadron employing the TF-9J *Cougar* as an advanced flight trainer.

Since VT-4 is unique among jet training squadrons, other units will better serve to illustrate the student pilot's progress down the jet pipeline. Situated some 60 miles northwest of Corpus Christi in the south Texas flatlands, Chase Field provides a representative example. There, amid cattle ranches, mesquite, cactus and land cut by a few dry washes, TraWing-3 presides over the air station and its three training squadrons. VT-26, equipped with T-2C *Buckeyes*, is the first to welcome graduates from VT-1 and quickly introduces students to basic flight training. After approximately 26 weeks with VT-26, the student passes to one of two advanced jet training squadrons, VT-24 or 25, and spends another 20 weeks learning to fly the TA-4J *Skyhawk*. On completion of this phase, the student is designated a Naval Aviator and awarded his wings. Once the jet student leaves Pensacola, the single base concept allows him to spend approximately one year at the same location while undergoing flight training. This reduces the amount of disruption previously encountered in moving from base to base for each phase and also allows the officer to become more involved in the social and community activities in his locality. It also assures more stability in jobs for working wives and in social relationships.

The basic jet student (or "stud," as he is most commonly referred to) has not escaped flight support studies by leaving sunny Florida. During this stage of his training, he will accumulate over 72 hours of ground instruction or programmed study. This is organized into an integrated syllabus. Specific subjects treated are presented in blocks which correspond to similar blocks of syllabus flights. The student may fly any of a number of different flights within a particular block rather than in strict sequence. This allows flexibility in scheduling around aircraft availability, poor weather or other problems.

Flight support studies for the basic jet stud include familiarization with local flight patterns, aircraft familiarization, NATOPS emergency procedures and flight procedures. Flight procedures at this stage cover aerobatics, instrument and night flight, formation work, gunnery and preparation for carrier landings. The student pilot also spends about 15 hours in a simulator practicing instrument flight procedures.

The actual flight syllabus naturally contains the same subject areas. The transition/aerobatic phase consists of 23 flights, the last being a check flight during which the student is required to demonstrate his proficiency in handling inflight emergencies, recovery from various stalls and unusual attitudes, and performance of precision aerobatics. The instrument stage features 18 flights, two of which are check flights. The first comes on flight number nine which deals with basic ability to control the *Buckeye* while flying the gauges. The second check flight follows the phase in which air-

ways and terminal approach procedures are taught. One additional flight completes the instrument phase. The student conducts a round-robin airways flight and is responsible for flight planning, en route procedures and voice reports.

He next passes on to an 18-flight formation stage which includes rendezvous, lead changes, formation breaks, four-plane takeoffs, echelon turns and other maneuvers. The 16th flight is scheduled as a check flight with two solo chase flights following to provide additional practice. Four night flights are devoted to navigation and familiarization with night traffic patterns and en route procedures. Three of these are solo flights, the last a solo round robin using basic dead reckoning and visual navigation.

Gunnery consists of ten flights with the last five flown solo. Students learn general gunnery procedures, target-tracking techniques and proper safety precautions. Our jet stud is now ready for his most demanding phase, carrier qualification. He has ten flights to prepare for "the big one" — CQ-11X. The instructor provides one demonstration ride to introduce the field carrier landing pattern and procedures, and one flight to check the student on his readiness to practice solo FCLPs. Seven solo FCLP flights followed by another check flight and the student is ready for the boat. CQ-11X is a check flight, but no instructor is aboard. Instead, the student must make two satisfactory touch-and-go landings and four successful arrested landings aboard *Lexington* (CVT-16), CNATra's training carrier. When this hurdle is passed, the jet pipeline student is ready to move on to advanced training in the TA-4J or, if assigned to VT-4, the TF-9J.

Continuing to use TraWing-3 as an example, the student would next go to one of two advanced training squadrons, VT-24 or VT-25, where he gets 90 flights and some 124 hours of flight time during a 16-week flying schedule. An additional four weeks are devoted to ground school which must be completed before the flight phase begins. A new class, usually of about three students, begins once a week. Fifty or more student pilots are normally assigned to an advanced jet training squadron at any one time.

The academic portion of ground training at the advanced squadron level includes more study in the area of aerodynamics, engineering aspects of the plane to be flown — *Skyhawk* at all squadrons except VT-4, where the *Cougar* is the advanced trainer — meteorology, instrument and operational navigation and communications security. This is supplemented by flight support briefings, some of which precede the flight phase, while others are scheduled to complement various stages of the flight syllabus. Briefings in this series touch on such matters as possible engine and systems malfunctions, emergency procedures, aircraft performance limitations and personal survival equipment. Lectures pertaining to specific phases such as instrument and night flights and formations, gunnery, and carrier procedures are among the approximately 40 support briefings given.

Another type of ground training is provided by the TA-4J synthetic instrument trainer or flight simulator, as it is sometimes called. This device is a duplicate of the *Skyhawk* cockpit and is designated the 2F90. This simulator is not new to the Meridian, Kingsville or Chase-based advanced student. As a basic stud, he is given eight familiarization sessions in the device which is operated by the respective naval air stations under direction of the appropriate training air wing.

Simulator flights are scheduled prior to the first TA-4J flight and in conjunction with certain parts of the flight syllabus. The simulated flight time is made as realistic as possible; student pilots are required to wear their normal flight gear, including oxygen masks. For simulator periods in connection with preparation for carrier landings, the student adds torso harness, flotation gear and other appropriate equipment. At Kingsville, a new simulator is now being evaluated which uses the basic 2F90 tied to a computer system. The new simulator provides a visual display on three screens, in front and on either side of the cockpit, which presents the appearance of taxi, takeoff, landing, low ceiling or carrier approach.

The ground training phase is kept relevant to the flight phase, not only by the comments of student pilots, but also by the evaluation of their flight instructors who go through the

Advanced jet training, whether in the TA-4J, above, or in the TF-9Js of VT-4, below, requires increased skill and precision because of the complexity of these aircraft. An increased operational knowledge is also required.

same syllabus while in training as instructors.

The flight syllabus is designed to provide an indoctrination in the essential flight experiences that the student will encounter initially in the fleet. Particular emphasis is placed on developing self-confidence and headwork in the student. A student's workday is normally restricted to two flights in a maximum span of ten hours. Most flights last an average of just under an hour and a half. The flying portion of advanced training is broken down into 11 stages, beginning with aircraft familiarization, which include both normal and emergency procedures with emphasis on systems operations, flight characteristics and landing techniques. After nine hops, the student moves on to the next two phases which are aimed at developing his instrument flying skill so that he may make a rapid and safe transition to instrument flying in fleet aircraft after leaving the training command. The second of these two stages involves jet airways navigation and, when successfully completed, earns him a standard instrument rating. Nineteen flights are encompassed in this phase of training.

Formation work takes up the next three flights in which the student develops the ability to maintain tight tactical formation and perform various formation maneuvers. The next stage involves the student pilot in night flying once more with attention to night formation and night landings. After five such sorties, the student is ready for six visual navigation hops planned to introduce him to the principles of low level navigation, using ground feature recognition, precise cruise control and night navigation techniques. Flights include such items as pop-up attacks on simulated targets and two-plane armed reconnaissance with attacks on targets of opportunity. After six airways navigation hops which place emphasis on FAA procedures, flight planning and precision instrument flying, the student enters the weapons delivery phase.

In this portion of the syllabus, the stud learns air-to-ground dive weapons delivery, using Mk 76 mini-bombs, 2.75" rockets and 20mm guns. During 11 flights, he develops dive angle, airspeed and pipper control. He also learns how to deal with returning to base with hung ordnance. With this under his belt, he is next exposed to air combat maneuvering during 11 flights that give him practice in offensive and defensive tactics including vertical and horizontal scissors maneuvers, high G rolls, gunsight tracking and loose deuce maneuvering.

Prop pipeline begins with basic training in the T-28 which is capable of outperforming some famous WW II fighter planes. NAS Whiting Field is home for CNATra's Trojan squadrons.

All this work at last brings the student to the final stage in his training to become a Naval Aviator. The last 14 flights once again prepare him to go aboard *Lexington* but, this time, in a fleet-type aircraft. The flights go through the familiar FCLP drill, along with practice in slow flight, approach to stalls, airspeed, attitude and power control. Emphasis is placed on maintaining pattern interval and glide slope control. Squadron instructors act as landing signal officers throughout this stage. All are fleet experienced LSOs. After 13 flights involving both day and night FCLPs are satisfactorily completed, the stud is ready to go to sea. Syllabus flight K-14 which ends his long period of training under CNATra requires the student to successfully perform two touch-and-go and six arrested landings. With this climactic finale to his training, the jet stud changes his title to Naval Aviator.

Not all student pilots can be jet pilots, however, and a goodly percentage is funneled either by choice or circumstance into the prop pipeline. These prospective aviators remain in the Pensacola area somewhat longer than their faster flying comrades. On departing VT-1, they travel further upcountry to NAS Whiting Field not far from the Alabama line. There, they must come to terms with the T-28 *Trojan*, the trainer used in the prop basic flight syllabus. Normally, the student will be assigned to VT-3; however, both VT-2 and VT-6 are capable of providing the same training even though tasked with the role of providing fixed-wing training for the helicopter pipeline. Since these three squadrons and NAS Whiting are all under the supervision of TraWing-5, the transfer of students to one or another of the squadrons to make the best use of training resources is easily facilitated. The flexibility of the training air wing concept has significantly improved the management of men, material and mechanics within the Naval Air Training Command.

Ground school and flight time are intermixed during 22 weeks of basic

The basic prop student of VT-5, right, brings his T-28 Trojan to a precision landing during field carrier landing practice at OLF Barin Field. When he has sufficiently practiced FCLPs, he is sent aboard Lexington for carrier qualification.

prop training. This is facilitated by the use of programmed texts, so that the student may schedule his studies at his own rate and around his scheduled flights. No classroom work is involved, although assistance is available from NAS Whiting instructors. Subject matter covered includes meteorology, visual and instrument navigation, basic communications, aircraft recognition, as well as engineering and aerodynamics of the T-28. In addition, the student receives 18 sessions in the synthetic instrument trainer totaling some 23 hours which are devoted to instrument flight familiarization and instrument navigation. Eight hours of this are simulated night instrument work.

The flight portion of the basic prop student's schedule consists of six stages, the first of which is transition to the *Trojan* and features eight flights under instruction, in which takeoff and landings are perfected along with learning to recognize and recover from stalls and spins. The student is also taught how to cope with any type of emergency which might arise. On completion of these flights, the Naval Aviator-to-be is ready to solo the T-28. Although the T-28 is a training aircraft, it should be remembered that it can outperform some of the well known fighter planes of WW II.

The next stage consists of 14 flights and is the precision/aerobatic segment of his basic training. In this stage, the student learns to pinpoint his landings on a small section of the runway, as well as learn to control his aircraft through rapidly changing attitudes and altitudes. Half Cuban Eights, Immelmans, loops, wingovers and barrel rolls become part of his daily routine. Once this is mastered, the student pilot is ready to move on to 11 flights in the basic instrument stage and fly without visual reference outside the aircraft. Armed with his ground studies and simulator sessions, he puts this knowledge to aerial test. With the basics under his belt, he is ready for radio instruments involving eight flights in which he learns to fly from one airport to another and execute a safe letdown from en route altitude while positioning his aircraft for landing. As in the basic instrument stage, he has no outside visual reference to aid him during these flights.

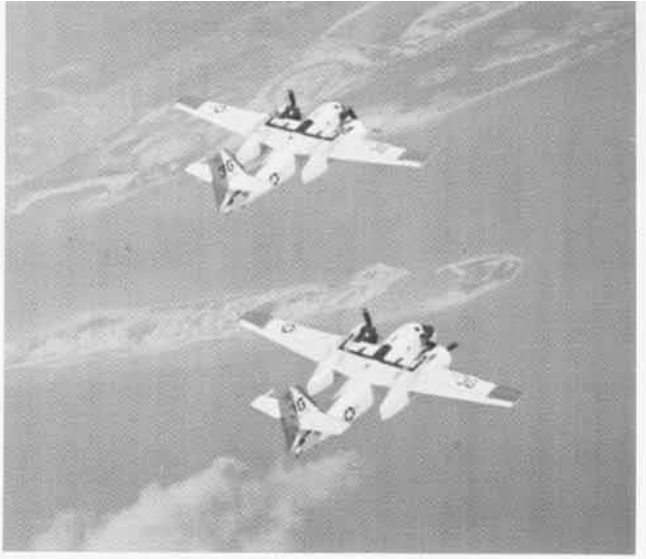
During the next 13 flights, the student is introduced to formation flying. Beginning with two-plane division practice, he learns the fundamentals of tactical formation maneuvers as flown in fleet fighter and attack squadrons. Later flights in this stage are four-plane evolutions which require even greater teamwork and precision. Two formation cross-country navigation flights wind up this stage, and the student goes on to make three night flights, two of them solo, before completing Phase I of his basic training.

Phase II is conducted by VT-5 at NAS Saufley Field under TraWing-7 and prepares the student to go aboard *Lexington*. The ability to land an airplane aboard a ship at sea sets the Naval Aviator apart from his counterpart in all other branches of the service. Although at three weeks it is the shortest syllabus in the prop pipeline, the VT-5 training program is perhaps the most demanding, precise and yet satisfying phase of basic training. After only 13 flights, the fledgling aviator lands his T-28 aboard a carrier steaming in the Gulf of Mexico. To accomplish this feat in so short a time requires many hours of studied concentration and involves ground school classes covering the theory of carrier landings and use of optical landing aids. The mirror and Fresnel lens systems are explained in the classroom and backed up by the student's use of programmed text. Flight procedures dealing with response to signals, safety and emergency situations are discussed for both FCLP and carrier environments.

The flight phase begins with three dual hops (student and instructor) which review formation rendezvous and procedures and introduces the student to carrier approaches and landings.

During this time, the student learns the art of flying the T-28 at slow speeds and precise altitudes while attempting to align his aircraft properly on the optical glide path. He soon finds there is no such thing as "close enough" and that he must be right down the center of the simulated flight deck painted on the runway at an outlying field.

After successfully completing the



Night flying is an important part of the advanced prop training syllabus for the Naval Aviator-to-be. Students in this phase of training also learn to operate their twin-engine TS-2 Trackers in formation during their stay at NAS Corpus Christi, Texas.

FCLPs, wave-offs and simulated deck launches with an instructor alert to correct any dangerous tendencies, the student, if rated safe for solo, joins a flight of five fellow student pilots and meets his landing signal officer (LSO). Throughout the following ten solo flights, satisfying the demands of this professional becomes of primary importance. With the LSO coaching from his position beside the runway, the student practices simulated carrier approaches until ready for the real thing.

The tug that he feels on his shoulder harness that signifies a successful arrested landing is the student aviator's initiation into the ranks of the "Tail Hookers." This comes on flight CQ-14 which requires two touch-and-go and six arrested landings on *Lexington* for qualification. This finishes the training at VT-5 and the student is now on his way to advanced training at NAS Corpus Christi.

On arriving at the Gulf Coast base, the student will join one of three squadrons under TraWing-4 for the next 17 weeks as he learns to fly the twin-engine TS-2 *Tracker*. He may be assigned to VTs 27, 28 or 31 for his inflight work, but NAS Corpus Christi will provide for academic training through classroom lectures and use of programmed texts. Flight support briefings are conducted by squadron personnel. Academic studies include aerodynamics which familiarize the student with use and interpretation of TS-2 flight performance charts; an aeromedical review that discusses the physical demands of flight upon aviators as well as escape from the aircraft and survival equipment; communications security; flight rules and regulations; and advanced meteorology instruction. TS-2 engineering also absorbs a large block of training time and ranges from power plant and accessories to fuel, hydraulic and electrical systems. Simulator sessions are paralleled to actual flight and contain material matched to the requirements of inflight training.

After two weeks spent in ground school, the student begins 15 weeks of flights which are divided into six stages beginning with familiarization with the *Tracker*. The student, in addition to the usual introduction to flight characteristics, emergency procedures and preflight inspections, meets a new situation — cockpit teamwork by pilot and copilot. After ten dual hops in which he perfects his flying techniques and emergency procedures, he joins another student for two solo flights before advancing to the next stage involving 26 dual instrument flights. During this stage, he uses VOR, TACAN and other radio aids to conduct instrument departures, airways flight and terminal approaches while meeting and dealing with unexpected emergencies. The last flight of this stage, when successfully completed, earns the fledgling pilot a standard instrument card.

The night flying stage which follows begins with a day solo flight and consists of nine night hops that concentrate on airways work, takeoffs and landings, and a review of emergency procedures.

The tactical orientation stage which follows involves formation work including CV rendezvous, breakups, lead changes and free cruise. Low altitude precision maneuvering overwater, photo runs and visual navigation are also part of this stage which consists of seven flights.

With this work completed, the student is ready to enter the final stage of his training in the prop pipeline. Thirteen flights prepare the student to take the *Tracker* aboard the training carrier. During these flights, he not only learns to bring his twin-engine plane to precision landing during FCLPs but also learns to deal with the problems of single-engine landings and wave-offs. This training is conducted with the aid of LSOs with fleet experience in the *Tracker*. On flight F-14, after the instructor demonstrates touch-and-go and arrested landings, he exchanges positions with the Naval Aviator-to-be who then is required to complete two touch-and-go and six arrested landings aboard *Lexington* before returning to Corpus Christi to receive his Navy wings.

The third source of Navy, Marine and Coast Guard pilots is the helicopter pipeline. The students selected for this training leave VT-1 and, like the prop students, go to NAS Whiting for a pre-helo, fixed-wing phase in T-28s. Normally they are sent to VT-

Helicopter training begins with transition from the fixed-wing, propeller-driven T-28 to the turbine-powered TH-57A SeaRanger at HT-8, NAS Ellyson Field. Instructor and student conduct preflight checks, left, and TH-57A returns home from flight, above. Carrier qualifications are also a part of helicopter pilot training, right.

2 or 6 but, as previously outlined, may be trained by VT-3. Their flight and ground training, including carrier qualification, is the same as in Phase I of basic prop training with the exception that they omit the four-plane formation work.

Unlike the prop pipeline, the helicopter student stays in TraWing-5 when he leaves Whiting Field to begin the next phase of his training. Nearby NAS Ellyson, home of helicopter training in the Navy, is also under TraWing-5 as are the two squadrons stationed there, HTs 8 and 18. There is a 50-50 split between Navy and Marine students with a sprinkling of Coast Guard and occasional Allied students.

Primary helicopter training is conducted by HT-8 and consists of six weeks of flight and ground school. Ground school, conducted by the naval air station, leans heavily toward programmed text studies; however, helicopter aerodynamics and engineering of the TH-57 *SeaRanger* in which the student receives training are supplemented by lecture periods. The TH-57 is a lightweight, turbine-powered, off-the-shelf aircraft that features low operating cost and a number of safety factors contributing to its effectiveness as a training helicopter.

In a change to the sequence found in other squadrons, the HT-8 student flies his first hop prior to ground school. This aids him in gaining perspective for the studies he will soon be engaged in. After ground school, the student helo pilot resumes the transition stage which consists of 20 more flights. These deal with coming to terms with basic helicopter flight and include learning the operation of collective, cyclic and rpm control. The student learns air taxiing, vertical takeoff and landing, use of ground effect, transition to forward flight and autorotation procedures as well as various methods to meet emergency situations arising from engine failure or systems malfunctions. After nine flights, the student pilot receives his solo check and gets in three solo hops and four more dual flights before receiving the primary stage check which completes this phase of training. Between the two check hops, the student is introduced to cross-country navigational operations and night helicopter flights.

Advanced helo training is also conducted at Ellyson. The student merely moves from the upper deck of the hangar to the lower deck to enter HT-18. Here the training aircraft is the H-1 *Huey* which is represented by a mix of models. The TH-1L, designed specifically for Navy/Marine pilot training, is joined at HT-18 by UH-1Es from the Marine Corps, UH-1Ds on loan from the Army and UH-1Ls from HAL-3 which gained fame in Vietnam operations.

While in HT-18, the students will spend an average of ten weeks becoming the Navy's only *unrestricted* aviators, qualified in both fixed and rotary wing aircraft. Training is divided into three stages, the first being

transition to the *Huey*. In this stage, seven hops are devoted to enhancing the student's basic air work and control coordination while reviewing the same type of work he performed in HT-8.

The second stage introduces the helo student to operational flying with emphasis on such items as maximum load takeoffs, hoisting operations and flight into and from rough terrain situations. Two-plane formation maneuvers and preparation for carrier landings are also practiced during this stage of training. On the ninth operational flight, the student joins a three-plane formation to fly aboard *Lexington*. After five landings on the carrier's deck, the next stage begins. This is made up of two parts: basic instrument and radio instrument training.

Armed with ground study and flight simulator sessions, the student learns to fly the *Huey* without visual reference outside the cockpit. He makes instrument takeoffs, autorotations and practices flying various patterns of predetermined direction and altitude, climbing or descending as prescribed. The sixth of these flights is a check hop which ensures that the student is ready to proceed to the second part — radio instruments. Here the techniques mastered in part one are integrated with using information derived from ADF, TACAN and VOR to fly from one airport to another and execute a safe letdown and landing in all-weather conditions. Eight cross-country flights, the last being a flight check, end this phase. On successful completion of this final check, the student helo pilot is designated a Naval Aviator.

Though the various pilot-training pipelines have each been followed to awarding of Navy wings, this does not mean that the newly designated Naval Aviator has finished his training. His next stop will be the carrier replacement air wing or replacement air group that will provide him the transition training he will need to enter a fleet squadron. That, however, is another story and will be saved for another time.

Now we must return to VT-1 at Pensacola to pick up the student NFO and trace his progress to designation and Wings of Gold.

From VT-1, all future NFOs proceed to VT-10 at Forrest Sherman Field, where non-pilot aviation training spans a 20-week course that includes 500 hours of academic work and 42 hours of flight time. The student NFO begins by attending two weeks of classes which provide initial familiarization with aircraft navigation, covering such subjects as aviation maps and charts, aircraft flight instruments, the CR-2 navigational computer, meteorology and safety procedures. At the end of this period of instruction, the student is scheduled for four flights in the T-34 which expose him to an airborne environment, allowing him to observe flight procedures while experiencing the effects of using controls on flight attitudes. He also uses the visual navigation techniques learned in the classroom.

While the student spends his mornings riding in the T-34, in the afternoons he attends avionics classes in electrical power generation and distribution, electron tube theory, semiconductors and wave propagation.

On completion of this phase, the student NFO returns to a full day of classroom work split among navigation, advance systems, radar systems and training problems in VT-10's new 1D23 communications/navigation trainer. This block of training prepares the student for the next segment of inflight education. Navigation classes cover dead reckoning, VHF and UHF nav aids, airways structures and associated navigation publications, and voice communications. The student is also introduced to the mysteries of computing an aircraft's weight and balance, and fuel management.

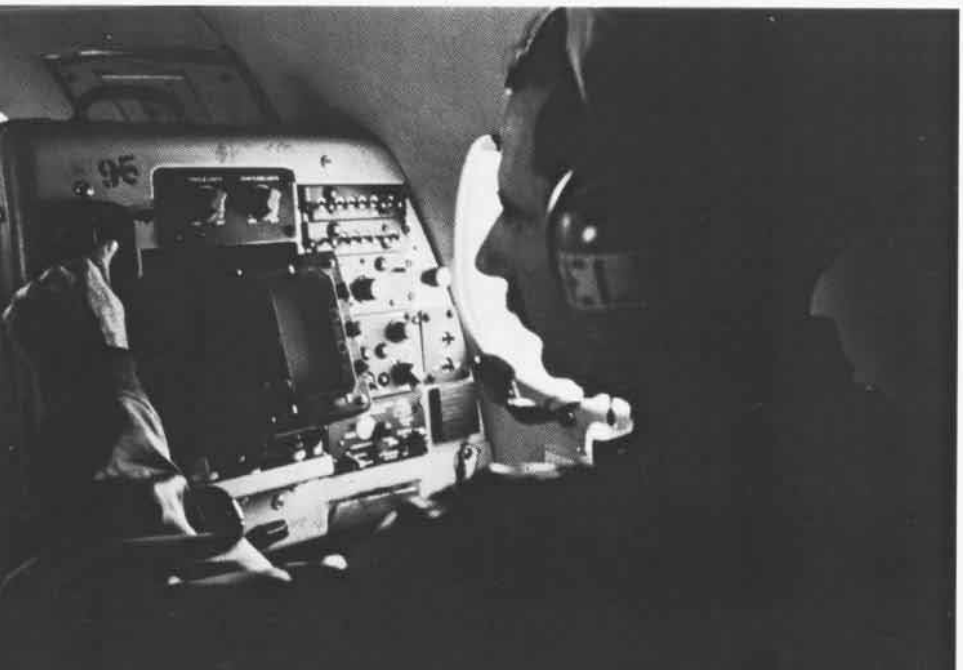
Advanced systems consists of classes which discuss the air data computer and air mass, inertial and Doppler navigation. Radar systems studies cover the principles of radar and radarscope interpretation. Sessions take place in Griffith Hall, a modern concrete and brick structure. Here, the new communications/navigation trainer, in a huge room, provides individual cockpit stations for up to 40 students. Each station is capable of simulating a realistic operating environment with respect to aircraft flight performance, fuel consumption, radio communications and navigational systems. Typical fleet aircraft computer operations are also represented. The cockpit stations are arranged in a manner similar to those in the F-4, A-6, E-2 and F-14. They contain instruments, controls and displays which are controlled by a central digital computer that causes the cockpit displays to respond to student inputs as he attempts to navigate his "plane" on a preplanned mission. The computer not only simulates flight situations but is able to record, evaluate and grade the student's performance throughout the mission.

After six simulated flights in the 1D23, the student NFO is ready for training aloft in the twin-engine T-29's flying classroom. Four six-hour flights introduce airborne navigation techniques using classroom-learned methods and dead-reckoning navigation aided by search radar. These flights occupy half the day. The student spends the other half using the radar trainer or attending basic computer systems classes. In the latter, basic principles of computer systems, digital computers and computer programming are studied along with techniques of operating an airborne computer system.

After T-29 flights are completed, more advanced navigation and radar systems classes are scheduled, along with additional sessions in the 1D23. This prepares the student for three flights in the T-39 *Sabreliner* where TACAN point-to-point navigation and airways navigation and communications procedures are put into practice. Again, the schedule calls for flying half the day with half a day in the classroom. The subject this time is electronic warfare. The student NFO is acquainted with EW history and techniques with emphasis on the increasing importance of this phase of aerial warfare.

More classroom work follows. Nine class sessions prepare the student for his next series of flights, in the TF-9J *Cougar*. The classes deal with the plane's power plant, various systems, communications setup and emergency procedures, including use of the Martin-Baker ejection seat. Two more training periods in the 1D23 and the NFO-to-be is ready for two flights in the *Cougar* to practice high speed, low level navigation and to observe formation tactics.

A final series of lectures and briefings finish the training at VT-10.



Naval Flight Officer training in elementary navigation and flight computations begins in VT-10's classrooms at NAS Pensacola, Fla., above. Later the student gets an opportunity to put his theoretical training into practice in the squadron's various aircraft.

Among these is a visit to *Lexington* and selection of the type of advanced training the student will next attend. As in the case of the student pilots, selection is based on individual desire, record of accomplishment and the needs of the service.

Advanced training determines the specialty of the NFO on assignment to a fleet squadron. Today, Naval Flight Officers comprise approximately one-third of the commissioned officers in Naval Aviation, and fly in two-thirds of the Navy's operational fixed-wing aircraft. As weapons systems become increasingly sophisticated, the need for highly trained NFOs will become even more pronounced. On going to advanced training, each of the student NFOs, who have all followed the same training cycle to this point, enters the pipeline of his selected specialty.

Most go to NAS Glynco, Ga., under the supervision of TraWing-8, and enter one of four separate schools run by VT-86. Glynco is just north of historic Brunswick, founded in 1771 and named in honor of King George III's native land. Nearby are the famous Georgia Sea Islands with their beautiful beaches and live oaks festooned with Spanish moss.

On reporting to VT-86, Marine students are assigned to either Basic Jet Navigation (BJN) School or Radar Intercept Officer (RIO) School. Navy students may also be assigned one of these two schools or they may be assigned to either the Airborne Electronics Warfare Course (AELW) or the Airborne Intercept Control School (AIC). In the latter two cases, further training follows.

Basic jet navigation is a four-week course which begins with a six-day academic phase concerning the T-39, aircrew and communications procedures, airways navigation and high speed, low level visual navigation. During the flight phase, the student gets 12 hops totaling some 33 hours — four airways nav flights, four devoted to radar mapping and four low level hops. On completion, the student is designated a Naval Flight Officer and, if a Navy officer, is sent to an A-6, A-5, A-3 or S-3 squadron. Marine BJN graduates go to A-6 squadrons.

A radar intercept officer student may also be either Navy or Marine and receives ten weeks of training at VT-86. An eight-day stint at the BJN school prepares him for low level navigation in the T-39 before RIO instruction begins. As an RIO student, he gets 488 hours of specialized instruction in academic, simulator and flight phases of air intercept training. The academic portion, which takes 216 hours of this training, is divided into three phases. The first introduces the student to basic intercept procedures, the second provides a basic working knowledge of airborne radar, and the third develops his mastery of advanced intercept procedures.

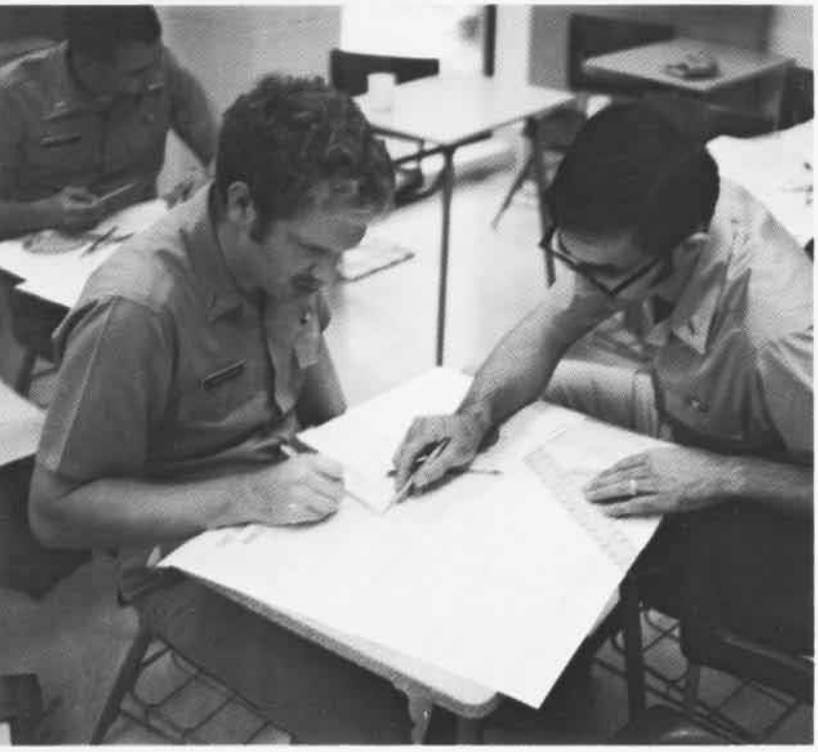
The simulator phase accounts for 96 hours and allows the student to use an F-8 *Crusader* radar system to perfect his intercept procedures under controlled conditions prior to actual airborne application.

The remaining 176 hours of the syllabus are conducted inflight in the T-39 *Sabreliner*. Three student RIOs are normally carried on each flight. The schedule calls for one fam hop, one cross-country flight, two navigation flights and 22 airborne radar sessions. Initially, intercept problems are confined to basic techniques but as the number of flights progresses, so does the complexity of the problem. For the "bogey" in these problems, an A-4 *Skyhawk* is used because its flight characteristics are similar to those of a MiG.

On graduation Navy and Marine RIOs may be assigned to F-4 *Phantom* squadrons and some Navy RIOs may be sent to VF-1 or VF-2 to fill the rear seat of the F-14 *Tomcat*.

The next two pipelines are for Navy pilots only. The ten-week airborne electronic warfare course provides over 300 hours of instruction in the basic concepts of electronic warfare. The 146-hour academic phase includes instruction in passive and active EW, identification of unfriendly radars and methods of rendering them ineffective. Simulator training allows the student to practice these lessons

Flight time in the TF-9J Cougar allows the prospective Naval Flight Officer to become accustomed to the duties and flight environment of carrier-based jet aircraft. This is one of several types of planes student NFOs fly in before assignment to advanced training.



While academic studies, such as navigation, left, occupy a good part of the student's training time, flight support briefings, above, give the prospective Naval Flight Officer a chance to relate his knowledge to more immediate training situations.

in a controlled environment before advancing to the inflight phase where he gets his first chance "to put it all together" during five missions in the EC-121 *Warning Star*. Each flight is scheduled for six hours and affords practical training in applying the student's knowledge of navigation, radar surveillance, detection and plotting. With this phase successfully completed, the new NFO receives his wings but must still remain another four weeks to attend BJN school before a fleet assignment which may place him in an EC-121, EP-3E, EA-6B, EA-3B or EKA-3B.

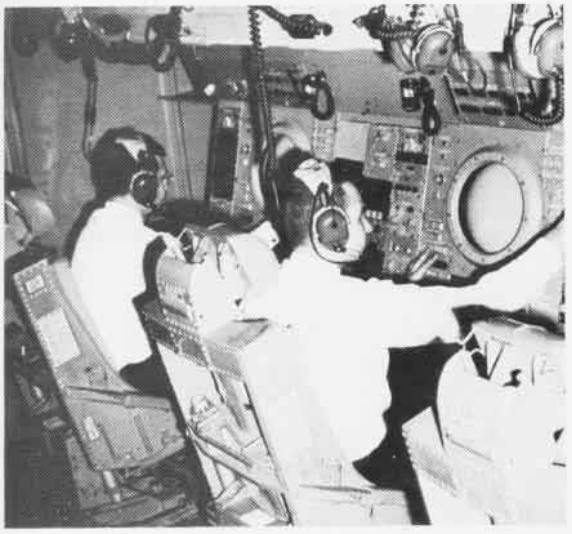
The last of the four Glynco-based pipelines involves two courses of instruction — the six-week airborne intercept control school and the twelve-week airborne tactical data systems school. The first provides 30 hours of academic studies in intercept theory and the various types of intercepts, with supporting information to show the effects of aerodynamics and environmental factors on conducting aerial intercepts. AIC students also become acquainted with equipment use and receive instruction in directing search and rescue operations. This theoretical work is put to use during 45 to 50 hours of simulator practice in which two students use a computerized training device to simulate various types of intercepts. One student controls the opposing fighter; the other attempts to direct and intercept aircraft.

Once this phase is mastered, the student is ready to control real planes. He conducts 30 live intercepts, utilizing the services of A-4Cs stationed at Glynco. Of six planes launched for these exercises, two act as opposing bogeys while the remaining four become the intercepting combat air patrol. The student controls the operations of the interceptors from the radar console of a GCI installation.

ATDS, the second school in this pipeline, lasts 12 weeks, providing 210 hours of classroom and laboratory instruction. Students are trained in the use of the E-2B general purpose computer, radar and IFF. They are also introduced to the automated data line communications system. Operational procedures and tactics are practiced for 220 hours in the E-2B tactics trainer, which gives the first opportunity to apply classroom instruction. First, the student receives four weeks of instruction to familiarize him with the equipment, then 25 hours of intensive air intercept control practice. Finally, he is assigned five problems of increasing complexity which deal with different parts of the world. These constitute the final test of the trainee's skill before beginning inflight training.

The student NFO completes his work in ATDS during a series of six-hour missions in the EC-121, participating in airborne early warning detection and tracking exercises. This not only provides a realistic situation, but also allows the student to operate in its proper environment the equipment he will be working with in a fleet assignment. The completion of AIC and ATDS courses signals the end of the student's training and he is presented his Navy wings and designated a Naval Flight Officer. He may now look forward to an assignment with a squadron equipped with E-1 or E-2 aircraft.

One other training unit remains to be discussed. Not all student NFOs are sent to Glynco; a number are fed into the Navigation School pipeline



Advanced radar intercept training is provided student Naval Flight Officers at NAS Glynco, Ga., above. Corpus Christi-based navigation students, right, head for T-29s that will carry them over the Gulf of Mexico to put classroom theory into practice.

and go to VT-29 at NAS Corpus Christi. There, students spend 11 weeks becoming proficient in long-range, overwater navigation. Three weeks of this are spent in the NAS-run ground school. The first week introduces the student to celestial navigation, E-10 computer, dead reckoning, the periscopic sextant, drift meter, and the various charts, manuals and forms needed for navigation. The second week prepares the student NFO to apply this knowledge in daytime flight through a study of practical preparation. Use of LORAN and radio navigation aids are also part of this instruction. A week of preparation for night navigation flights rounds out this period.

The NFO-to-be next gets three day flights, each of six hours' duration, on which he must navigate using dead reckoning, lines of position gained from observation of the sun and LORAN. Three more six-hour night flights develop the ability to navigate from celestial lines of position derived from the position of the stars and planets. Normally, eight students are supervised by two instructors who have also been through the same syllabus and bring extensive fleet experience to the job. Flights are conducted in either C-117s or T-29s assigned to VT-29.

After this phase, the student navigator returns to ground school to spend a week studying electronic, pressure pattern and grid navigation. Doppler radar and the inertial navigation computer are part of his training at this point. With this knowledge, he is scheduled for three six-hour overwater flights. The first requires him to accurately keep track of the aircraft's position using the variety of methods available to him: LORAN, dead reckoning and celestial. The second flight is more complicated. It is a coastal radar and shipping surveillance mission that requires accurate navigation to locate his own aircraft and to pinpoint numerous surface targets. Radar and LORAN are the chief equipment relied on during this operation. The third flight is conducted over the open waters of the Gulf of Mexico and is also a shipping surveillance mission.

This is followed by a four-leg, extended overwater flight in which the student participates in the planning, including selection, of flight destination. The flight, which lasts from Monday through Friday, may be scheduled for such overseas destinations as Bermuda, Panama or Puerto Rico. This is followed by a graduation flight which concentrates on the patrol squadron's mission.

As in the case of the new Naval Aviator, the NFO has not completed his training when he leaves the Naval Air Training Command. He will next go to a replacement squadron for advanced training in the same aircraft that he will fly in a fleet squadron. Though there are very few exceptions to this rule, nearly every student can expect to receive operational experience before arriving at his assigned unit.

Any organization is a reflection of its training program. The record of Naval Aviation, past and present, should be sufficient to show the high quality of preparation Naval Aviators and Naval Flight Officers receive at the Naval Air Training Command. This in turn reflects the energy and dedication of the officers and men who keep the program functioning at a high level year after year.

NAVAL AIRCRAFT

The Naval Air Training Command employs a wide variety of aircraft in accomplishing its mission of producing the world's best pilots and flight officers. The aircraft range from single-engine light planes to four-engine heavyweights crammed with electronics gear. Some have been designed specifically as trainers, but a number are types found in fleet use. Whatever the plane, the training that comes with it is the best. The dedicated personnel of CNATra work to ensure that it is.

T-34

T-28C

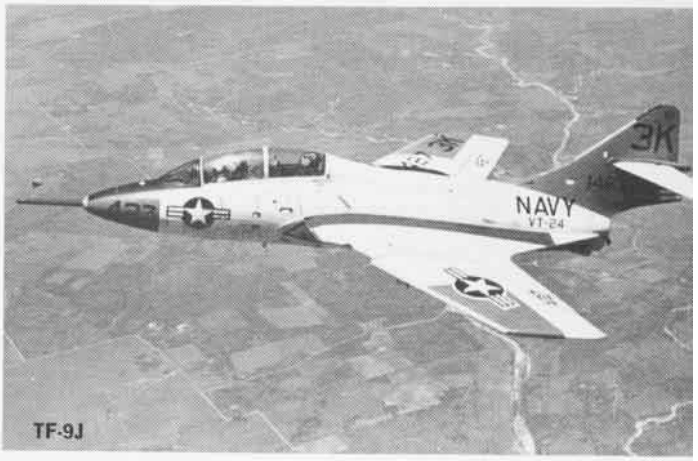
TS-2


T-39


T-2C

TH-1L

TA-4J



TF-9J

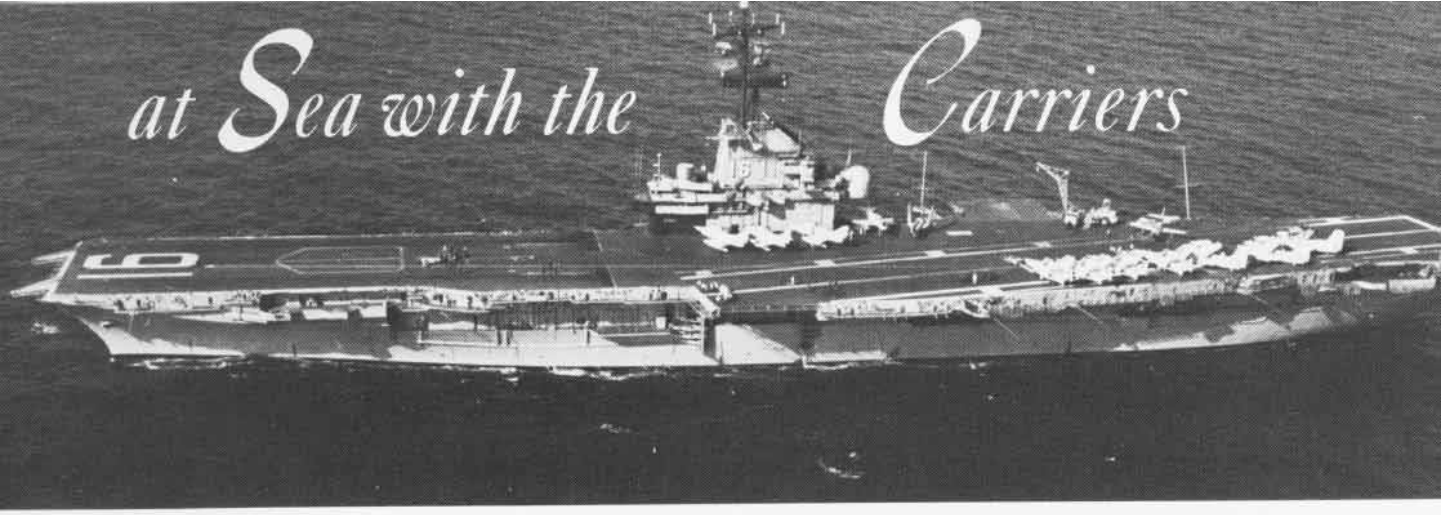
C-117

TH-57

NAVAL AIR TRAINING COMMAND

T-29

EC-121



at Sea with the Carriers

Lexington (CVT-16)

The Navy's only training carrier celebrated her 30th birthday on February 17 while in drydock at the Boston Naval Shipyard for maintenance repairs. Since 1962, when *Lexington* was home-ported to Pensacola, Fla., as a training carrier, over 314,000 arrested landings have been recorded during carrier qualifications for the training command and the fleet.

This is the first time *Lady Lex* has been to Boston since her designation was changed from CVS to CVT. When she arrived in Boston, she carried some dependents on board, a first for the carrier. Another first was the temporary duty assignment of a naval female officer, Ens. Gayle Heinrich of the NAS Pensacola public affairs office.

Captain Charles C. Carter is C.O. of the training carrier.

America (CVA-66)

The Distinguished Flying Cross citing "superb airmanship, courage and devotion to duty" was awarded to VA-82's Commander D. M. Sumner, LCdr. Leighton W. Smith and Lieutenants junior grade James N. Brister and Marvin D. Baldwin for their role in the destruction of the heavily defended Thanh Hoa bridge in North Vietnam. The famed railroad-highway bridge, a key link in the North Vietnamese supply system, had survived several years of American bombing—to the point where several superstitions had grown up around it. The four attack pilots were able to collapse the structure only by achieving nearly simultaneous hits with two 2,000-pound, TV-guided *Walleye IIs* and four 2,000-pound conventional bombs, while flying through a ring of large caliber antiaircraft guns and surface-to-air missiles.

America observed a cake-cutting ceremony and plaque presentation during a long 43-day line period in the Gulf of Tonkin. The celebration honored the pilots who made landmark arrested landings during that period—LCdr. Mac Johnston and Lt. William Castle, who logged the 96,000th landing; VA-82's Lt. Gary Tabbert, the 95,000th landing; LCdr. Bob Cross and Lt. John Conners, VF-74, the 94,000th.

Oriskany (CVA-34)

LCdr. Paul Austin, operations officer of CVW-19, made his 600th arrested landing on January 17, in an A-7 *Corsair II*, when he returned from a mission over South Vietnam.

Oriskany is serving her sixth line period in the Tonkin Gulf.

Crewmen relax with Bob Hope aboard Midway on his 22nd Christmas tour of the Far East. His last "Thanks for the memory"?

Midway (CVA-41)

While *Midway* anchored in Singapore for a few days, a holder of the U.S. Navy Distinguished Service Award, otherwise known as Bob Hope, entertained the carrier's 4,500 crewmen and guests from an Australian battalion and other Navy ships. Predicting peace in 1973, Hope said, "Next Christmas will be my first at home in 20 years."

Captain S. R. Foley, Jr., C.O., recently hosted a dinner in honor of the ship's most outstanding sailors of 1972—AN Frederick Brooks, AB2 Richard Sylvester, HT2 Wayne Zimmerman and AT1 James Marshall.

Midway, home-ported in Alameda, Calif., has been serving off Vietnam since April.

Enterprise (CVAN-65)

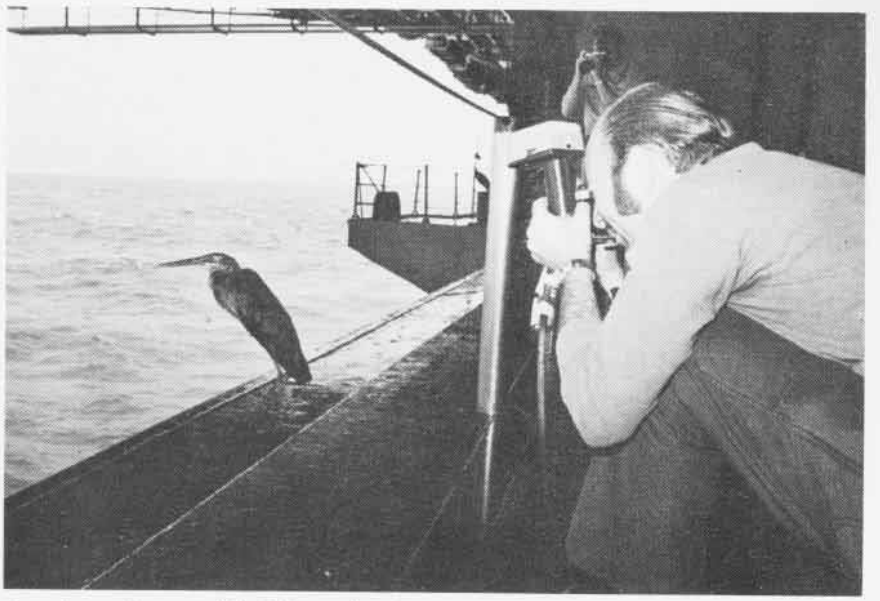
The *Big E* enjoyed a welcome respite from combat duty when she visited the popular Seventh Fleet port city of Hong Kong during December, her first visit there since 1968. The nuclear-powered carrier is on her sixth WestPac cruise.

Soon after she returned to the Gulf of Tonkin, two milestone landings were logged by CVW-14 pilots. Lt. John Leslie, VA-97, recorded the 131,000th landing in an A-7E *Corsair II*. He was in the right plane at the right time for the second consecutive 1,000th landing, having also logged the 130,000th landing earlier in December. A few days later, Lt. Bob

Miller of VAQ-131 recorded the 132,000th landing in an EA-6B *Prowler*.

Just before the end of the year, Ltjg. Scott Davis and his RIO, Ltjg. Jeff Ulrich, VF-142, flying an F-4J *Phantom II*, made the first MiG kill of the cruise, which was also the first MiG shot down by *Enterprise*-based pilots. The action took place about five miles south of Hanoi at altitudes ranging from 7,000 to 50 feet.

The combined efforts of VAQ-131's maintenance personnel and flight crews, and the ship's AIMD and supply departments made it possible for the *Lancers* to claim a record 258.4 flight hours for a four-plane EA-6B squadron during one month—with an aircraft availability rate of 89 percent. VAQ-131 was aboard *Enterprise* for the first time.



A carrier can house and feed thousands of crewmen — and guests — for long periods of time. So, the arrival of the bird, above, caused no problem for Midway steaming far out at sea.

Forrestal (CVA-59)

Descending from night marshal, inbound to *Forrestal*, Commander Ken Dickerson, executive officer of VA-81, logged the first operational hands-off landing in an A-7E *Corsair II* aboard CVA-59. This milestone brings the A-7E community one step closer to the all-weather carrier landing capability which will be routine in the near future.

Videotape was a form of communication used during the Christmas holidays aboard *Forrestal*. Ltjg. Donald Tomlin, *Forrestal's* PAO, coordinated the talents of his radio and TV crew and a Sony Rover videotape recorder to provide "show and tell" messages from the men. The tapes were played back to their families at ComNavAirLant headquarters on equipment provided by *Independence*. Besides making familygrams possible, the recorder is a go-anywhere, do-anything instrument which can be used between ships as well as ship-to-shore.

John F. Kennedy (CVA-67)

After completion of a two-month yard period at the Norfolk Naval Shipyard at Portsmouth, *Kennedy* began training operations to requalify her air wing and familiarize new personnel with carrier operations.

MM2 Kenneth R. Mayer is the richer by $500 for his suggestion that the high pressure air systems in Two and Four main engine rooms be connected with piping and a series of valves so that air from either system can be cleaned by the other's pump. Previously, they were independent of each other and if one system became inoperable there was no way to clean the air in that system. It is likely that his proposed change will soon become standard on all aircraft carriers.

Kennedy's crewmen can now lose that extra pound—or two—or just flex their muscles with the new equipment that has been added to the carrier's gym: a complete line of professional exercise and muscle-building equipment that can be used by 14 men at the same time.

Hancock (CVA-19)

In January, *Hancock* left Hunters Point Naval Shipyard in San Francisco after two months of extensive repair work that included several weeks in drydock. After the yard period, her first since 1968, *Hancock* began preparations for yet another deployment to WestPac.

Saratoga (CV-60)

For days on end, a carrier's escort destroyer steams in the trail of its big charge, always alert for an emergency.

Shortly after a midnight in January, a *Saratoga* plane guard helo crashed into the Gulf of Tonkin while flying a routine mission. Although the SH-3 turned over when it hit the water, the four crewmen were able to escape and climb onto the hull. *Sara's* escort, USS *Henderson*, in lifeguard station astern, was able to come alongside quickly and retrieve the men from their precarious perch.

VA-37 recently marked 10,000 accident-free hours when its commanding officer, Commander J. F. Watson, trapped aboard *Sara* in an A-7A *Corsair*. VA-37 had been flying under combat conditions for the last eight months.

Intrepid (CVS-11)

Twenty-nine-year-old *Intrepid* acquired her 28th commanding officer when Captain Raymond H. Barker relieved Captain Charles S. Williams, Jr. Capt. Barker, a Naval Aviator for 23 years, comes to CVS-11 from USS *White Plains* (AGS-4). Capt. Williams reported to the staff of ComFAirQuonset. *Intrepid*, the flagship of Rear Admiral J. G. Finneran, Commander, Cruiser-Destroyer Flotilla Twelve, is presently deployed to the Med.

As the carrier began its scheduled six-month deployment, the Sixth Fleet Music Show, complete with a 21-piece band and a 24-member singing group, came aboard to welcome *Intrepid* off Gaeta, Italy.

THE SELECTED AIR RESERVE

Mini-Cruise

Nineteen officers and enlisted men of VR-53 Det. Memphis recently completed their first two-week mini-cruise.

The Selected Air Reservists flew 20 missions and logged over 20,000 miles while carrying cargo, passengers and mail to military air facilities at Midway and Wake Islands; Agana, Guam; Cubi Point, R.P.; Da Nang, RVN; Atsugi, Japan; and Okinawa.

Bomb Champs

Attack Squadron 204 has won the first CVWR-20 bombing derby. The trophy was presented to the Memphis-based squadron December 10 during its administration/material inspection.

Four pilots from each of the three A-4 squadrons in the air wing competed in the derby which was held at NS Roosevelt Roads, P.R. Each pilot carried two bombs, two rockets and 100 rounds of 20mm ammunition, and each was allowed two runs on a specific target with each type of weapon.

VA-204 pilots flying in the competition were Commander Ted Hannah, squadron C.O., Lieutenant Commanders Norris Flagler and Bill Kraus, and Lt. Conrad Olson. Other squadrons participating in the derby were VA-203, Jacksonville, Fla., and VA-205, Atlanta, Ga.

SAR Takeover

Selected Air Reservists of NARD G3 are taking over NAS Lemoore, Calif. Since its birth in November 1971, Division Reservists have been augmenting into jobs of air station personnel and now relieve those assigned to the Transient Aircraft Line Division every weekend.

In late 1971, ComFAirLemoore requested that an Air Reserve component be established at the air station. At that time the nearest units were located at NAS Point Mugu almost 200 miles to the south, and at NASs Moffett Field and Alameda, some 200 miles to the north.

The request was forwarded by Commander, Naval Air Reserve Force to NARU Alameda for action. An active duty recruiter, AMC Virgil A. Fultz, and two SAR recruiters were sent to Lemoore to enroll former Navy men into the Selected Air Reserve program and establish a working compatibility for the new Weekend Warriors. Within three weeks of the original request, the first weekend drill meeting was held.

Commander Marvin DuMay of NARS-U2 at NAS Los Alamitos, Calif., has compiled quite a drill attendance record. He has missed only one weekend drill — in 1959. He estimates that he has driven more than 115,000 miles and worn out over six sets of tires since 1946 to maintain his almost perfect record.

After its first month of operation, NARD G3 had 40 men drilling on weekends. Now there are four officers and 60 enlisted men in the division which is led by Commander Robert S. Gehman. One officer and 15 enlisted men drill on each of the four weekends every month and completely relieve transient aircraft line division personnel from weekend duty.

Captain J. H. Alvis, C.O. of NAS Lemoore, considers the program quite successful. "During the week," he says, "air station aircraft are fully scheduled for logistic and SAR support for local fleet squadrons. During the weekend, they are available for routine maintenance. Over the past 26 weekends, the Reserves have documented an outstanding number of productive maintenance hours."

As the Air Reserve community at Lemoore grows, it will take over more of the air station—during weekends, that is.

Atta Boy!

Captain J. Russell Rohleder, NARSU Norfolk, Va., was recently presented a Navy Commendation Medal by Rear Admiral Michael Lorenzo, Commander Naval Air Reserve representative.

Capt. Rohleder received the medal for service from July 1, 1971, to September 16, 1972, when he organized, trained and supervised a 20-member Seapower Presentation Team that recently earned three CNO awards.

The citation accompanying his medal reads, in part, "This team, under Captain Rohleder's leadership, obtained prime television and radio time and extensive newspaper coverage . . . for prominent naval leaders to keep the American public fully informed of present and future naval challenges. To date, his nationwide program has resulted in a total audience exceeding two million and government savings exceeding $50,000. In addition, his effective recruiting efforts have procured over 100 personnel from the Pittsburgh, Pa., area for affiliation with various Naval Air Reserve components."

The captain has been with the Naval Air Reserve program for twenty-six years. In civilian life, he is affiliated with the Bell Telephone Company of Pennsylvania.

Post-Grad Work

Beyond them, across the wide expanse of water, rose the San Francisco skyline, framed against the bright blue Pacific horizon. As the two aviators went about the business of preflighting their A-7s, an elderly gentleman and his officer escort took note of the seemingly lethargic pace employed by the pilots.

"Are they usually this slow in getting ready for a flight?" he asked. "If it were me, I think I'd be a lot more anxious to get in the air."

"Well," replied his escort, "there are two likely reasons for that. One, they're going a long way and they've got to be extra certain that their planes are ready for the trip. And two, well, today is the last time they'll be seeing this part of the world for a long time and I'd guess they want to drink up every bit of the view that they can."

The officer described the journey which lay ahead. As he did, a crackling roar signaled the liftoff of a twin-engine A-3 jet tanker. It climbed slowly over the Bay Bridge, then turned gently westward, toward the Golden Gate.

"There goes their fuel supply right now," he said, pointing toward the huge Skywarrior. The officer had explained that NAS Alameda was the first of six way-stations along a six-thousand-mile-plus jaunt which, after more than 20 hours airborne, would terminate on the flight deck of an aircraft carrier cruising some 80 miles off the Vietnamese coast in the South China Sea. The pilots were doing more than just delivering hardware to squadrons aboard the ship. Upon arrival, they would join a squadron and become part of a carrier air wing team.

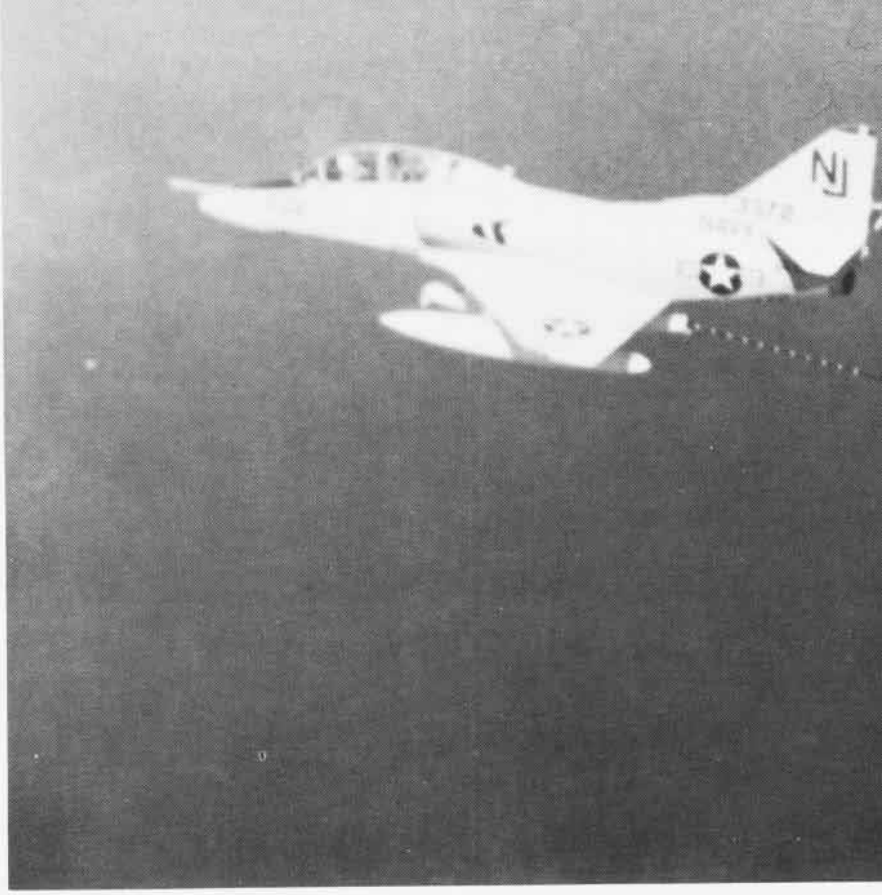
The officer outlined for the old man how air refueling tankers and pathfinder aircraft would join and lead the two on an island-hopping sojourn over seemingly endless stretches of the Pacific. The entire evolution, barring mechanical difficulties, would take no more time than a five-day work week. Outwardly, it was a complex feat involving delivery of two multimillion dollar airplanes and two pilots, whose value cannot be measured in dollars, to a new duty station. Yet nowadays this transPac mission has become routine.

When the officer had finished, the visitor was openly impressed.

"Good Lord," he said, "those two fellows couldn't be much more than 25 years old. Their training must have been superb!"

"In life it is training rather than birth which counts." — Ihara Saikaku, 17th Century

By Commander Rosaria Rausa



TA-4Fs from VA-127 practice inflight refueling, right; below, an A-4F Skyhawk makes a rocket run during a training mission.

A modern writer once wrote that "It is only by training that one can accomplish the difficult, complicated and impossible." The old gentleman was correct: their training had most assuredly been superb and they both were on the spring side of their third decade. In official terms they were Fleet Replacement Pilots — graduates of VA-122, an NAS Lemoore, Calif., squadron assigned the responsibility of training aviators for the fleet in A-7Es. That squadron and others like it in the fighter and attack community are still referred to as RAGs (from earlier terminology when the units were part of replacement air groups).

The RAGs are established primarily along the coastal states. Fighter pilots can expect to train at NAS Miramar, Calif., or NAS Key West, Fla. Attack plane drivers matriculate at NAS Oceana, Va., NAS Cecil Field,

Fla., or, in the west, at NAS Lemoore and NAS Whidbey Island, Wash.

For the newly designated Naval Aviator, fresh from the training command, RAG training equates to achieving a master's degree in military flying. For the second-tour type coming off two shore-duty years or for the more senior aviator who has been stashed behind an administrative desk in Washington, the RAG syllabus is a concentrated half-year of polishing those aerial skills already learned, and finessing the myriad physical and mental requirements which characterize the tailhook pilot on today's carriers.

Going through the RAG is not unlike spring training for a major league baseball player. It's a matter of smoothing the edges, conditioning one's self to cope with flying demands which range from radar navigation to night air refueling. It's learning to put that bomb 50 feet or closer from the bull's-eye rather than just inside the 300-foot circle.

Baseball is a game of inches — like the hit that frustratingly eludes the outstretched glove of the shortstop and skips into left field, driving in the winning run. In carrier flying, it's keeping the meatball centered with datum lights on a black night devoid of horizon. When a ballplayer reaches back for that extra concentrated effort to time his swing at a hopping slider, he's somewhat like the pilot, regardless of experience level, who calls on every fiber of knowledge and physical skill as he manipulates the controls of a high performance jet down the glideslope, slamming onto the wet deck of a flattop.

The challenge is always there, in baseball as in carrier flying. The stakes, of course, are considerably different.

While at the RAG, the new pilot will, for the first time, be exposed to inflight refueling, low level navigation, radar navigation, special weapons delivery, night bombing and, the ultimate test, night carrier landings. These, of course, are in addition to the many other phases of training which were treated in the pre-designation stage, and which are covered in more depth by the RAG.

What kind of men are the new flyers? Commander Mac Gleim, who skippers VA-125, the A-7A/B RAG at Lemoore, describes them "as well motivated as any group I've seen over the years." They would have to be, of course. He adds, "We won't send a pilot to the fleet unless he is damn good."

Ltjg. Bob French began RAG training at Lemoore in December of 1972. "The rapport between instructor pilots and replacement pilots is much better here than it is between student and

instructor in the training command. The training is 100 percent better." He goes on, "Before, we would study for a hop by the letters A, B, C, D. Now, much more headwork is expected from us." In other words, the fundamentals have long since been mastered.

Lt. Bill Ostheimer, an instructor at VA-125, fills the Training/Landing Signal Officer billet. As he puts it, "There are two times when the replacement pilot recognizes he's at a higher level of training. When he points the nose of that aircraft toward the ground at night in a steep dive-bombing run, and when he points his airplane toward the tail end of the ship at night."

To help him in the latter endeavor, NAS Lemoore now has the NCLT, Night Carrier Landing Trainer. It is an incredible device consisting of a detailed A-7 Corsair cockpit encased in a substantial portion of fuselage and a control room with multiple, computerized panels which reflect what is happening inside the cockpit as the pilot "flies." Nearly every environmental condition from pitching deck to quartering winds can be simulated in this super "Link Trainer" as the pilot strains through long periods, working his way around the night carrier pattern. Usually, after a bout with the NCLT, the pilot emerges wet from perspiration, completely exhausted, a little bit angry at himself and the machine, but also quite a bit more prepared to proceed to carrier qualifications.

Also at Lemoore is VA-127, where A-4 Skyhawk training is accomplished under the tutelage of Commander Tom Poore. Though the A-4 is gradually being phased out of fleet use, Cdr. Poore proudly displays a sign in his office boldly lettered "A-4's Forever!"

Cdr. Poore likes the caliber of pilot he sees at VA-127. The young ones from the training command are "more business-like." He adds that "the atmosphere for training is different. It's more relaxed, yet the flying is more demanding."

How do the more senior students like it? Cdr. Poore notes that the second-tour individuals as well as those officers slated for eventual commands are particularly "eager for the training and enjoy it."

It's an overcooked word — training. But for the Navy pilot, it is as essential to his performance as food is to his body.

For the young man with a measure of Jonathan Livingston Seagull in his heart, there are few more fascinating endeavors than those offered up through the pursuit of Navy wings and a career in wearing them. And although the RAG occupies only one comparatively short element of time in the career pattern of a Navy man, it is usually a memorable and productive interlude.

The older gentleman was saying goodbye as the two A-7s, in perfect symmetry, wing to wing, rose from the runway against the backdrop of the beautiful California city. Twin trails of smoke inscribed their flight path briefly across the sky. It took only seconds for the flight to climb high and away over the ocean. Soon the planes were out of sight.

There was undisguised envy in the old gentleman's voice. It was low, almost muttering. "You know," he said, "I worked all my life building up a business and making a go of it. I'm proud of the way I've spent the years. But, after seeing this and learning a bit about this aviation in the Navy, I think . . . I think that if I had it to do all over again, I might want to be . . .

He hesitated a moment, then said, "But that would be dreaming. . . ."

TransPac pilots watch their A-3 tanker over San Francisco as they walk to their planes.

NAVAL AVIATION

1911 1973

NEWS

Harpoon Test Launch

POINT MUGU, Calif. — The *Harpoon* antiship missile scored a bull's-eye in its first test launching against a target ship at the Pacific Missile Range.

Under development for the Navy by McDonnell Douglas, the *Harpoon* was launched from a P-3 *Orion* operated by Naval Missile Center personnel. The missile leveled off at low altitude above the Pacific and flew toward its target at subsonic speed, guided by an active radar seeker installed in the missile.

During the last seconds of flight, the *Harpoon* performed a terminal maneuver designed to evade an enemy's close-in defenses and slammed into the target ship, a decommissioned destroyer moored off Point Mugu.

The *Harpoon*, designed to be fired at beyond-the-horizon ranges from ships and submarines as well as aircraft, has been launched successfully on several previous occasions, but the latest test was the first in which the missile was equipped with terminal guidance and fired against a target.

For airborne launches, the *Harpoon* is powered by a turbojet engine. For surface ship and submarine launches, it employs a solid propellant booster that propels it during the first portion of its flight. After the spent booster separates, turbojet starts automatically.

In its air launch configuration, the missile is 151 inches long and weighs 1,100 pounds. It can be launched from P-3, S-3, A-6 and A-7 aircraft.

Three Busy Days

IN THE ATLANTIC — In a three day period, aviation facility ships *Shreveport* (LPD-12), *Ponce* (LPD-15), *Portland* (LPD-37), *Fairfax County* (LST-1193) and *Nashville* (LPD-13) completed 1,010 accident-free landings by helicopters from Marine Air Groups 26 and 29. Pilots were day and night carrier qualified in what is believed to be an aviation first.

Training included high tempo helo operations simultaneously with an underway launch of landing vehicular tractors.

RH-53D Makes Its First Flight

PATUXENT RIVER, Md. — The improved mine countermeasure (MCM) helicopter, the RH-53D *Sea Stallion*, has successfully made its first flight. The helo is being built by Sikorsky Aircraft to replace the Marine's CH-53A now being used by Helicopter Mine Countermeasure Squadron 12 (*NANews*, August 1971).

The RH-53D will have MCM capabilities as an integral part of the helicopter as well as air-to-air refueling, adapting the Air Force inflight refueling probe and droppable external fuel tanks to conform with the helicopter's MCM mission.

Navy will evaluate the RH-53D this spring, with HM-12 expected to obtain the helo during the summer.

Lamps Deployments

IMPERIAL BEACH, Calif. — Detachments 2 and 4 of HSL-31 were busy during their deployments as LAMPS detachments.

While serving aboard USS *Harold E. Holt* (DE-1074), Det. 2 conducted naval gunfire spotting, electronic and visual reconnaissance missions, antisubmarine warfare operations, and recovered a drone which added a new dimension to the LAMPS concept.

After pilot Lt. Dennis H. Christian launched an SH-2D from *Holt*, the helo's sensor operator observed the drone on radar at eight miles. Swimmers AWC A. H. Blood and AT2 M. R. Selander dropped into the water where they freed the drone from its parachute, rigged a harness to the downed craft and attached a hook. After the drone was lifted from the water it was allowed to drain and then carried back to the ship. The recovery took less than 15 minutes — hours less than it would have taken the ship's company to get it aboard with a crane.

Det. 4 recently returned from a seven-month deployment to WestPac aboard USS *Marvin Shields* (DE-1066). While deployed, the detachment conducted extensive ASW operations with squadrons aboard USS *Ticonderoga* and participated in a SEATO antisubmarine exercise with the British, Australian, New Zealand, Thailand and Philippine navies. The detachment also took part in an exercise with the Japanese Maritime Self-Defense Force.

Off the coast of Vietnam, the LAMPS helicopter was used for electronic surveillance, patrol, naval gunfire spotting, radar surveillance, logistics, SAR and medevac missions.

Drone Returns Four Years Later

NAHA, Okinawa — A three year and eight-month ocean voyage of a BQM-34A pilotless target drone, which began off the coast of California, came to an end here in September. The drone was discovered floating in the ocean about 1,200 miles east of Tokyo, Japan, by the crew of the ship *Ancostane*, which turned it over to U.S. personnel in Yokohama. It was later taken into custody by Fleet Composite Squadron Five at NAF Naha.

The jet-powered target drone was launched in 1969 as an air-to-air missile target for VFs 111 and 162. After flying for 45 minutes it flamed out and was lost in the ocean. Miraculously, it remained afloat for three years and seven months, riding the waves and weathering the Pacific's storms. The last month of its voyage was spent on the final lap to Naha and the target division of VC-5, which dubbed its traveler "Miss America."

Letters

Historical Aircraft

I read with interest your lengthy article on naval aviation historical exhibits in the December issue of *Naval Aviation News*. Your readers may be interested in knowing that, in addition to the aircraft and facilities mentioned in your article, a number of U.S. naval aircraft are currently displayed by the Connecticut Aeronautical Historical Association.

The photos show two of those aircraft: a Grumman F9F-2 *Panther* (BuNo 125155) with the markings of VMA-323 and the North American FJ-1 *Fury* (BuNo 120349) in which Commander Evan Aurand made his record-breaking flight in 1947.

Other naval aircraft which C.A.H.A. either owns or has on loan include: a General Motors FM-2 *Wildcat*, a Douglas AD-4N *Skyraider*, a Vought XF4U-4 *Corsair* and a Lockheed SP-2E *Neptune*.

Peter Kilduff
57 Sefton Drive
New Britain, Conn. 06053

An Answer

In your "Letters" of the December 1972 issue, you indicated that the picture of the Patrol Squadron Eight P2V was either a P2V-2 or -3.

The photograph is of a P2V-2. The P2V-2 has a 3350-24 engine with a solid, four-bladed, rounded-tip propeller. The P2V-3 was equipped with a 3350-26 engine and a hollow, three-bladed, paddle-type propeller.

The bureau numbers of the P2V-2s in my log book range from 39319 through 39364. P2V-3s are in the 122--- series and P2V-3Ws are in the 1242-- series.

I was in VP-931 and VP-57 back in the early 50s and have flown almost all models of the P2V, including the P2V-7 with skis.

If you would like to give my name to Mr. Picciani, I would reply to any question that he might have.

Richard A. Koch, Cdr.
NAILSC
NAS Patuxent River, Md.

Fire!

Your article in the November *Naval Aviation News*, "Waiting for Mayday," was outstanding. The dedication and plain guts of the Vietnam *Angels* is especially appreciated by all aviators. Let's hope the young man in the picture on page 32 doesn't start a fire by smoking so close to the aircraft.

A. R. Rogstad, Cdr., USNR
Administrative Officer
NARU North Island, Calif. 92135

Information Needed

As the author of the American Aviation Historical Society's Research Project No. 7234, I am researching the history of the Bell AH-1G/J attack helicopter. I would be interested in hearing from any of your readers who might be willing to share with me information concerning these aircraft.

James D. Sprinkle
5338 N. Lakes Drive
Roanoke, Va. 24019

F-4/F4

Your December 1972 issue is great, but let's keep the record on great aircraft correct. At the top of page 12, you *do* show an F4F, but the aircraft at the bottom of page 13 is the FM-2, not an F4F. The F4F had a P&W engine, the FM-2 a Wright, larger in circumference or diameter. Us old SBD pilots know the F4F fighter was our salvation until the F6F and F4U came along.

Arthur M. Moran, Col., USMC (Ret.)
44-100 Keaalau Place
Kaneohe, Hawaii 96744

The colonel is right. We tried to get away with a play on the F-4/F4 bit, but it didn't work.

FILMS

The following motion picture films are among the latest released by the Film Distribution Division, U.S. Naval Photographic Center.

MN-10871 (unclassified) *A-7 High Angle of Attack Characteristics*. Basic sweptwing aerodynamic factors, high angle of attack characteristics and out-of-control recovery techniques (23 minutes).

MN-11019 (unclassified) *Weather Advisory Service*. How a pilot obtains weather information before and during flight and how it is passed on to other pilots flying the same route (25 minutes).

MV-8379 (unclassified) *G Facts*. Explains the basic principles of gravitational pull, covers the physical effect on the human body with a description of positive, negative and transverse G, and the use and purpose of the different types of anti-G suits (23 minutes).

MN-11070A (unclassified) *Aircrew Rescue Operations — F-4J*. Aircrew rescue procedures for the F-4J (20 minutes).

MN-11070C (unclassified) *Aircrew Rescue Procedures — A-7E*. Aircrew rescue procedures for the A-7E (25 minutes).

KN-10759D (unclassified) *History of Flight—Wright Brothers—Part 1*. Early family life and the first business ventures of the Wright brothers. The first attempts to fly with gliders and the first flight of a heavier-than-air, power-driven machine (29 minutes).

KN-10759E (unclassified) *History of Flight—Wright Brothers—Part 2*. Inventions and innovations devised by the Wright brothers to aid them in the air, and their European trip to display their new aircraft (29 minutes).

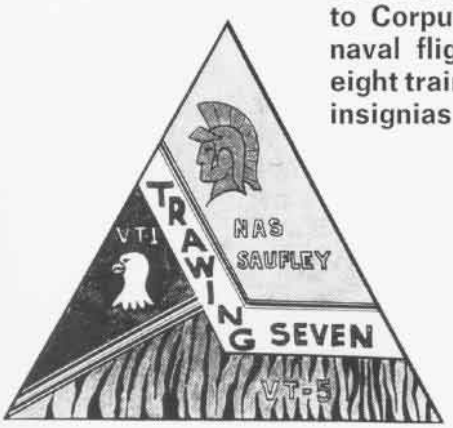
KN-10759F (unclassified) *History of Flight—Wright Brothers—Part 3*. The first demonstration flights of the Wright plane in Europe and America, the first military plane, the first woman to fly and many of the historical flights made by the Wrights (29 minutes).

KN-10759G (unclassified) *History of Flight—Wright Brothers—Part 4*. The first American pilots are taught to fly. Early experiments in the military use of the airplane. The first transcontinental flight and the Navy's first aircraft (29 minutes).

KN-10759H (unclassified) *History of Flight—Wright Brothers—Part 5*. The death of Wilbur Wright in 1912, and 1912-1918 aircraft and aeroboats designed by Wright. Development of the bug, the first American guided missile, and technical developments made by Orville Wright. Awards and honors received by the brothers (29 minutes).

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

With the reorganization of naval training under CNT last year, CNATra moved from Pensacola to Corpus Christi and performs naval flight training through its eight training wings, six of whose insignias are represented here.



Naval Aviation
NEWS