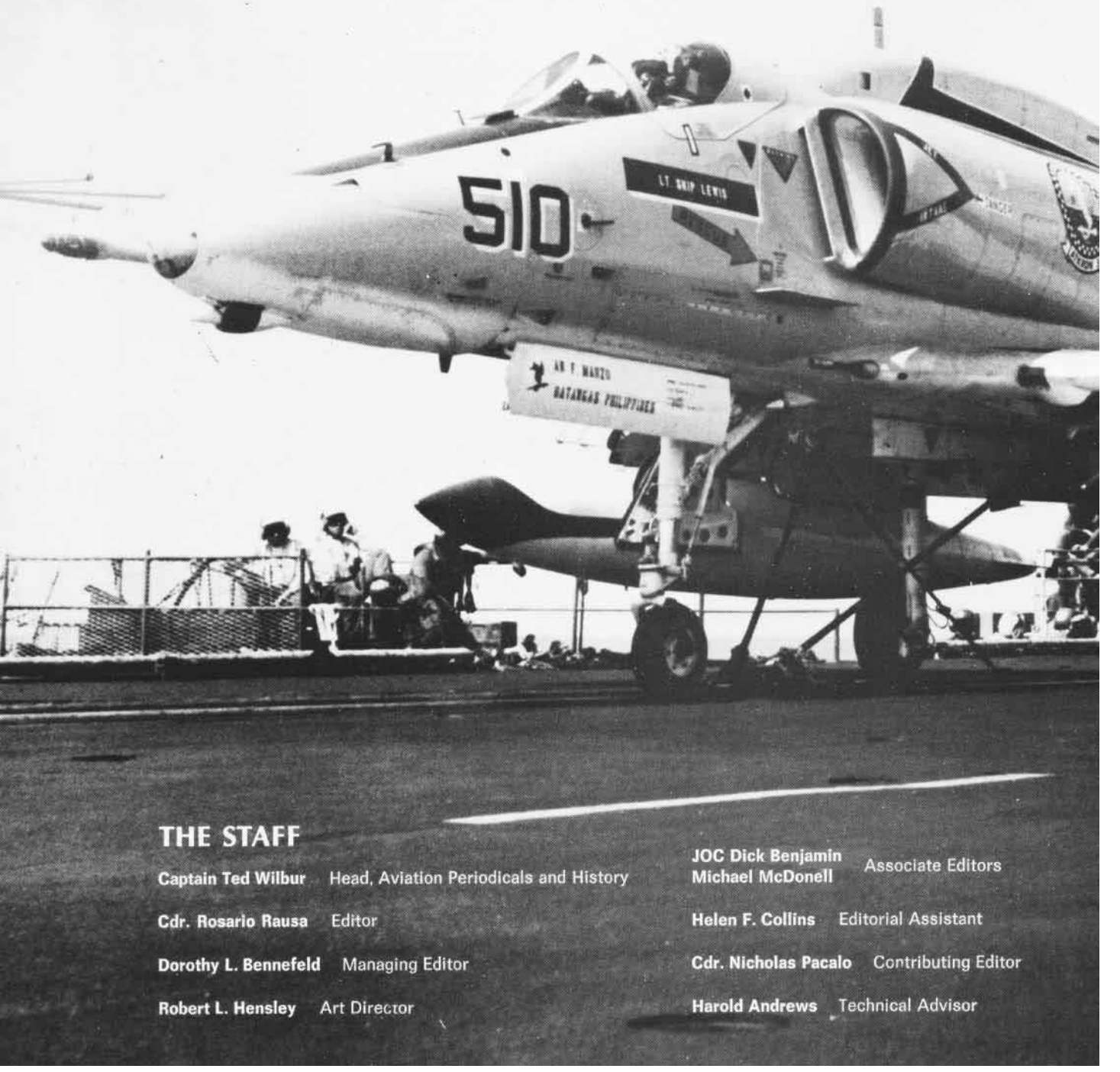
NAVAL AVIATION NEWS

SEPTEMBER 1973

NAVAL AVIATION NEWS

FIFTY-FIFTH YEAR OF PUBLICATION



COVERS — VF-31 Phantoms on front cover were caught by camera of PH1 H. D. Phillips, CCGLant. Above, Capt. Albert J. Monger, then C.O. of Hancock, launches Cdr. Bill Greiwe, CAW-21, on carrier's 100,000th starboard cat launch. PH3 Tom Skelly was behind the lens. On the back cover, VA-204's A-4s ride Coral Sea's deck elevator.

PERSONAL GLIMPSES

Faster Than a Speeding Ferrari

For almost 11 years, I had envied those who had earned their gold aircrew wings. Now I was an hour and a half away from completing my final aircrewman qualification for aerial cameraman — a flight in a two-seater jet.

But this was not to be just any joy ride. I was going up to photograph VAQ-33 aircraft in formation over Kitty Hawk, N.C. — a type of assignment I had never had before!

My butterflies had butterflies!

I was very apprehensive. Would I come back with good pictures? Would I come back at all? Would the ejection work?

As I awkwardly stepped into the TA-4F and hooked up the multitude of wires, buckles and hoses that would unite me with the aircraft, my fears began to subside. I thought, "What the hell, I had never messed up a job before, so why should I begin now. Besides, 13 years had taught me a lot about photography." That number didn't sound too good, so I mentally added another year of experience.

Pilot Lt. Barrett Philpott climbed in and I soon heard his crackling voice in my helmet saying, "You'll feel a few Gs when we take off — be sure your cameras don't hit the throttle and flap controls."

I really didn't need another invitation!

The acceleration was tremendous!! If my Italian friend could experience the speed sensation that I was now, he would probably sell his Ferrari.

In 15 minutes, we had left Norfolk behind and were rendezvousing with the other aircraft over the memorial that marks the place where the Wright brothers made *their* first flight.

As I began to pull myself into a suitable shooting position, I found I was plagued with reflection from inside the cockpit. This was the first of a series of problems and their solutions that I was to encounter that day.

The way to eliminate the internal reflections is to tape brown wrapping paper to the inside of the canopy leaving a hole in each side to shoot from. I knew not to rest my camera against any part of the aircraft if I wanted sharp photos. I also realized that I had far too much photo equipment with me. All you really need is a camera with a normal angle lens and plenty of film. It is also a good idea not to hang the camera from your neck as the myriad of wires, hoses and survival gear strapped to your body and helmet all try to strangle you when you lift your camera to shoot.

With most of the problems overcome, I began talking Lt. Philpott into the correct shooting angle. I also had him talk the other aircraft into a tighter formation. I began shooting, fast, the pilot raising or lowering the aircraft as necessary.

I kept thinking that the best camera to have would be a motorized Hasselblad with a 70 exposure film pack. Wishful thinking!

I had a Leicaflex with a history of the back popping open and exposing the film at the most inopportune times! But I had solved that problem: I taped the back of my $1,000 camera closed with a two-cent strip of tape.

After shooting over 100 shots, I told the pilot I was done. We made a few passes at Kitty Hawk and were soon headed north.

It was too soon for me. I wanted to stay up at least another hour and mentioned this to the pilot. He mentioned something about walking home and being embarrassed about running out of gas. I quieted down. We were soon in the NAS Norfolk landing pattern.

Then it happened. Until then the pilot had not tried doing snap rolls, dives, flying upside down and the like, as is customary for a man's first jet hop. I thought that since we were about to land, I had escaped that initiation. I was wrong!

The tower said, "break right," and Lt. Philpott made a fast, tight, right-hand turn which banged my head against the canopy and tried to leave my stomach in another sector of the wild blue yonder!

For some reason we didn't land right away, but had to make another approach. This time I was ready for the break-right bit and managed to enjoy the sensation. I asked the pilot if he felt like doing a few more turns like that but he mumbled something about him and the plane having the growls and needing fuel and food.

I began to worry again as we made our final approach. We were *very* low — below tree top level — and we *still* hadn't leveled the aircraft! I thought we were going to do a cartwheel.

Then in a split second, the plane was straight and level and touching down for a textbook landing. I wouldn't need a heart massage after all.

The photographs turned out very well and two weeks later I received the wings I had waited so long to earn.

Ed's note: We didn't see the photos PH1 John R. Sheppard, CCGLant, took that day, but if they are as good as the ones illustrating "Lifelines," VAQ-33 has some beauties.

NAVAL AVIATION NEWS

1911 1973

ComNavAirPac Realignment Changes

SAN DIEGO, Calif. — The current shore establishment realignment program has brought about changes in the Naval Air Force, Pacific Fleet.

NavAirPac activities disestablished by the realignment are ComFAirs Hawaii, Alameda and Adak, and CVSG-29 and Fleet Air Wing Ten staffs.

Eleven commands have had name changes in order to better reflect their duties and functions.

Commander Fleet Air San Diego is now Commander Antisubmarine Warfare Wing, Pacific (ComASWWingPac).

Commander Fleet Air Miramar is now Commander Fighter/Airborne Early Warning Wing, Pacific (ComFit/AEWWingPac).

Commander Fleet Air Lemoore is Commander Light Attack Air Wing, Pacific (ComLAtWingPac).

Commander Fleet Air Whidbey's title has been changed to Commander Medium Attack Air Wing, Pacific (ComMAtWingPac).

Commander Fleet Air Wings Pacific/Fleet Air Moffett is now Commander Patrol Wings, Pacific (ComPatWingsPac).

Commander Fleet Air Wings (ComFAWs) 1 and 2 are now known as Commander Patrol Wings (ComPatWings) 1 and 2.

The carrier divisions have been changed to carrier groups making them ComCarGrus 1, 3, 5 and 7.

To fill the voids left in disestablishing the fleet air commands at Alameda and Barbers Point, ComNavAirPac has set up a detachment at Alameda (ComNavAirPac Det Alameda) and a representative at Barbers Point (ComNavAirPacRep Hawaii).

ComPatWingsPac is now administratively responsible for NS Adak and NASs Alameda and Fallon, both under the administrative command of ComLAtwingPac.

VP Maintenance Award

WASHINGTON, D.C. — The Chief of Naval Operations has announced that Patrol Squadron Five has been chosen from the Atlantic Fleet VP community as the recipient of the CNO Aircraft Maintenance Award for the 18-month competitive cycle. As noted by CNO, VP-5's superior performance in the maintenance area is the result of teamwork that created a new record for long term aircraft availability in an *Orion* squadron. During the squadron's five-month deployment to NAF Sigonella, Sicily, last year, the *Mad Foxes* averaged 75 percent aircraft availability.

Another notable factor in VP-5's success is the squadron's achievement in combating corrosion. VP-5 expends an average of 800 man-hours per month on corrosion control, 600 in preventing corrosion and only 200 repairing corrosion damage.

The squadron, led by Commander Frank Woodlief, is scheduled to return to NAS Jacksonville, Fla., this fall and begin transition to the P-3C.

Duncan L. Groner III

During shipboard operations aboard USS Raleigh (LPD-1) the versatile AV-8A Harrier carrier qualified on still another category of ship and added a new aircraft to the LPD's capability.

SES-100B is Tested

PANAMA CITY, Fla. — The Navy's SES-100B surface effect ship test craft recently arrived at the Naval Coastal Systems Laboratory for deep water and higher sea state testing in the Gulf of Mexico.

The 78-foot long, 100-ton experimental craft had successfully completed a test and evaluation program on Louisiana's Lake Pontchartrain.

While in the Gulf, SES-100B will also undergo expanded performance envelope tests.

Engineering data collected during tests is being applied to the preliminary design of a 2,000-ton operational Navy prototype surface effect ship.

VA-113 Sets a Record

LEMOORE, Calif. — The *Stingers* of Attack Squadron 113 recently reached a milestone. When Commander D. Bruce Cargill, C.O., landed aboard USS *Ranger* (CVA-61) on May 28, he recorded the squadron's 20,000th accident-free flight hour. This marks 43 months of safe flying, and includes over 10,000 flights, more than half flown while deployed at sea. Six thousand three hundred carrier arrested landings were also accomplished during the period.

Viking Completes a Lifetime-Fatigue Test

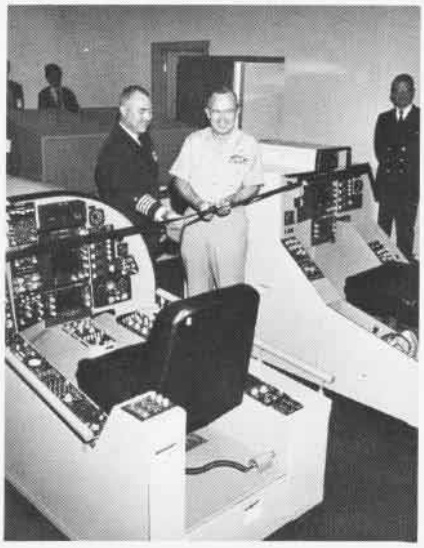
BURBANK, Calif. — In June, the S-3A *Viking* completed its second lifetime-fatigue test, seven months ahead of schedule.

The *Viking's* actual service life is calculated in terms of 6,000 flights — about 13,000 flight hours. The fatigue test vehicle, a complete airframe pulled from the production line, was put through 12,000 simulated flights over a period of eight months in a massive steel test rig at Lockheed's Rye Canyon Research Laboratory.

To simulate a lifetime cycle, engineers create the same aerodynamic loads and inertial forces that the aircraft will experience in 2,000 field landing flights, 2,000 field carrier practice landing flights and 2,000 carrier landing flights.

Eight *Viking* test aircraft, now three-quarters through the development program, have accumulated more than 1,600 flight hours on 1,050 flights. Final Navy Preliminary Evaluation began in mid-July.

Four Wave midshipmen from the NROTC program at NAS Jacksonville arrive at Keflavik NATO base in a VP-24 Orion for 3-day cruise with VP-56. During cruise, they stood switchboard watch in operations control center.



NAS Whidbey Island received a new EA-6B Team Tactics Trainer recently. Cutting the ribbon is ComFAirWhidbey, Rear Admiral John Tierney, assisted by the station's commanding officer, Captain John H. D. Arnold.

'Peep Hole' Wins Cash

MCAS CHERRY POINT, N.C. — Who says a good suggestion never pays off? LCpl. Irwin E. Gilmer of Headquarters and Maintenance Squadron 14 was recently awarded $100 for a simple suggestion for modifying a special tool that is used to adjust a bearing to a specified setting on a J52 engine.

Before Gilmer's modification, a person using the tool had to remove it each time he wanted to check the degree markings. Gilmer suggested that a small "peep hole" be cut in the bottom of the tool. This allows the user to see the degree markings without removing the tool and, therefore, to adjust it properly.

"It's really a very simple idea," says Gilmer. "I don't know why someone didn't think of it a long time ago."

The modification costs $4.66.

Safety Records Cited

WASHINGTON, D.C. — In recognition of their outstanding safety records and overall programs, the Secretary of the Navy has announced the 1972 winners and runners-up in the Navy Shore Safety Award program.

In the major command category the winner was the Chief of Naval Material, for field activities under his direct command. First and second runners-up were Commander, Naval Air Reserve and Commander, Naval Ordnance Systems Command.

In the activity category, the winner was the Naval Air Development Center, Warminster, Pa. First and second runners-up were the Naval Weapons Station, Seal Beach, Calif., and the Naval Air Rework Facility, Quonset Point, R.I.

Coastal Command Trophy

BARBERS POINT, Hawaii — In a June ceremony at the naval air station, Commander Russell E. Frederick, C.O. of VP-1, received the Coastal Command Trophy from Air Marshall Douglas C. Lowe, Royal Air Force.

The Coastal Command Trophy was established on April 1, 1969, to mark the 50th anniversary of the formation of the Royal Air Force and to empha-

size the close ties that exist between the maritime patrol plane aviators of the U.S. Navy and those of the Royal Air Force. The trophy is awarded to the Pacific Fleet patrol squadron which, in the judgment of ComFAirWingsPac, has displayed the highest degree of airborne ASW proficiency during each competitive cycle of the Battle Readiness Excellence Award.

Air Marshall Lowe is the Air Officer Commanding 18 Group, Strike Command, Royal Air Force, at Northwood, England; the same staff on which Cdr. Frederick served as an exchange officer from 1965 to 1968.

Change of Command

NAS GLENVIEW, Ill. — On July 2, Rear Admiral Thomas B. Russell, Jr., relieved Rear Admiral James D. Ramage as Commander, Naval Air Reserve Force/Commandant, Ninth Naval District/Commander, Great Lakes Naval Base.

RAdm. Russell, as head of the Naval Air Reserve, is responsible for the combat readiness of all aviators currently active in naval air reserve units throughout the country.

RAdm. Russell came to his new duty station from U.S. Atlantic Fleet, Norfolk, Va. RAdm. Ramage assumed command of the Caribbean Sea Frontier, Tenth Naval District and the U.S. Antilles Defense Command, all with headquarters in Puerto Rico.

Former POW Augmented

NAS FALLON, Nev. — Former Prisoner of War Ltjg. Michael Penn is believed to have accomplished a Navy first when he was augmented into the regular Navy recently by his former skipper, Commander W. Lewis Chatham of Attack Squadron 56. It is believed that Penn is the first former POW to augment.

Applying for augmentation prior to being shot down last August, Penn was selected during his seven months in captivity. After he was released, the C.O. of the Oakland Naval Hospital offered to perform the ceremony but Penn preferred to wait until Cdr. Chatham could do the honors. (Penn was Cdr. Chatham's wingman during the squadron's last deployment.)

Penn, currently in a leave status, has orders to report for duty at NAS Miramar, Calif.

Torpedo Recovery Cage

NEWPORT, R.I. — In the testing of exercise torpedoes, some method of retrieving the expended weapon is necessary. The normal recovery method employs various types of small craft, particularly the 72-foot torpedo retriever. This method has some disadvantages, particularly in heavy seas. Torpedo firings are often postponed because of the inability of the retriever craft to operate and for fear of damage to the exercise torpedo during recovery.

The Naval Underwater Systems Center, in conjunction with its Atlantic Underwater Test and Evaluation Center (AUTEC), has now perfected a diverless helicopter recovery system for retrieval of the vertically floating, expended Mk 44 and 48 torpedoes. This system, unlike the system which uses torpedo retriever craft, is not limited by sea state.

The diverless helicopter recovery system consists of a rigid, aluminum-frame cage attached to a helicopter by two lines: one to the cargo hook and one to the rescue hoist. For recovery, the helicopter flies to the torpedo, hovers, and then lowers the cage over the torpedo. The rescue hoist is then slacked off and, when the helo gains altitude, the cage and torpedo are automatically rotated to the horizontal position. Then the helo lifts the torpedo and cage back to the recovery area, where it lowers its cargo until it sits on the cage's integral landing frame. No modification to the helicopter and no special ground support equipment are necessary.

UH-1 Huey lifts torpedo and torpedo cage.

The system, presently operational at AUTEC Andros Island, uses UH-1s while PMRF Barking Sands uses H-3s.

Plans are presently being made to demonstrate the system's capabilities from a ship helicopter platform.

VC-3 Aids Recruiting

NAS NORTH ISLAND, Calif. — "Fly Navy" was the theme and that's what 75 young men and women did recently when Fleet Composite Squadron Three flew one of its C-130s to Fargo, N.D., for a weekend. The trip was made when Commander Pete Halle, commanding officer of the local Navy recruiting district, requested that a VC-3 crew assist in their recruiting efforts. He wanted to give prospective Naval Aviation cadets and recruits an opportunity to ride in a *Hercules*, in this case, one which VC-3 uses to launch and control target drones for Pacific Fleet surface and air units.

Eleven crewmen and their skipper, Commander Jack Kennedy, made five 75-minute flights over eastern North Dakota, giving the prospective Navy men — in groups of 15 — a firsthand look at how a naval air unit does its job. Most of them had a turn at sitting in the copilot's seat while the plane cruised at 7,000 feet.

During one flight, Kenneth Carr, a student at Bemidji State College in Minnesota, enlisted under a special arrangement which will permit him to enter aviation cadet training when he completes college next year. There was also a special media flight for reporters and photographers to ensure complete news coverage by Fargo's newspapers and radio and TV stations.

Before each flight, Cdr. Kennedy gave a briefing on VC-3 and its mission, and PO2s Charles Sprouse and Michael Tobin explained the BQM-34 *Firebee* drones in detail.

When the crewmen departed Fargo, they left behind a memento: two out-of-service drones which were turned over to the recruiting office for parades and other civic events.

GRAMPAW PETTIBONE

Fore!

A T-28 *Trojan* was on the last leg of a round-robin airways flight. The pilot in command, although qualified, had less than 800 total hours. There was an enlisted crew member occupying the rear seat.

When they arrived at their destination airport, it was night and the aircraft was vectored to the GCA pattern. About four miles out, while on glide slope, the pilot was informed that he was number two in the pattern. He visually located the other aircraft, an E-2 *Hawkeye*, turning from left to right in front of him, and reduced his power slightly due to the aircraft's proximity.

At this time, with the T-28 at an estimated 90 knots and one-fourth flaps, the pilot decided to execute a waveoff but, at that instant, he encountered what was interpreted as turbulence which caused his aircraft to assume a 90-degree angle-of-bank position to the right with nose high. He added power, executed rudder and left stick in an attempt to regain normal flight attitude but was unable to do so.

The full application of power and

flight controls was ineffective in regaining positive control of the *Trojan*. The pilot, being familiar with the field, was aware of his position over a golf course, so he raised his landing gear, leveled the wings and landed on the golf course.

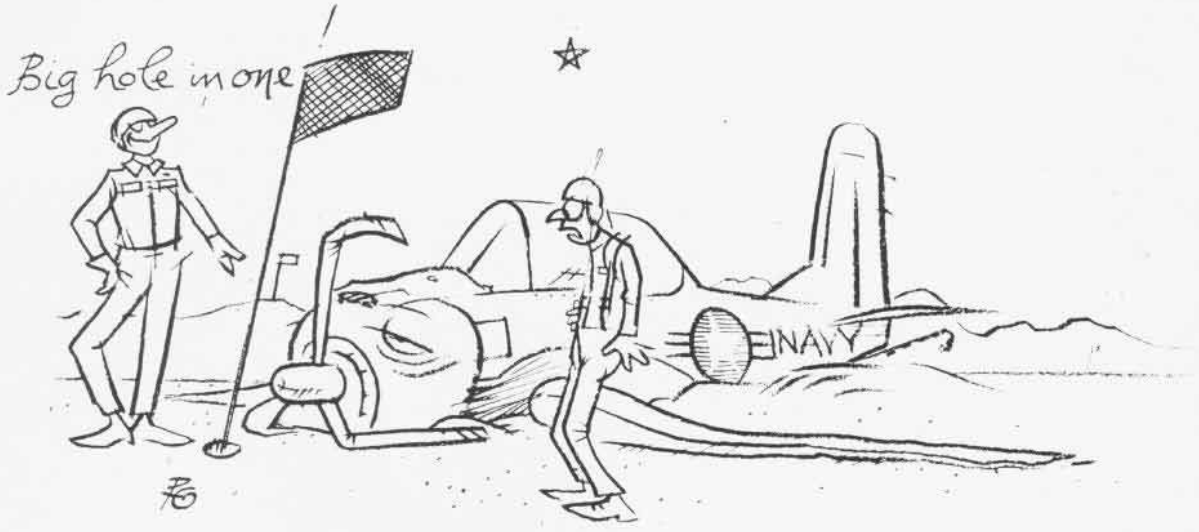
After skidding to a halt, the pilot blew the canopy and he and his crewman had an uncomplicated egress. The pilot accounted for the safety of his back seat observer, who was clear of the aircraft, and established that neither had suffered major injury. Minutes later, he signalled an approaching crash truck with his flashlight.

Both pilot and observer were then transported to the dispensary in the duty crash pickup truck which had arrived from the tower. The two men were examined by a flight surgeon; it was determined that only minor injuries were sustained by the pilot and observer. The aircraft sustained substantial damage.

Grampaw Pettibone says:

Jumpin' Jehoshaphat! This gent is so fouled up, I can't believe it. First of all, 90 knots with one-fourth flaps is non-NATOPS (too slow); then, to top it off, he pulls power to slow up more!! That E-2 in front creates one helluva wind behind it. No wonder our machine acted the way it did.

This pilot is lucky to have escaped with his life; appears to me that this gent was not checked out, in spite of what his papers said, or maybe I should say, was paper-qualified! Anyone who is at 90 knots, one-fourth flaps in a T-28 and pulls power is a mighty poor insurance risk. This lad definitely needs some sort'a re-trainin'!



ILLUSTRATED BY Osborn

Unscheduled Acrobatics

Two lieutenants and their crew were assigned a pilot training flight in the P-3B *Orion*. The aircraft commander was a qualified instructor pilot (IP) and was to man the right seat with the pilot-under-instruction (PUI) in the left, as was customary. The briefing and pre-takeoff activities were uneventful. The weather was clear with visibility in excess of 15 miles.

Following takeoff, the *Orion* climbed to 4,500 feet. The PUI, at the direction of the IP, placed the aircraft in the landing configuration: gear down, flaps full and 130 knots. The IP then informed the PUI that he had an uncontrollable fire (simulated) in the number 1 engine and the engine was feathered. A simulated ditching drill was then conducted with the base altitude being 4,500 feet.

Upon completion of the ditching drill, the aircraft climbed to 4,800 feet, where a simulated two-engine approach and waveoff were to be conducted by reducing power on the number 2 engine, with the number 1 engine still feathered. Gross weight was approximately 85,000 pounds. The approach commenced at 4,800 feet with the aircraft in the landing configuration. At approximately 4,500 feet, the pilot-at-the-controls commenced the waveoff, calling for maximum power on engines 3 and 4. Airspeed was between 120 and 125 knots.

The aircraft began a left turn which the pilot could not correct with aileron and rudder. The IP pointed out that the *Orion* was apparently below minimum control speed. To demonstrate recovery from this situation, the IP reduced power on number 4 engine and the aircraft returned to a wings-level attitude.

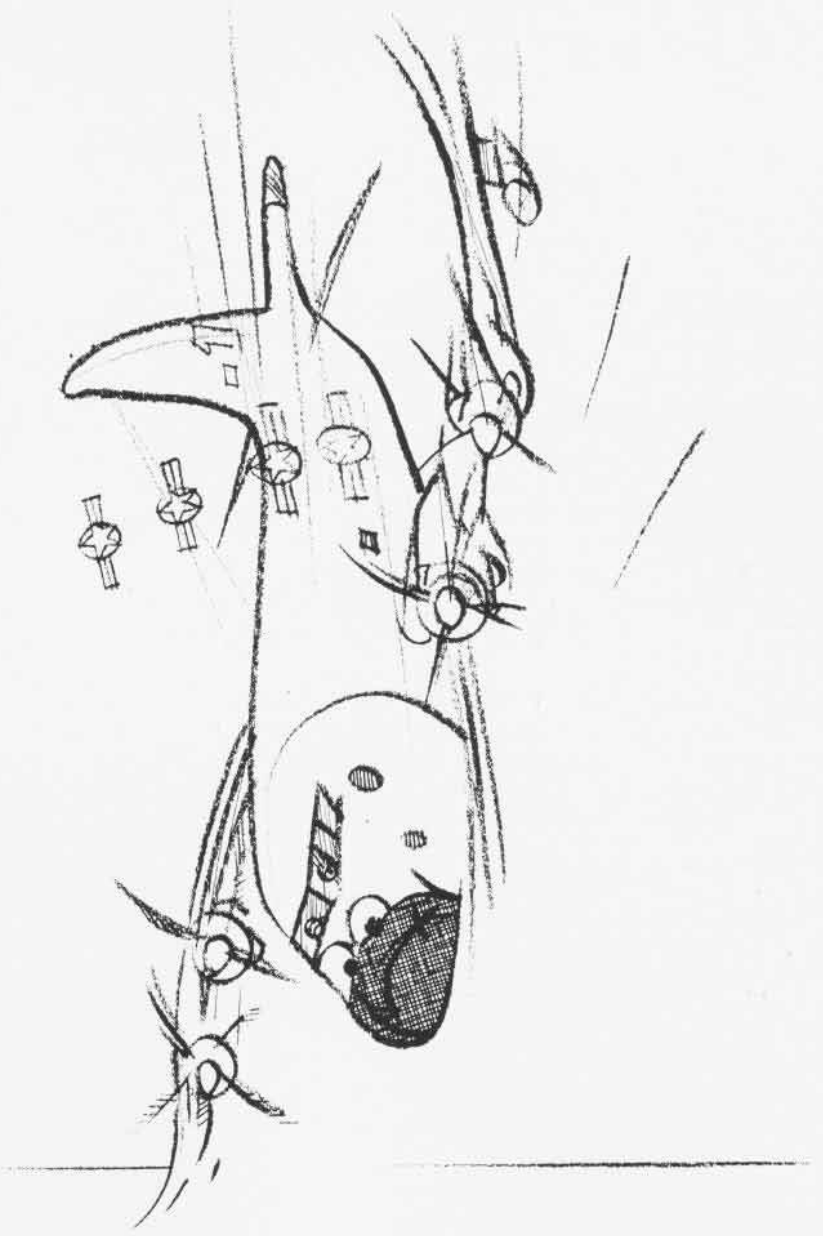
The pilot at the controls called for gear up and approach flaps but airspeed decreased to approximately 110 knots where the IP attempted to take control and lower the nose. Before he could lower the nose, at approximately 105 knots, a moderate to heavy airframe buffet was felt and the aircraft steadily and rapidly rolled to the left to approximately a 90-degree left bank with nose simultaneously falling through so that the aircraft was in an almost *vertical nose-down attitude*, still rolling to the left.

The IP reduced power on all engines, leveled the wings after approximately *360 degrees of roll* and began a smooth pullout to recovery at approximately 1,500 feet and on the same general heading at which the maneuver commenced. The aircraft regained altitude, the number 1 engine was restarted and the flight returned to home base.

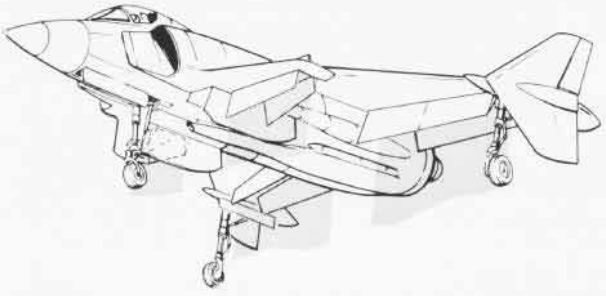
Grampaw Pettibone says:

Egad, lads! Someone could'a got hurt. Can't believe what I just read . . . "a 360-degree roll while headed down" . . . in a P-3 yet! All in all, it sounds mighty hairy to me.

Certainly must give the IP a "check" in the outstanding column for recovery techniques and reporting this near unexplained loss of a P-3! However, can't give him an "outstanding" for allowin' the student to carry the situation as far as it went. Meanwhile, if you want to do aerobatics in the P-3 — Don't! The entire crew are now strong advocates of "travel by modern rail, the AMTRACK system."



Art work courtesy of North American



ROOFTOP AIRCRAFT

By JOC Dick Benjamin

A Mach 2 fighter/attack aircraft that can take off from and land on a rooftop. A plane to fulfill the air-defense and surface-attack missions of the sea control ship. That is the Navy's aim.

Several aircraft companies have submitted proposals for such an aircraft (*NANews*, July 1973, p. 8). Among them is North American Aerospace Group of Rockwell International, which has a $48 million contract to develop and test fly two single-seat, single-engine prototypes of a high performance V/STOL called the XFV-12A.

The XFV-12A is a thrust augmented wing design, with forward canards and semi-delta wings. Its airframe will be about the size of the A-4 *Skyhawk*, and it will be powered by the P&W F401-PW-400 engine.

Vertical lift is developed by mass flow augmentation of engine thrust using an ejector system in the aft portion of each of the canards and wings. During hover and low-speed flight, a diverter valve blocks the engine exhaust and distributes it evenly to the ejector nozzles in each augmenter. Mixing primary (exhaust) air and ambient (outside) air in the augmenters results in large quantities of ambient air being drawn through the augmenters by the ejector nozzles at a ratio of 7.5 pounds-per-second of ambient air to one pound-per-second of primary air diverted from the engine.

The exit velocity at the end of the diffuser flaps is about one-fifth that of undiverted engine air velocity through the tailpipe (400 feet-per-second and 2,000 feet-per-second, respectively).

Because cold air is pulled in to mix with hot primary air before reaching the bottom of the augmenter, the reduction in pressure and temperature gives a low "footprint" — the effect of the exhaust on the landing surface — of up to one-tenth that of other direct jet V/STOL concepts.

Control of the aircraft in vertical flight is achieved by distributing engine air to the four augmenters fore and aft of the plane's center of gravity. Regulating the diffuser flap settings, thus varying the magnitude of the thrust vector from each augmenter, provides attitude and height control. This eliminates the need for a reaction control system for hover and conversion.

"Lift, control and trim are all attained by varying the position of the flaps about six degrees, altering the secondary or ambient air flow and changing the augmentation, enough for simultaneous control about all three axes," says John Fosness, president of North American's Columbus Aircraft Division where some testing has already begun. By controlling the difference in augmentation between the two sides of the aircraft, a very responsive roll performance is attainable.

Conversion from vertical to forward flight is aided by aerodynamic lift generated in large values at low forward speeds by the wing and canard surfaces. The augmenters act as "the biggest blown flaps in the world" during conversion.

The large values of aerodynamic lift increase load carrying capacity at short takeoff distances. "A roll of only 300 feet," says Captain Albert A. Schaufelberger, XFV-12A project manager, "adds an additional payload of 5,000 pounds that can be carried over the maximum gross vertical takeoff weight of over 19,000 pounds."

A mock-up of North American's XFV-12A sits in the Columbus Aircraft Division plant. Vertical control surfaces on the wing tips provide directional stability and control.

Various augmenter components also serve as speed brakes — flaps, elevators and ailerons — which saves on weight since separate control surfaces and actuators are not required.

When the diffuser flaps are fully retracted, they become conventional flight controls for cruising. During high-speed flights up to Mach 2-plus, the canards and wings are lifting surfaces. Directional stability and control are provided by vertical control surfaces mounted on the wing tips, where the main landing gear is also mounted.

According to a North American official, the dogfight capability of the XFV-12A is enhanced because use of the canards and wings gives the maximum load factor with about half the angle of attack required for conventional aircraft, reducing the induced drag at maximum load factor. This gives a sustained G capability superior to that of conventional aircraft, where a download on the tail increases drag at high Gs.

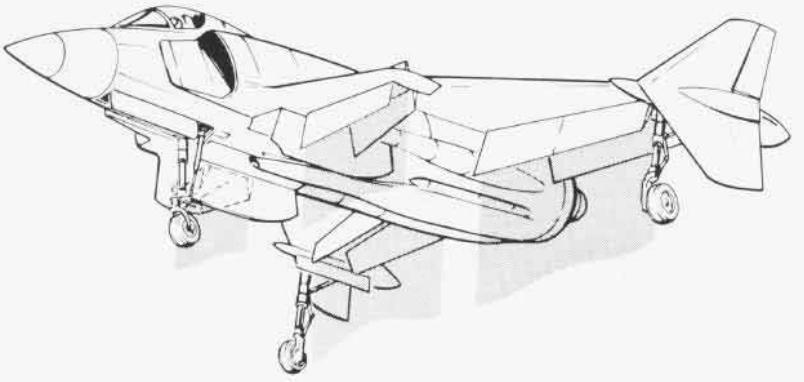
The F401 is being installed in a 100-foot rotary test device at the Columbus plant, where the test rig will be used to verify thrust augmenter performance. Ducted exhaust air from the engine will be blown through the components while the test device moves them at high speeds at the end of the rotary arm. Hard data will be gathered on pressure ratios, temperatures, air flow characteristics, deflection angles and aerodynamic lift.

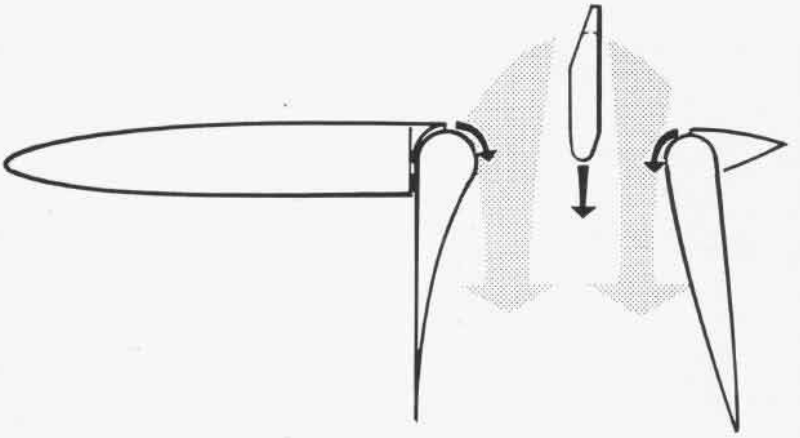
Between 15,000 and 20,000 pounds of thrust, without afterburner, will be blown through the diffuser flaps by the F401 to allow fine tuning of the system before final construction of the airframe prototypes. This method of testing should allow the advanced engine to be installed in a prototype airframe within a year.

Static testing has already been completed using two GE J85 engines mounted above the diffuser flaps at the end of the test rig. The P&W F401 will be mounted on the rig's pedestal at the center of the test arm. Engine air will be ducted through the framework in pipes and pumped over the flaps in the same manner as in the actual aircraft.

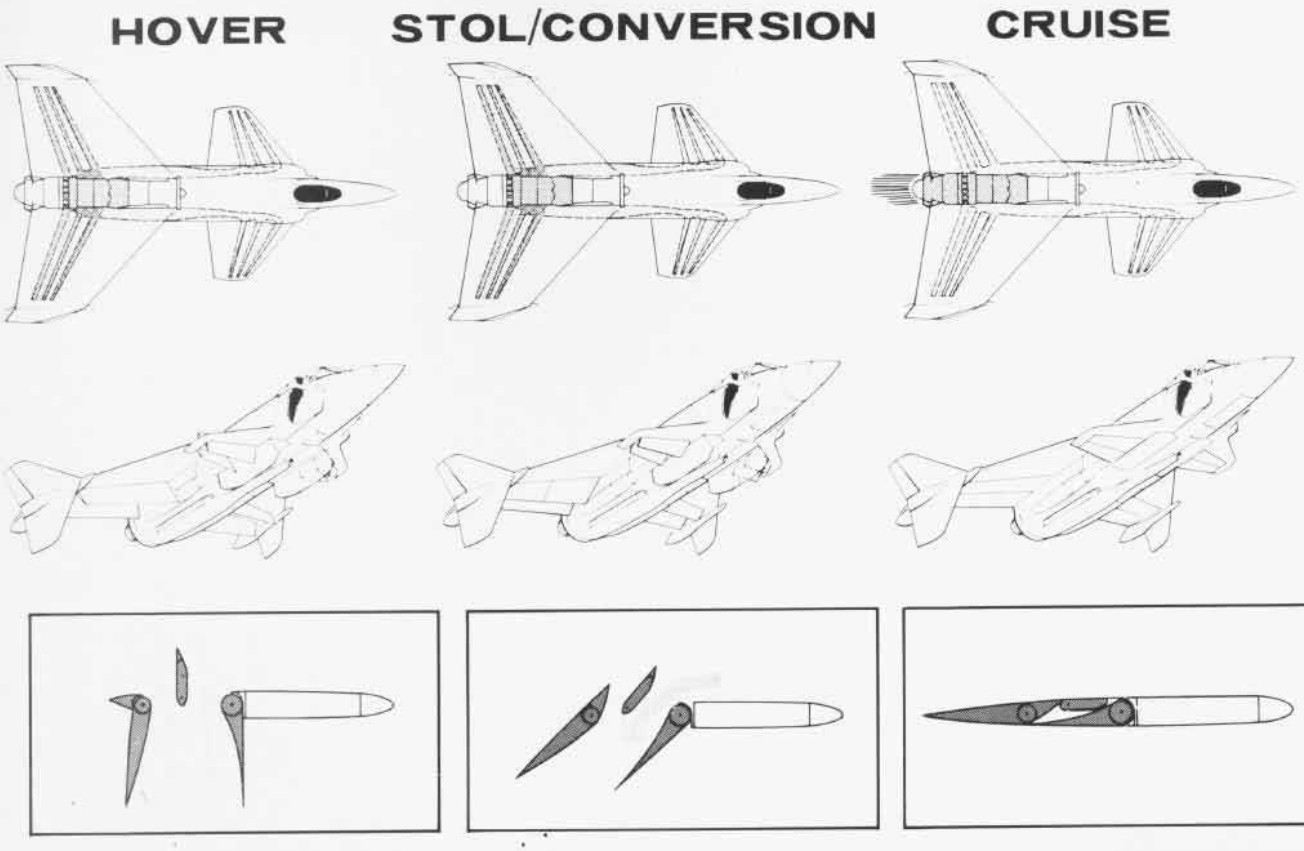
The rotating speed of the test arm has been limited to 60 knots with the J85s located at the end of the rig because of the three-G side-force limitations. Once the F401 has been installed at the base of the rig, the flaps can be

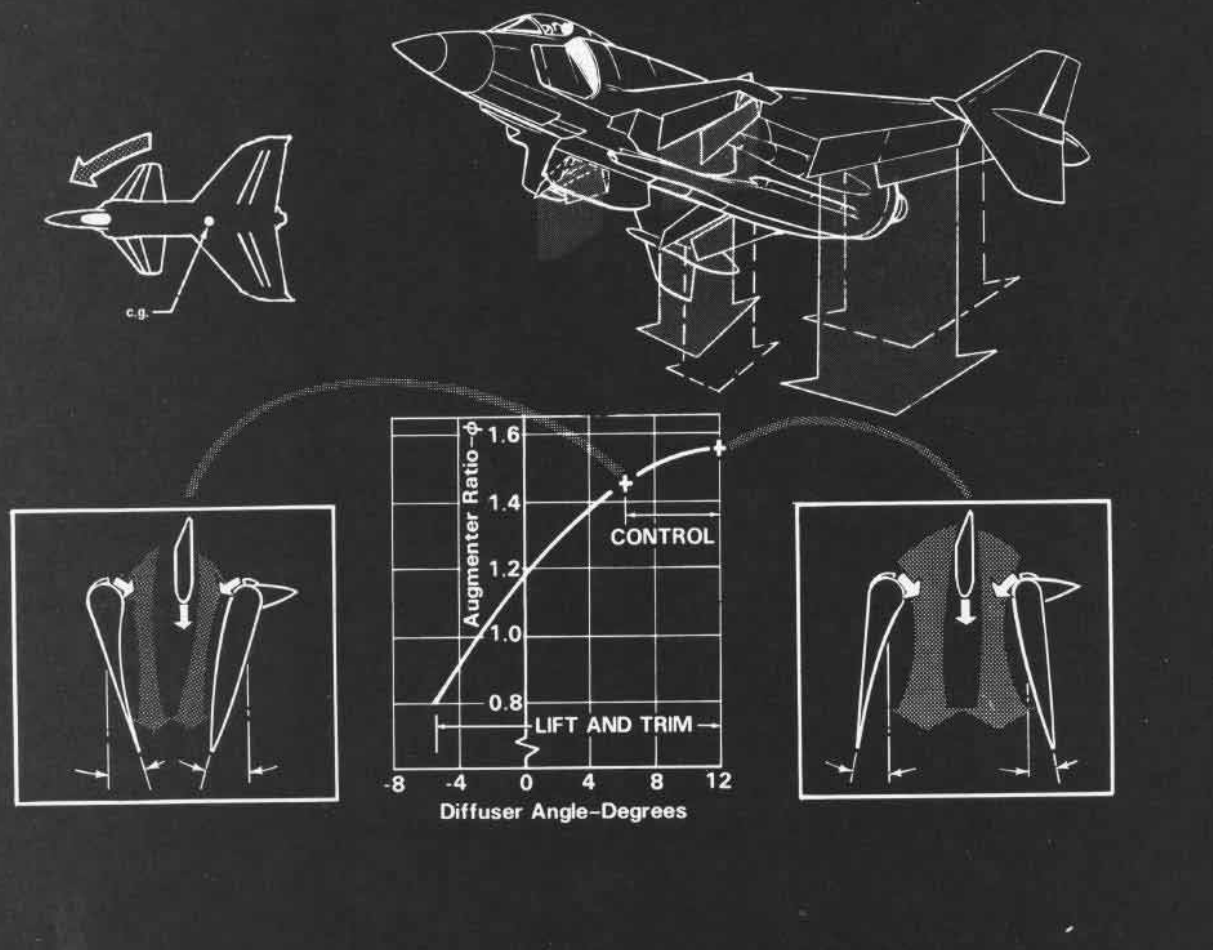
Lift concept of North American's augmented wing is illustrated below; mass flow augmentation of engine thrust from ejectors in the aft portion of the canards and wings provides vertical lift. The drawing at right shows the position of the augmenter flaps during hover, STOL/conversion and cruise. Opposite bottom is control concept.

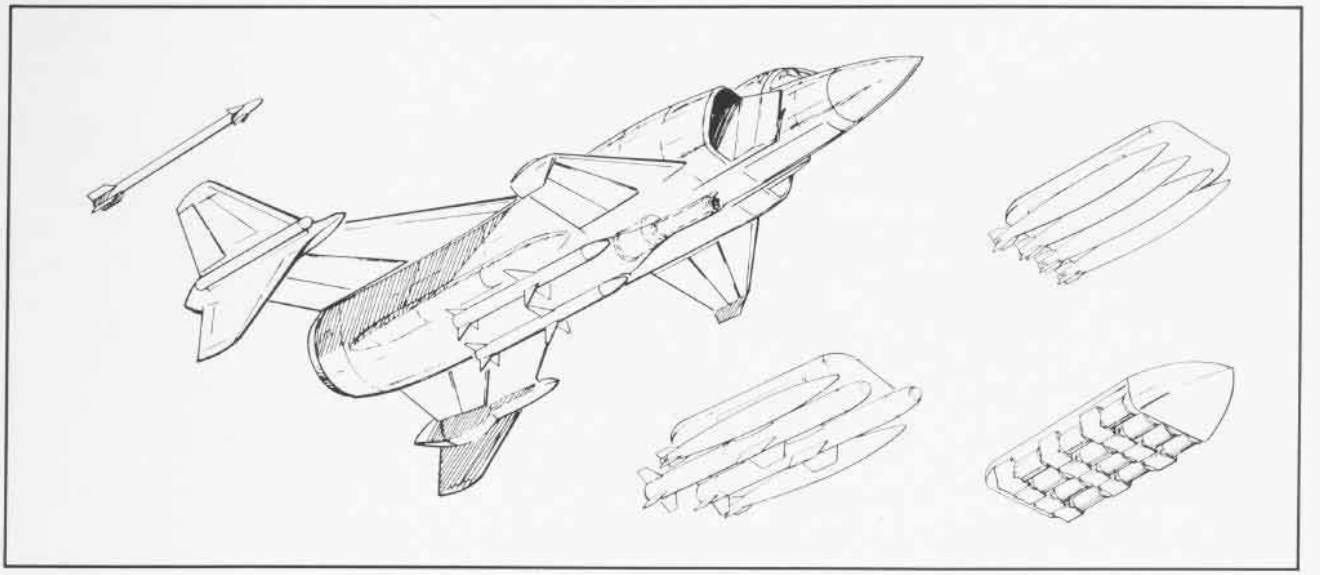




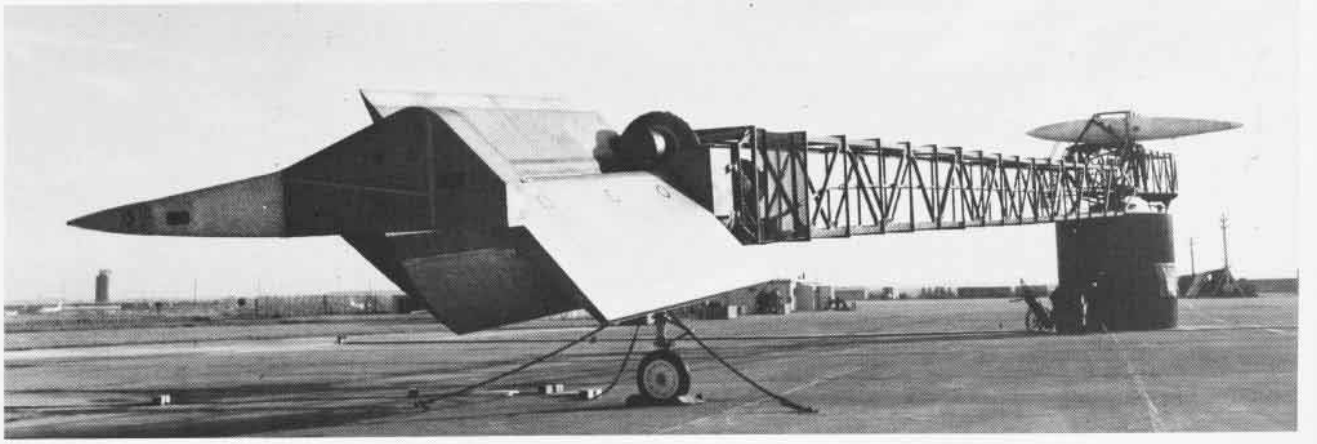
INSTALLED ENGINE THRUST	14,070
AUGMENTATION RATIO	1.55
LIFT THRUST	21,800
TOGW (V)	19,500
T/WT	.72 INSTALLED
	1.12 TAKE OFF

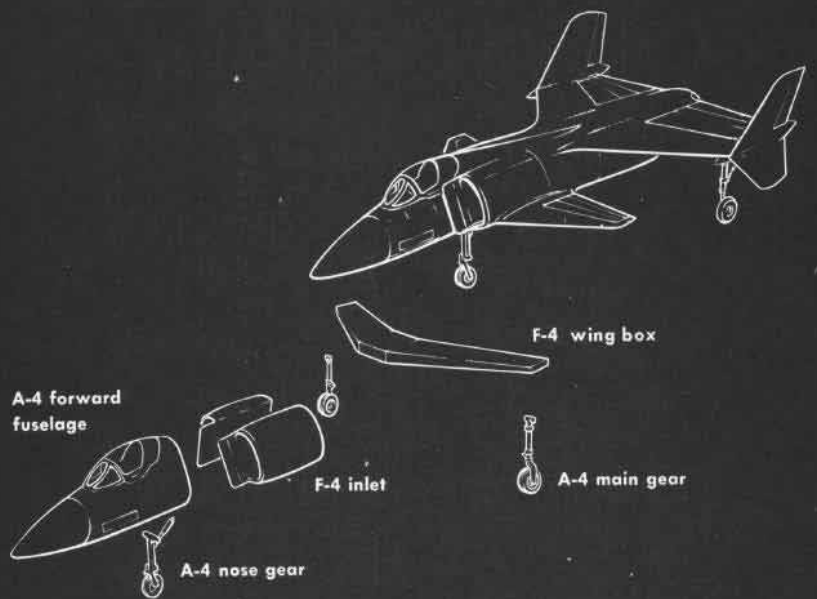

HOVER
STOL/CONVERSION
CRUISE

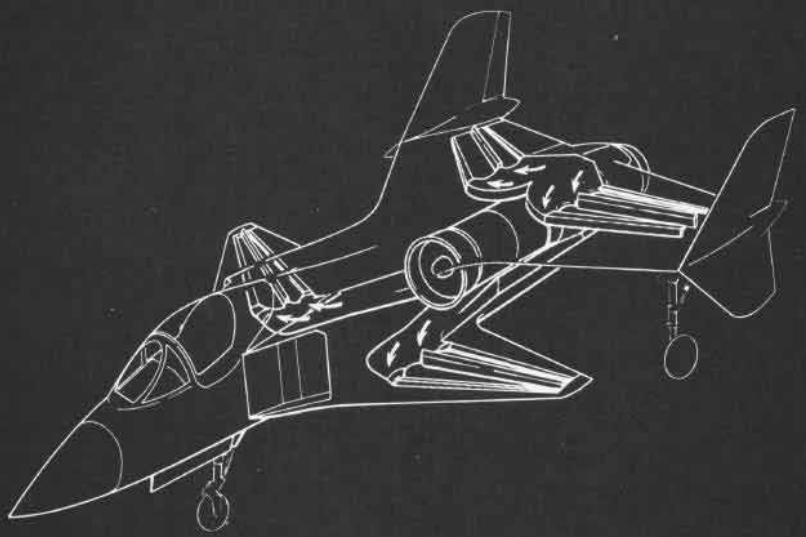

c.g.
Augmenter Ratio-ϕ
1.6
1.4
1.2
1.0
0.8
CONTROL
LIFT AND TRIM
-8
-4
0
4
8
12
Diffuser Angle-Degrees

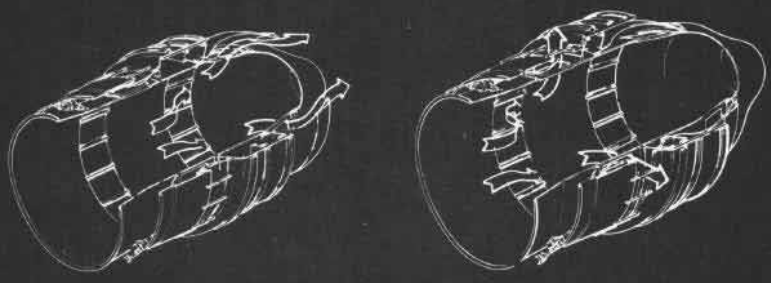


The XFV-12A will be able to carry a varied weapons load, above. At right is a close-up of the augmenter component test fixture which is mounted at the end of the 100-foot rotating arm, below; the rotary test device is being used to verify thrust augmenter parts. The illustrations opposite show the A-4 Skyhawk and F-4 Phantom II assets going into the XFV-12A, top; engine airflow through the ejector system, center; and the airflow through the engine in horizontal and vertical modes, bottom.









tested while the rig turns at 150 knots.

Thrust-to-weight ratio with the F401 will be 0.72 installed and 1.12 at takeoff (Navy specifications call for a 1.05 to 1.0 takeoff ratio). Thrust available after losses will be about 14,000 pounds; lift thrust, 21,800 pounds; and gross vertical takeoff weight, 19,500 pounds. Specifications require an augmentation ratio of 1.55 at the takeoff weight.

Existing aircraft assests are being used where possible to reduce costs in developing the augmenter technology. A-4 forward fuselage, nose and main gear, and F-4 inlets and wing box are being combined with newly designed components to assemble the XFV-12A prototype.

The company is also building a minimum of test hardware normally associated with this type of prototype development, to help conserve funds. A free-air wind tunnel, for example, is being used. The aircraft containing the F401 will be mounted on a railroad flatcar in a flight configuration. Aircraft controls will be put through a full transition to harmonize them while the flatcar travels at speeds up to 70 knots.

North American Aerospace had been studying other V/STOL concepts and developing its own concept for two years before responding to the Navy's request for technology prototypes. The company was convinced, according to Fosness, that there had to be a better way to integrate propulsion than to design an airframe and then figure out how to get vertical flight.

"Taking a look at all aspects of V/STOL technology," he says, "including the most up-to-date augmenter applications completed by the National Aeronautics and Space Administration and the Aeronautical Research Laboratory . . . , we tried to optimize on their effort. Our conclusion was that lift, control and attaining V or STOL should not be applied separately. We looked at it as an integral system and feel we have developed the first truly different approach in 15 years."

North American Aerospace's XFV-12A prototype is scheduled for its first conventional flight test in October 1974, and its first vertical test the following January. If the concept proves itself, the Navy could be well on its way in getting a Mach 2-plus fighter/attack aircraft that can take off from and land on a rooftop.

Philander 201, North Tower. Take Off.

By Ens. Sarah R. Skipper

"Philander 201, North Tower. Cleared for takeoff. Over."

Sounds like a normal everyday solo, but 201 is carrying a student pilot, Ens. Rick Miller, who is a part of an experimental program that may change the complexion of Naval Aviation training.

Rick graduated from Wake Forest in 1972 and entered the Aviation Officer Candidate program at Pensacola the same year. It was there that he was introduced to the *Eagle* program and, with the rest of his class, was asked to volunteer for it. The selection was quite competitive and limited to those with less than 50 hours of flight time.

What is so unusual about the *Eagle* program and how did Rick train?

When Rick and the other 20 students in the program left AOC school, they went to Training Squadron Six at NAS Whiting Field,

Opposite, preparing for takeoff, this time with the instructor in back. Here, solo.

At right, Williamson explains the vital importance of the checklist in preparing for flight. A preflight begins with the instructor explaining to his student how to check the engine and prop dome for oil leaks, below. At bottom, Miller learns the difference between front and rear cockpits.

Fla., instead of to Saufley Field.

What is the significance of that?

The *Eagle* program eliminates the T-34 *Mentor* primary training at Saufley and replaces it with training in the heavier, high performance T-28. This is the equivalent of giving the student his first flight training in an aircraft comparable to an early WW II fighter.

When Rick Miller checked aboard VT-6 in March 1973, he reported to the paraloft where he was given his flight gear. From there on, it was classes and flying, flying and classes.

He met his instructor, Ltjg. Scott Williamson, at the very start of his training. Scott graduated from San Diego State College in 1970 and was commissioned at that time. He went through aviation training and received his wings in multi-engines in December 1971. Reporting to VT-6 in January 1972, he taught transition, precision/acrobatics. He began working with the *Eagle* program in February of this year and found it as much a challenge for him as for his student.

The *Eagle* program is much more demanding of the instructor because he must be able to instruct in all phases of training. In the *Eagle* sylla-

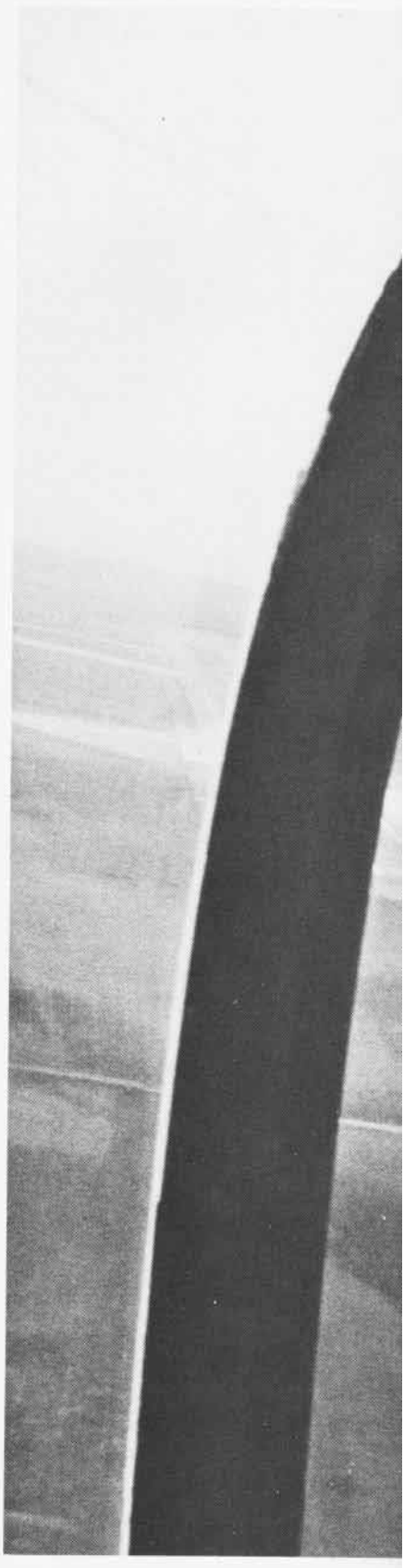
Below, the student is strapped into the cockpit by his instructor in preparation for his first instrument hop. Prior to any training, the student, on reporting to Training Squadron Six, goes to the paraloft for his gear. Miller is fitted with a survival vest, bottom.

bus, the required hops are not flown phase by phase; all phases are integrated. In short, Ltjg. Williamson is Rick's instructor from the time he checks aboard until he has completed his training at VT-6.

This integration of training allows a student to fly similar to the way a pilot flies. It allows him to study a little of everything along the way, integrating all of the skills of aviation. He is able to appreciate more of what a pilot encounters than if he flew each phase separately. This can also make training a little more difficult for the student as he must be prepared for either a basic or an instrument hop. A student never knows whether he will be in the front or back seat when he arrives for his hop each day. But integration of contact and instrument training is resulting in a more rounded and proficient student.

Rick's initial reaction to the program was that it was overwhelming. He had never flown before and had only been up in a Piper Cub once. But now he says he enjoys it more than the students in the normal syllabus. "It's really a thrill getting into the aircraft for the first time."

Scott Williamson has found that the



The student (left) receives congratulations from other students and his instructor after successfully completing his first solo flight. At right, the student solos, turns on to final and comes in for a landing.

most difficult but challenging part of the program, to him as an instructor, was getting his students to "think" in the airplane. At first he found himself instructing and also thinking for his students. "Slowly they developed, but once over the first hump, they are just the same, if not better, than the other students."

Interesting to Scott is the fact that the instructor is solely responsible for the habits and techniques, both good and bad, that the student will use throughout his entire career.

The student-instructor relationship, according to both men, is excellent. For Rick it means that the instructor always knows his limitations and acts accordingly. Scott says, "You put more of yourself into it, and you worry about them more because they are your responsibility. *All* they learn comes from you."

The solo hop for an *Eagle* student is an experience and a sensation not soon forgotten by either the student or his instructor.

Rick says, "My first solo was fun, but I had to watch everything closer than on a dual hop since there was only one pair of eyes looking. I was relaxed but felt more pressure. And then when I landed, I came up short of that crash truck in Brewton! But what a feeling of accomplishment! Such a large aircraft to handle!"

And his instructor confides, "When your student solos you feel a certain satisfaction. Yes, I really am proud of my student and he should really feel a great sense of accomplishment; it is difficult to fly the T-28."


VTG

NAVAL AIRCRAFT

The F11F-1 (later F-11A) *Tiger* is best remembered as Grumman's first supersonic fighter and as a top performer for many years with the *Blue Angels* before they transitioned to the current F-4's. It may also be remembered by some for the notoriety gained when a *Tiger* shot itself down during high-speed, gunfiring development tests. In its modified F11F-1F form, with higher powered engines (J-79s instead of the regular J-65s), it achieved distinction as the first airplane to capture the world's altitude record using zoom climb techniques (76,831 feet on April 16, 1958, followed by 76,939 on April 18).

Today the *Tiger* has been superseded on Grumman's production lines by the F-14A *Tomcat*, continuing the long line of Grumman Navy fighters. Only two *Tigers* remain in flight status for use in a program testing an advanced concept for use in future fighters.

The *Tiger* design began as a modernized and greatly improved version of the F9F-6 *Cougar*; like the A-4A (A4D-1), using the Wright J-65 axial-flow engine and being built as a minimum size airplane. As the design progressed, it was revised to incorporate an afterburner-equipped J-65, and acquired its notable coke-bottle-shaped fuselage, based on the "area rule" design for improved supersonic performance.

First flight of the *Tiger* as the F9F-9 took place in July 1954. Following flight development, during which the airplane was redesignated F11F-1, BIS trials began in late 1956. Then came first squadron service in March 1957. By this time the F8U-1 (F-8A) *Crusader*, with its much higher speed and overall performance, was also entering squadron service and F11F-1 production was limited to just over 200 airplanes.

These served well with VF-21 (later VA-43) and VF-33 in AirLant and VA-156 (later VF-111), VF-191, VF-121, VF-51 and VF-211 (later VF-24) in AirPac for as long as four years. Because of the *Tigers'* limited supersonic performance and short cycle time they were replaced by *Crusaders*.

In 1958, *Tigers* were first assigned to the advanced training command and continued to serve as advanced trainers — as well as with the *Blues* — after being phased out of the fleet. In these roles, their excellent flight characteristics were used to advantage until they were phased out of service late in 1968.


F11F-1F


F11F-1

F11F-1

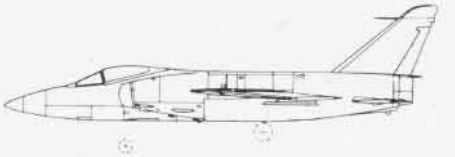
F11F-1

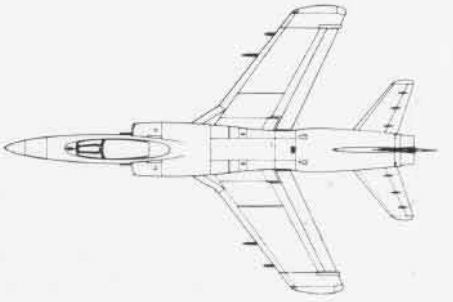
GER

F-11A and F-14A

F9F-9

Wing span		31′7½″
Length (F11F-1)		46′11¼″
Height (F11F-1, on ground)		13′2¾″
Power plant		thrust (mil/AB)
F11F-1	J65-W-18	7,450/10,500 lbs.
F11F-1F	YJ79-GE-3	9,600/15,000 lbs.
Maximum speed (clean, combat altitude, AB)		
F11F-1		1.1 MN/632 kts. at 35,000′
F11F-1F		2.0 MN/1,150 kts. at 35,000′
Cruise speed (clean cruise altitude)		
F11F-1		502 kts. at 38,000′
Service ceiling (clean)		
F11F-1		41,900′
Combat radius/mission time (two 150 gal. tanks)		
F11F-1		420 nms/2.1 hrs.
Armament (F11F-1)		four 20mm guns 2 or 4 Sidewinders





LIFE LINES

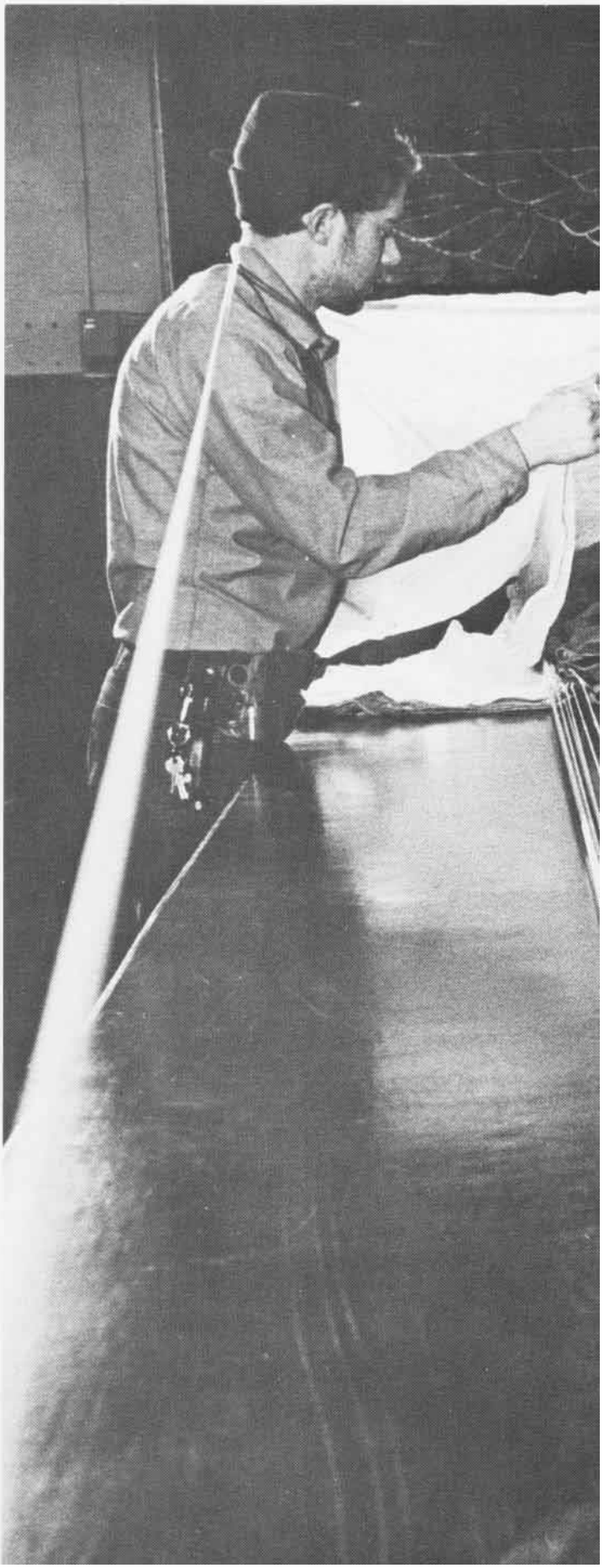
Story and Photos by PH1 John R. Sheppard

History records that one of the first naval ratings was that of Sailmaker. In his dimly lit and confining compartment below decks, the sailmaker used the tools of his trade — heavy, straight and curved needles, his palms and beeswax — to repair and make the ship's sails.

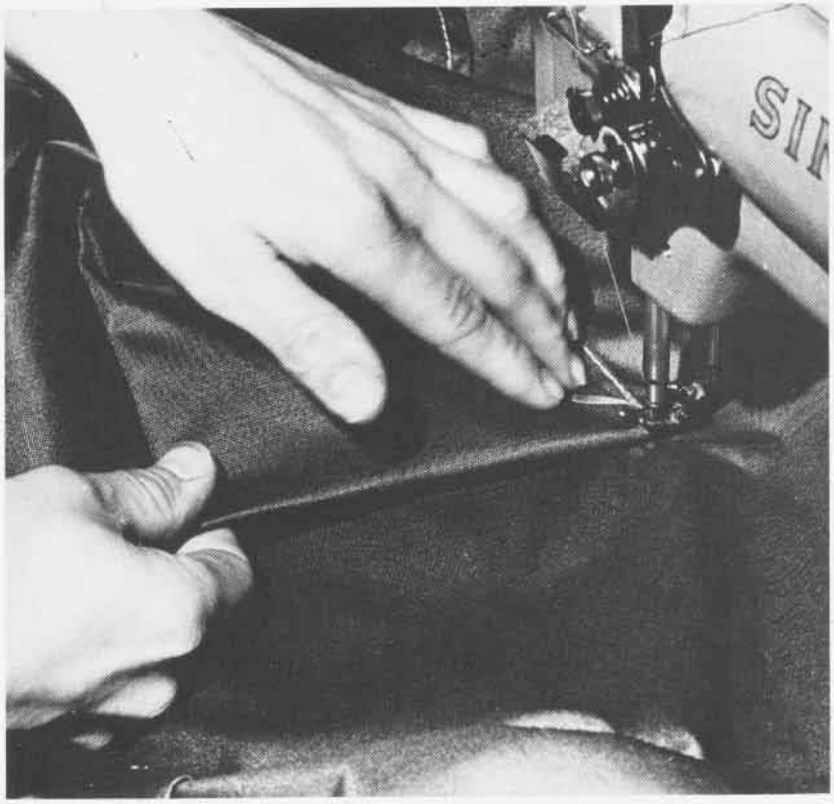
But the sailmaker has slipped into the pages of history and today Naval Aviation uses the similar talents of the parachute rigger or, more correctly, the aircrew survival equipmentman.

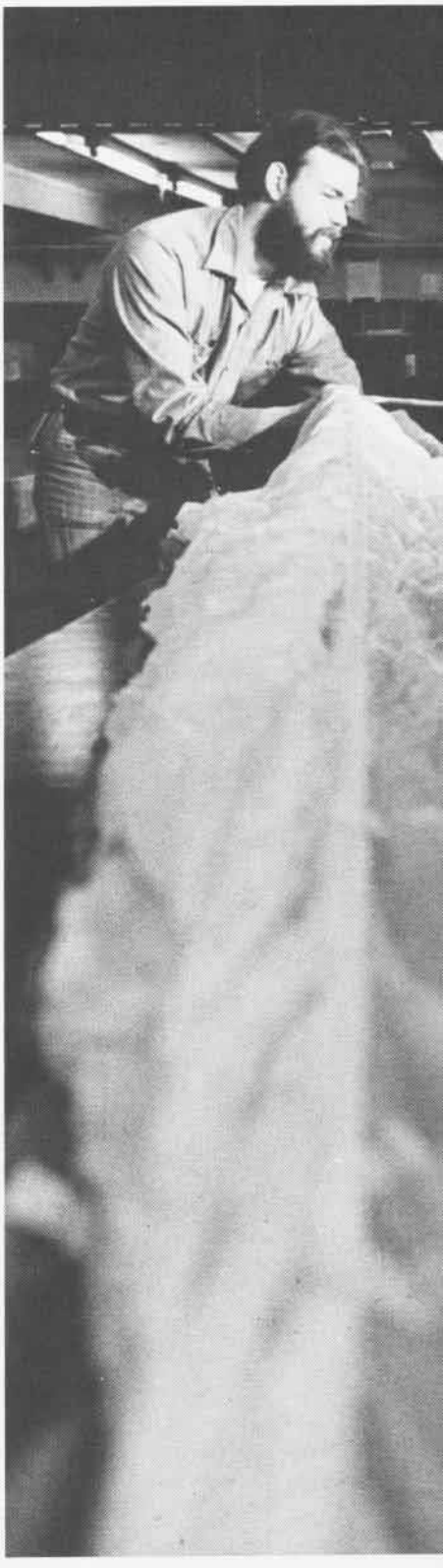
From the earliest days of Naval Aviation, men have been assigned to pilot safety. At NAS Norfolk, Va., the 20 "riggers" attached to the paraloft modify, inspect and repack 20 different types of parachutes; sew various materials into flight bags and tie-down straps; check and patch life rafts and vests; and maintain oxygen regulating equipment.

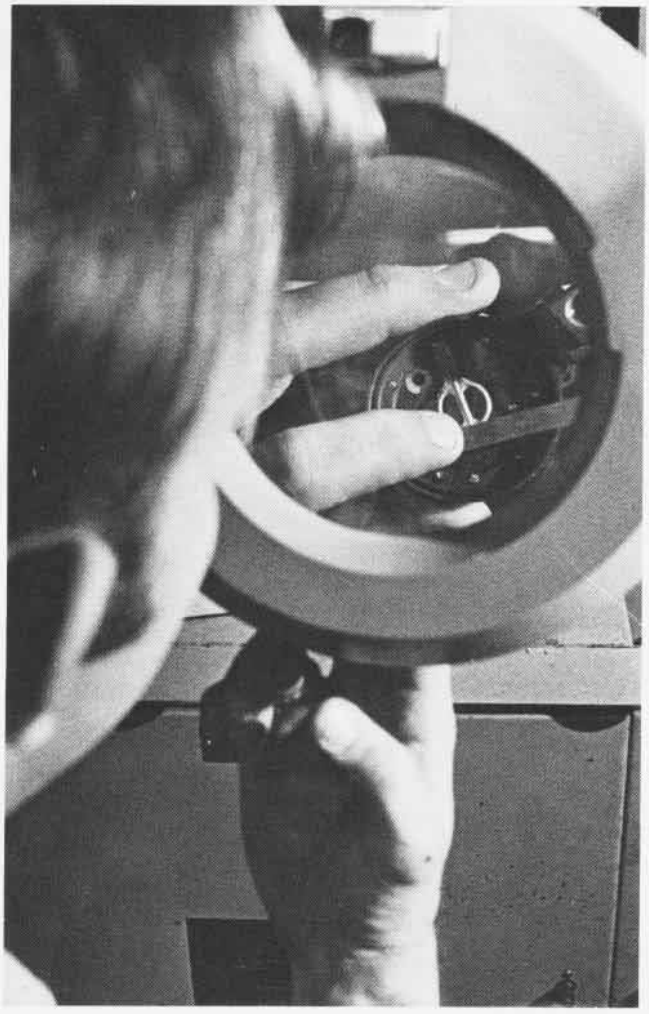
At right, two men, four hands, all working together, easily sort out each shroud line and canopy panel and place them in order.




AMER-glas
FILTERS

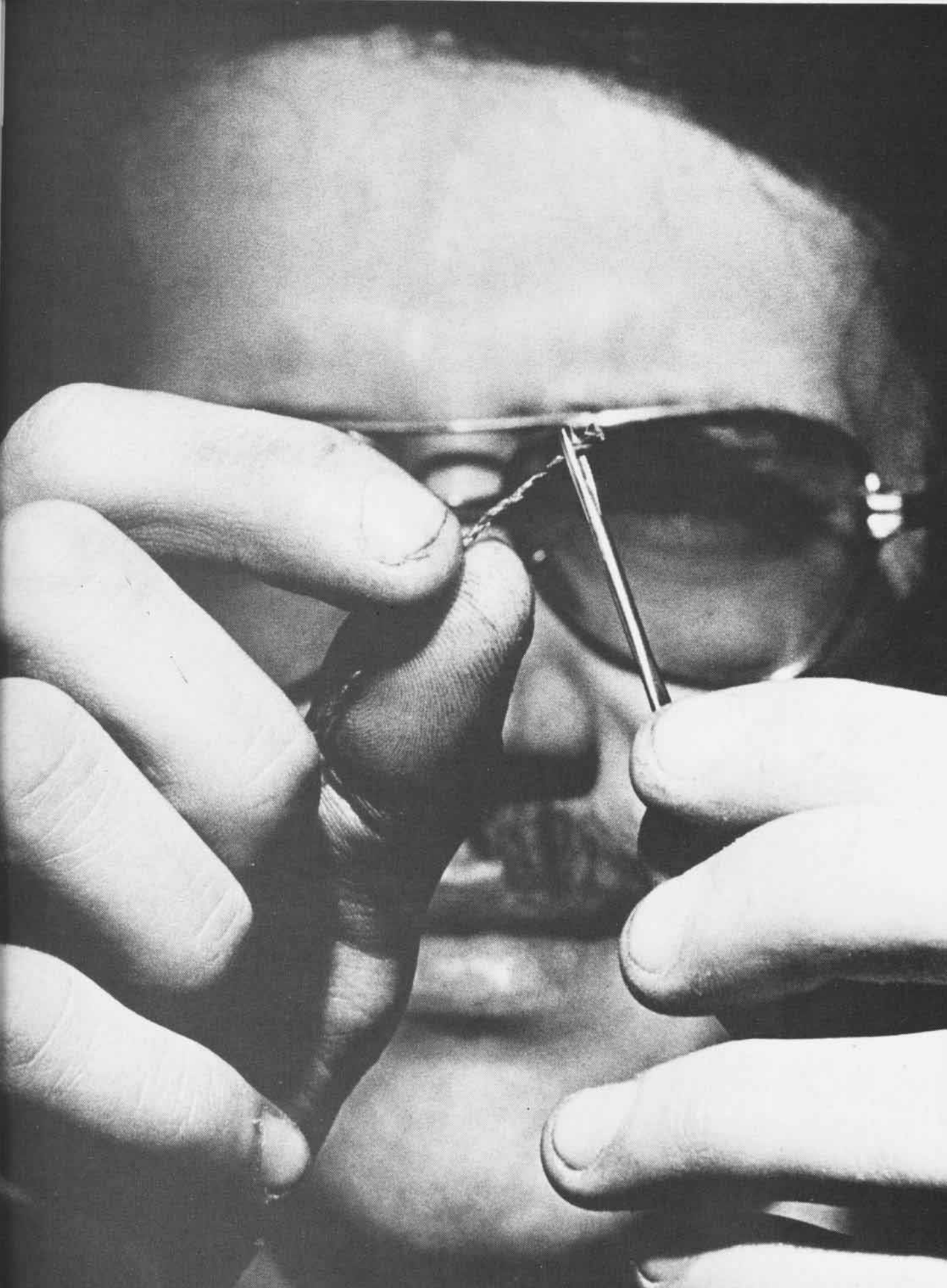






Packing the mass of shroud lines, rip-stop chute material and other paraphernalia, left, into a pack 1½x3½ feet and less than five inches thick, opposite top, is no easy task. Modern fabrics, like nylon and naugahyde, are formed on a sewing machine, opposite bottom. And routine maintenance on an oxygen regulator is slow and painstaking work, above.

Parachute riggers measure nylon material to be cut and sewed into an aircraft seat, above. Three hands pull neatly arrayed shroud lines through holding loops so lines will not tangle when the chute is deployed, left. It takes 30 minutes for two men to pack a 20-foot diameter canopy and hundreds of feet of shroud lines. Although today's equipmentman uses modern sewing machines, one can often see a rigger squinting to thread a needle, like his counterpart of 200 years ago, right.



ABs on TAP

Aviation boatswain's mates (ABs) have been referred to as the backbone of Naval Aviation. They handle, launch, recover and fuel high-speed naval aircraft at sea and ashore. They can also, if called upon, rescue a pilot from a raging fire within life-saving seconds.

At the Naval Air Technical Training Center, Lakehurst, N.J., personnel from fleet and recruit training units receive training in basic or advanced AB skills. Students first learn general fundamentals of Naval Aviation and then complete a week-long course in basic fire fighting at the nearby Philadelphia naval station.

The training then breaks into three separate subspecialties: launch and recovery technician (ABE), fuels specialist (ABF), and aircraft handler (ABH). After completing their specialized training, the students are reunited for final graduation exercises and then transferred to operational squadrons or air stations.

To more effectively teach their students, AB school instructors make use of a training aids platform (TAP).

TAP is a one-third scale model of a carrier flight deck where aircraft handling and flight deck operations can be taught without going to sea. The 400'x120', three-story structure is housed in a hangar at NAS Lakehurst. It is complete with catapults, arresting gear engines and an optical landing system with Fresnel lens. Because steam power is not available in the hangar, the catapults, although replicas of steam-powered gear found in the fleet, are electrically driven.

A box-like structure resembling a carrier's island gives TAP a more realistic appearance. The structure is complete with bridge, mast and stack, and is used to observe flight deck evolutions and evaluate student drills.

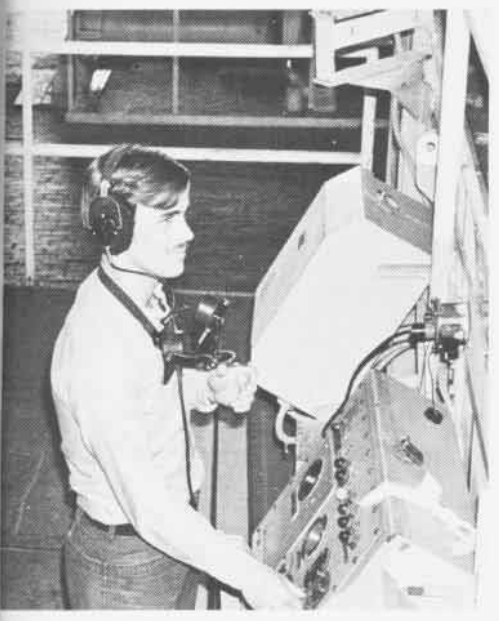
Internally, TAP houses the launch and recovery equipment normally found aboard modern carriers. There are machinery spaces for practical work as well as classrooms for formal instruction.

Although aircraft were not originally intended to be used on TAP, renovations to and strengthening of the decks today permit training on the platform with several aircraft types, including both jets and props.

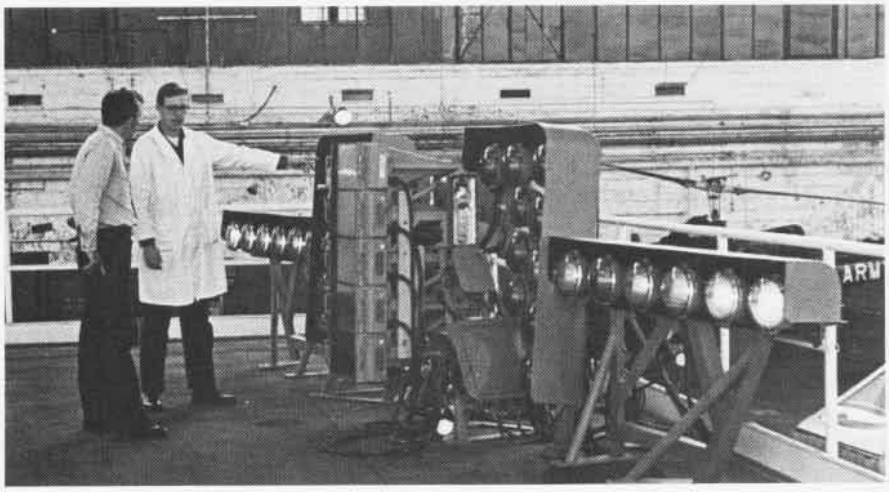
Ever-changing flight deck equipment, inventions, innovations and improvements demand that construction on TAP never ends. The latest additions to the platform include a C-13 training catapult and three aircraft refueling stations.

TAP never gets underway, nor are aircraft actually launched or recovered, but it helps the student ABs learn the skills needed to carry out their demanding and vital roles aboard today's modern carriers. And they learn these skills not on a hangar deck in an aircraft carrier, but on a carrier deck in a hangar.

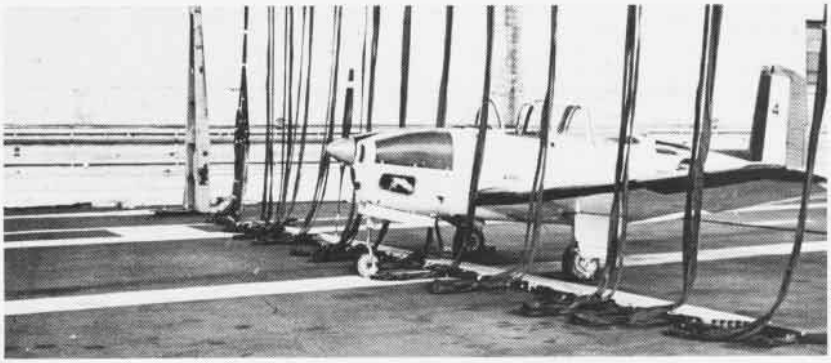
By Ens. D. T. MacDonald



Student ABs train on the TAP at Lakehurst. AA Kenneth L. Sherwood works with deck edge control starter for C-11 aircraft catapult, top left. AA Larry J. Callum learns about the JP5 centrifugal fuel purifier, top right.

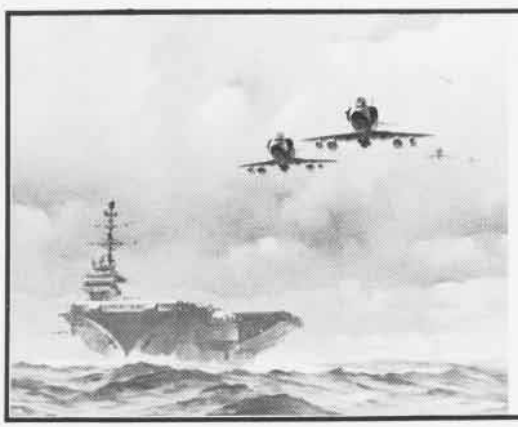


An instructor explains the inner workings and hidden mechanisms of the Fresnel lens, right. AA Collum learns about hot refueling, using the probe adapter, from instructor, ABF1 Sherman L. Padgett, below.



Student ABs learn about the MK-7 barricade, left, as well as about fire fighting, above.

ABF1 Padgett shows AA Collum how to use the AEL-MK3 solid contamination fuel tester, top left. Students become acquainted with the A-4 launch sequence, top. Below decks in the TAP, AA Sherwood receives instruction in using the catapult control console from instructor ABEC Ronald L. Fagg, above. AA Carl C. Zaske learns taxiing and spotting evolutions on the TAP, left.



at Sea with the Carriers

Lexington (CVT-16)

Not all jets that land on U.S. Navy aircraft carriers are piloted by U.S. Naval Aviators. The Royal New Zealand Air Force was represented by Squadron Leader Dick Lawry when he landed aboard *Lexington* in an A-7E *Corsair II*. Sqd. Ldr. Lawry has been flying with VA-122, NAS Lemoore, Calif., in a two-year exchange program, serving as assistant ops officer and an instructor in the A-7E. He finds a "world of difference" between Naval Aviation and the air force flying he was accustomed to. Next February, Lawry heads back to the Royal New Zealand Air Force.

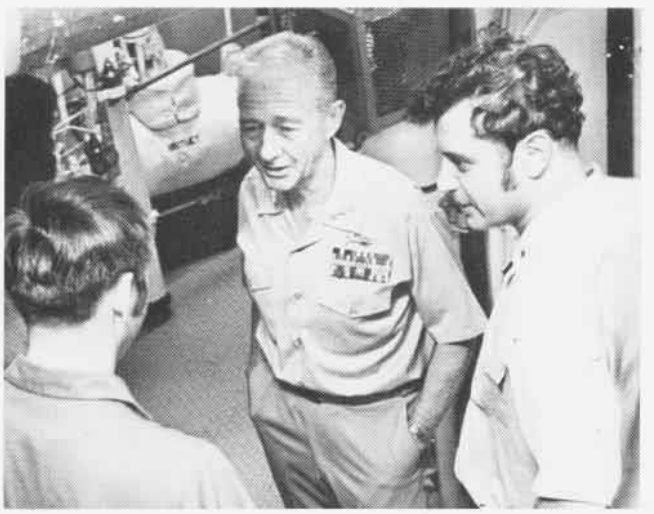
Commander Robert W. Hepworth, safety officer aboard *Lex*, recorded his 1,100th arrested landing on June 10 when he flew a C-1A aboard the carrier — 542 of his landings were made on *Lexington*, and all have been accident-free.

Franklin D. Roosevelt (CVA-42)

Carrier catapult launchings and arrested landings put tremendous amounts of stress and strain on aircraft. Recently, a group of 15 aircraft tire contractors visited *FDR* to observe the demands that are placed on aircraft tires. "The Navy believes all aircraft tires are retreadable," says John Wagoner of the Naval Air Systems Command. "Our job is to see how much punishment aircraft tires take and then to decide how we can improve the quality of the tires produced." The Navy requires nondestructive testing before it will accept the tires. This is an examination using a form of testing, such as an ultrasonic technique, which finds voids or flaws in the carcass of the tire without having to cut — and thus destroy — it to find the flaw. The tire is tested and left intact. The group was impressed by the extreme stress of carrier operations and the need for both a superior retreaded tire and improved testing techniques.

Inchon (LPH-12)

In 1972, while *Inchon* was deployed in the Mediterranean with the Sixth Fleet, 1st Lt. John M. Kelleher, USMC, brought a helo down for the LPH's 6,000th helicopter landing. In 1973, just a few months ago, the same pilot made the 16,000th landing aboard the same ship, now with the Seventh Fleet in WestPac. Lt. Kelleher



Roosevelt's Lt. Bill Moore explains the carrier's catapult system to aircraft tire contractors, left. Vice Admiral Frederick Michaelis visits engineering spaces aboard Kennedy, above, while on a European tour.

is attached to the HMM-164 SAR detachment deployed aboard *Inchon*.

Constellation (CVA-64)

At anchor in the port of Hong Kong amid the many thousands of small commercial craft and junks, *Connie* personnel were enjoying a short period of rest and relaxation and time for family reunions. During this inport period, in a ceremony aboard, Commander Paul F. McCarthy, Jr., became Commander, Attack Carrier Air Wing Nine, when he relieved Commander Thomas Campbell Watson, Jr., who reported to the Industrial College of the Armed Forces, Washington, D.C.

Independence (CV-62)

The Norfolk-based carrier recorded two firsts as she began her ninth Mediterranean cruise. Both firsts involved embarking 97 teenage boys — sons of *Independence* and *Forrestal* crewmen and NJROTC cadets. The boys sailed from the States to the Med on *Independence*, on her way to relieve *Forrestal*. At Rota, Spain, they transferred to the latter for the return trip.

Flight operations were probably the most impressive feature of the cruise for the dependents. The cadets, representing 21 schools in the Fifth Naval District, were split into five groups, each spending a day in briefings on operations of the carrier's various departments.

John F. Kennedy (CVA-67)

Kennedy was the scene of a change-of-command ceremony in which Rear Admiral D. L. Freeman, coming from his previous assignment as Deputy Commander, Naval Striking and Support Forces, Southern Europe, relieved Rear Admiral D. D. Engen of command of Carrier Division Four. RAdm. Engen is now Deputy Commander in Chief, U.S. Naval Forces, Europe, headquartered in London.

Vice Admiral Frederick H. Michaelis, Commander, Naval Air Force, U.S. Atlantic Fleet, paid a three-day visit to *JFK* as part of a 14-day tour to Navy commands and activities in Europe. The visit included briefings on the carrier's Mediterranean operations and meetings with various groups.

VAdm. Michaelis presented *Kennedy* with the ComNavAirLant Golden Mike Award for internal relations. He also cited the *Clansmen* of VA-46 for accident-free operations from April 1971 to April 1973. During this period, *Clansmen* totaled over 12,000 flight hours in their A-7B *Corsair IIs*. Embarked aboard *JFK* for 15 of the 24 months, the squadron amassed nearly 4,000 day carrier landings and over 1,500 night carrier landings without an aircraft accident. VAdm. Michaelis noted that safety is becoming a matter of survival for the Navy. "In a period when we are not buying many airplanes, we can only replace our losses if those losses are extremely low." The admiral also stated that he is trying to hold Atlantic Fleet carrier deployments to six months.

When *Clansmen's* operations officer, LCdr. John M. Waples, logged his 900th carrier arrested landing, he also became a *Kennedy* double centurion.

Hancock (CVA-19)

The Navy's oldest attack carrier has a new skipper, Captain Philip J. Ryan, who relieved Captain Albert J. Monger on June 16. Capt. Ryan came from command of USS *Juneau* (LPD-10). The change of command took place while *Hancock* was in port in Subic Bay, Republic of the Philippines, on her first peacetime WestPac deployment in over eight years.

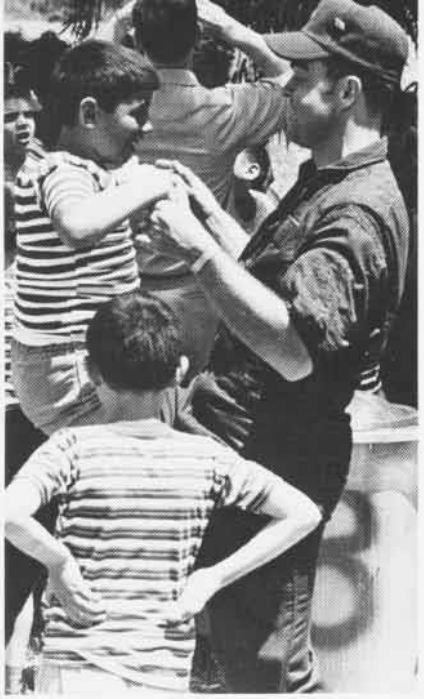
The day before, Capt. Monger piloted a TA-4 *Skyhawk* aboard for the carrier's 180,000th arrestment.

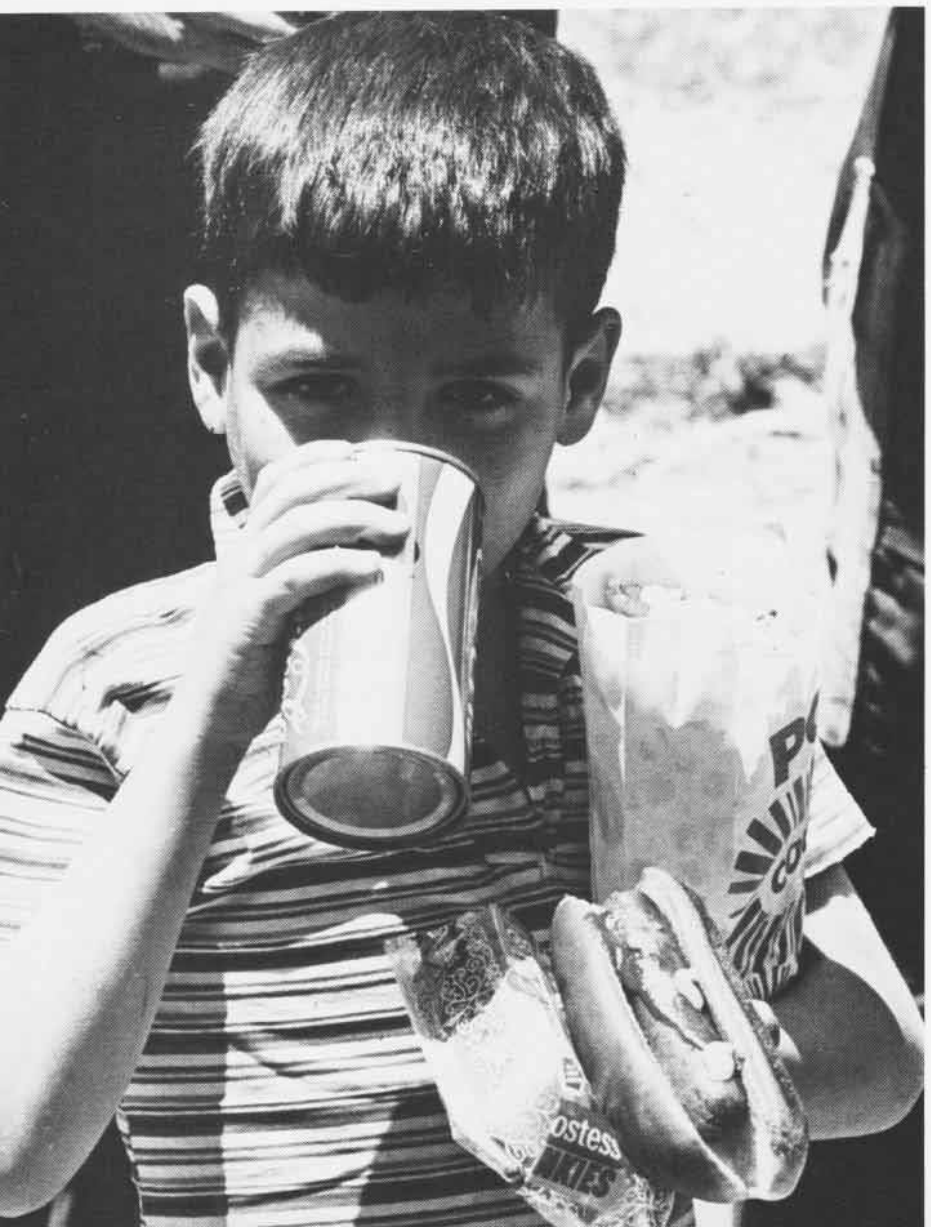
Our Foreign Correspondent

For the first time in the history of the Royal Netherlands Air Force, U.S. Navy aircraft took part in the static show on the occasion of the 60th birthday of our Air Force (July 1st). The air and static show took place on June 30. There were over 200,000 visitors. The contribution of the U.S. Navy to the static show, two A-7Bs of VA-46, caught much of the attention of the visitors. These two aircraft were flown by Commander "Bear" Taylor and Lt. Fred Lentz from Crete, directly to Deelen AFB, Holland, via Naples for a refueling and navigation stop. VA-46 is stationed aboard the carrier USS *John F. Kennedy* (CVA-67), now on a Mediterranean deployment. The squadron has had a very good year and has flown without any accidents, working toward an E.

I hope this information will be of use to you for your column "At Sea with the Carriers."

J. C. en C. van der Kemp
Vinkenpolderweg 24
Alblasserdam 3230, Holland





Picnic Time

By W. Peele

During its sojourn at NAF Sigonella, Sicily, Patrol Squadron 23 was literally invaded one day in May when 95 boys from the Institute Pecorino in nearby Santa Agata Li Battiati (Catania) visited the *Seahawks* for a day of tours, food, games and lots and lots of questions, few of which the hosts could understand, much less answer.

As the energetic youngsters arrived shortly before noon, they were first taken to a squadron *Orion* for a walk through the huge machine. It was obvious that this was what they had been looking forward to. Emerging from the cabin of the P-3, after some gentle persuasion, they were jumping and shouting, anxious to see more, and still not believing that they had been inside an airplane.

After looking at practically every aircraft on the VP line, including the station helo and C-117, the excited boys were given an all-American lunch of hot dogs, cupcakes and popcorn.

As the kids consumed the goodies, one enthusiastic *Seahawk* produced a Polaroid and began making *fotographici instanti* much to the delight of the boys and their chaperones. Everyone had his photo made at least five times before the officer depleted his abundant supply of instant film.

Soccer occupied the afternoon for some of the boys and squadron men as the youngsters showed their hosts how the game is played. Some groups tried volleyball and others just walked around, but everyone found plenty to do.

As the buses pulled up in front of the admin building to take the boys home, some of the laughter and commotion subsided as the adults rounded up the group to begin their return trip.

None of the visitors spoke English and few of the squadron men spoke Italian, but words weren't needed for the occasion. Ninety-five smiles can only mean one thing.

RAVE

Investigation of a new helicopter night vision system is literally the RAVE at Naval Air Test Center, Patuxent River, Md. RAVE, an acronym for Research Aircraft for Visual Environment, utilizes a television-monitor arrangement that presents a 180-degree field of view on three large Farrand windows. RAVE pilots fly a testbed CH-53A via television from a special flight control station in the middle of the cargo compartment using a third set of flight controls, with no visual references other than the three TV monitors. The systems engineer at his monitoring station behind the RAVE pilot directs the latter and controls data collection.

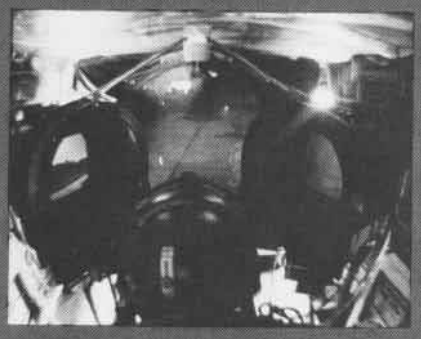
RAVE test pilots carry out terrain-avoidance and terrain-following in the mountains of West Virginia and precision hover, pop-up, sideward flight, unattended area landing, and other maneuvers in the Pax River area.

The RAVE helo carries a crew of seven, including two pilots in the cockpit who take command of the helicopter in an emergency. Among the onboard instrumentation packages is an airborne tape recorder that documents 36 critical performance factors such as forward, sideward and vertical velocity, pitch, roll, yaw, control stick positions, absolute and barometric altitude, torque, air temperature, airspeed and heading.

One of several innovations being evaluated is a helmet-mounted display which is coupled with a head-tracking device that allows the pilot to scan his surroundings visually by simply moving his head — activating the TV camera electronically slaved to his helmet and mounted in a turret.

During the present test phase, the RAVE pilot flies the helicopter without the aid of any aircraft instruments, relying entirely upon real-world flight cues presented before him. During future tests, flight symbology and night vision hardware will be evaluated.

RAVE is a three-year Army program supported by the Navy. Air Force and NASA are involved in similar studies and will share in the findings.



In flight control station, pilot's only visual references are three TV monitors, left. Below, engineer adjusts monitors, controls data collection and instructs subject pilot.

NAS South Weymouth

Minuteman Tradition

By LCdr. Charles O. McCauley III

Like so many of its surrounding communities, NAS South Weymouth, Mass., the "home of New England's Weekend Warriors," is proud of its heritage and particularly the role it has played in the development of the Naval Air Reserve.

Serving Reservists from quaint and picturesque New England towns, the air station is an integral part of the modern Naval Air Reserve Force, tracing its ancestry to the inception of the Naval Air Reserve program at nearby Squantum, Mass.

In 1621, Captain Myles Standish and a group of men from Plymouth Colony climbed atop a promontory on the tip of a plateau extending into Quincy Bay and christened the area Squantum in honor of their Indian guide, Squanto. Many years later, this was to be the birthplace of Naval Reserve Aviation.

Squantum's first connection with aviation came in 1910 when the Harvard Aeronautical Association (HAA) was formed to encourage experimentation with various forms of aircraft and to foster the development of new models by holding competitive air trials. HAA chose Squantum for the first Boston-Harvard Aero Meet because the clear approaches to the level sod-covered tract of land just above sea level made it ideal for the aircraft of that era.

Twenty-two aviators and 17 flying machines participated in the 1910 meet. The list of entrants contained names that later became synonymous with the development of aviation. Included were Claude Grahame-White flying a Farman biplane and a Bleriot monoplane; A. V. Roe in an AVRO triplane; Ralph Johnstone and Walter Brockins flying for the Wright Brothers in two Wright biplanes; Charles Willard in a Farman; Didier Masson in a Vendome monoplane; Augustus Post in a Curtiss biplane; Gardiner Hubbard flying a Hubbard monoplane; N. A. Connors in a Connors biplane; Clifford Harmon in a Farman biplane; Dr. W. W. Christmas in a Christmas biplane; and W. Starling Burgess flying a Curtiss-Burgess biplane.

The nucleus of the first Naval Reserve Flying Corps can be traced to a group of undergraduates at Yale University in 1916. The membership of the First Yale Unit was completely civilian and, in March 1917, the Navy Department urged the group to enlist in the Naval Reserve Force. This unit was the first to provide Reserves as designated Naval Aviators, and its pilots were the first in the Naval Reserve Flying Corps to reach Europe in WW I.

It was not until after WW I, how-

At left, SP-2H takes off from NAS South Weymouth, Mass. In 1926, Squantum had one N-9, one TG-4, two TG-5s and four UO-1s, right.

ever, that a group of war-experienced aviators proposed the establishment of a Naval Aviation Reserve program at Squantum. Soliciting the aid of Rear Admiral Richard E. Byrd, then a young lieutenant, as spokesman, they were able to get permission from the Bureau of Aeronautics to use the old wooden hangar at Squantum (built by the Commonwealth of Massachusetts for the Boston-Harvard air meets) and a battered old seaplane.

With this humble beginning — a weather beaten hangar standing spartan-like against the fury of the nor'easter that lashed the coast and an ancient seaplane held together by wire, curses and prayers — Naval Reserve Aviation was born.

Naval Reserve Air Base Squantum was commissioned in 1923. The first and second Naval Reserve Units, VS-4, commanded by Lt. Julian D. Ivey, AF USNR, and VF-11, commanded by Lt. Paul Ives, AF USNR, were redesignated VN-1RD1 and VN-2RD1, respectively, and transferred from the Boston Navy Shipyard to NRAB Squantum in 1925.

In 1927, Lt. Noel Davis, a pioneer in Naval Aviation and the second commanding officer of NRAB Squantum, was killed during a test hop in preparation for a New York to Paris flight. His memory is perpetuated by the Noel Davis Trophy presented annually to the Naval Air Reserve squadron or unit scored the most proficient of its type.

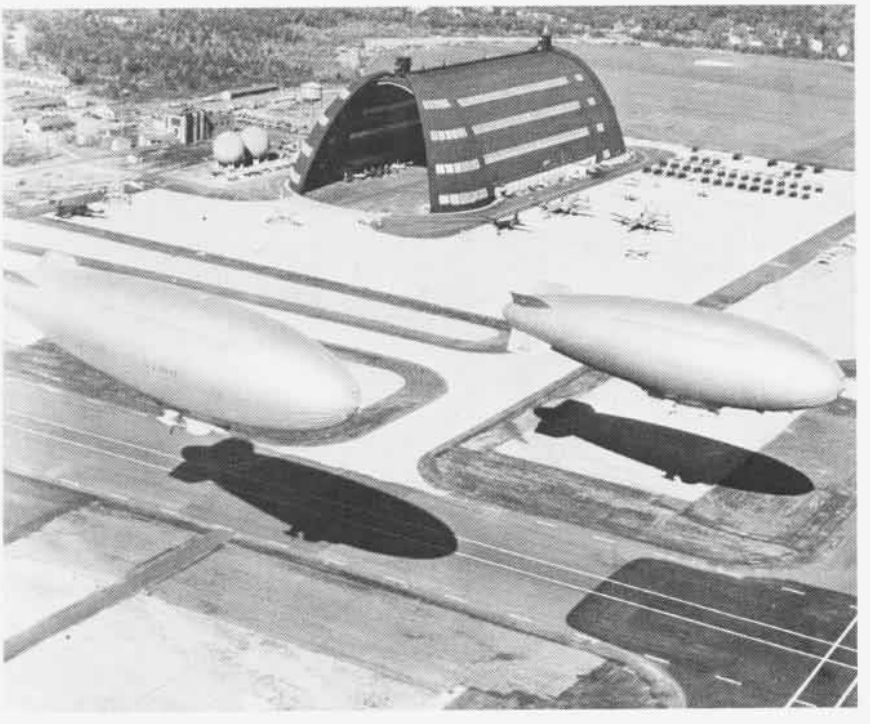
Under the hush of military censorship, allied airmen from all over the world underwent primary training at Squantum during WW II, their N3N *Yellow Perils* filling the New England skies. By 1943, 2,300 had received primary training.

While NRAB Squantum was training young aviators, a few miles away, a lighter-than-air base, Naval Air Facility, South Weymouth, was also making its mark. Commissioned in March 1942, NAF "Sowey" blimps made antisubmarine warfare patrols off the Atlantic Coast. In June 1944, six blimps took off from Sowey to establish the first "blimp-barrier" squadron at Port Lyautey, French Morocco, patrolling the Straits of Gibraltar for enemy subs.

With the advent of jet aviation, the Navy decided to decommission Squantum and transfer all operations to South Weymouth, which was commissioned an NAS in December 1953. Captain Harry Satoris, USNR, had the dual honor of being the last commanding officer of Squantum and the first of NAS Sowey. He personally flew the last aircraft from the cradle of Reserve Aviation to its new home a few miles away.

Today, under the command of Captain Gerald C. Canaan, the 1,450-acre air station continues to play an important role throughout the South Shore communities as well as in the future

At right is the ramp at South Weymouth.



Clockwise from top left: Squantum's first TG-3 acquired in 1923; two blimps prepare to land at South Weymouth; F9F signalled the end for Squantum and the beginning of the jet age at South Weymouth; an AF Guardian and an F4U-1 Corsair; 1923 saw the introduction of the Naval Air Reserve's first aircraft at Squantum, an N-9; UO-1 in 1923.

of the Naval Air Reserve Force.

Stressing community involvement, the air station recently assisted the town of Weymouth in celebrating its 350th anniversary with more than 20,000 local citizens attending *Expo 350* aboard the station. The economic value of the base to the area is emphasized in speeches to various civic groups and every effort is made to encourage a people-to-people program between station personnel and their civilian neighbors. In addition, the base recently sponsored a highly successful blood drive.

The community relations program developed an international flare when the air station hosted young hockey teams from Canada that participated in the International Youth Hockey League Tournament sponsored by the local Kiwanis Club.

Project Concern is a continuing program which assists underprivileged or deprived children. Base facilities are

scheduled for their use and military personnel volunteer their services to help these youths overcome their disadvantages.

With the recent proposed closing of many Navy installations throughout the state, the image of NAS Sowey takes on increased significance.

Antisubmarine warfare continues to be the primary operational mission of the air station. VP-92, flying the SP-2H *Neptune*, is a combat ready Reserve Force squadron participating in ASW patrols off the Atlantic Coast.

Commander Tom Kahabka, officer in charge of the squadron, is looking forward to an additional VP squadron in the near future, along with P-3s. "We are operating exceptionally well with a full complement of personnel and aircraft," he states. "We have also just completed a joint exercise with the Colombian Navy in South America and have participated in many exercises with the regular Navy. It is this sort of thing that makes the force concept so effective today in the Reserve program."

The responsibilities of the station will be expanded during the first quarter of FY 74 when Helicopter Antisubmarine Squadron 74 comes aboard due to reductions at NAS Quonset Point. Accompanying HS-74 will be the Replacement Training Group and the Naval Air Reserve Detachment, which provides full support and trains personnel for the hardware squadron. HS-74 has nine SH-3As, 33 pilots and 117 enlisted personnel.

Since its commissioning in July 1970, HS-74 has made many significant contributions to the Navy and the surrounding community. In June 1971, the squadron cruised aboard USS *America* (CVA-66), becoming the first Reserve HS outfit to perform with the fleet on an operational cruise. Perhaps its most significant single achievement was the receipt of the Meritorious Unit Commendation for support of the Pennsylvania flood victims in June 1972.

The Marine Air Reserve Detachment, under the command of Lieutenant Colonel R. L. Talbert, trains Reservists in the A-4 *Skyhawk* and the UH-1 *Huey*. According to Lt. Col. Talbert "The outlook for the Marine Reserve program at South Weymouth is very good. The idea of augmenting the Reserves with the Regular forces during various exercises, such as NATO support, has certainly improved readiness and morale, especially in the Air Reserve."

There are approximately 2,000 Selected Air Reserves and 500 active duty personnel assigned to the station. In the true Minuteman tradition, these men are ready to respond quickly and to integrate with the regular Navy in a national emergency. As Winston Churchill so aptly stated, "To be a Reserve is indeed to be twice a citizen."

Letters

Safety

I read with interest each month's issue of *Naval Aviation News* and find the articles very interesting as well as informative. However, in paging through the March issue, I noted one picture that showed a major safety violation — the inside front cover of a T-28 being launched from USS *Lexington*. In the lower left-hand corner of that picture, there is a sailor in the catwalk just forward of the angled deck. This is dangerous enough, but he is also wearing a white hat and no flight deck safety gear. You stress safety in your articles, and I feel this is a gross violation of standard flight deck safety practices and should be stressed as such.

Patrick Glenn Durden, ADJ3
VA-81
FPO New York 09501

While reading your May 1973 issue, I observed two unsafe procedures, in the article "A Man Sized Job."

AA Ballard is 13½ feet above ground on the wing of the HU-16D and is *not* wearing non-skid, spark resistant safety shoes. She is also using a plastic fuel quantity dip stick which is capable of holding a charge of static electricity.

Since our women are trying and we would hate to have one of them as a casualty. . . .

V. C. Eichman, ADR2
HU-16 Plane Captain
Box 35F, USNAS
FPO New York 09593

In the May issue on page 23 it was noted that in the lower right-hand picture of the article "A Man-Sized Job" two very essential safety precautions in aviation have been totally disregarded. One, low cut, leather-soled shoes are *never* worn when servicing aircraft — they could make for a nasty fall. Two, if the fall should occur, the ring the sailor is wearing could be the cause of an amputated finger. It is certainly strange that these two aviation safety violations still exist after indoctrination into aircraft and aircraft maintenance.

James L. Rairigh, ADJ1
AIMD Quality Assurance
Whidbey Island, Wash. 98278

Turkeys?

Avengers they all were, but not quite as captioned. For those who noticed, we too realize that a couple of miscaptions were included in the July centerspread. Any late WW II or post-war *Turkey* pilot/crewman knows that the TBM-3E

carried APS-4 radar in a "bomb" unit under the right wing, as shown in this photo of a VT-20 *Avenger* taken in the early post-WW II period. The leading-edge-mounted radome and fairing in the upper left-hand photo were features of the TBM-3D which carried ASD/APS-3 radar. Similarly, the lack of a lower cowling air inlet, a feature of the R2600-20 engine installation in all -3 series *Avengers*, is a giveaway that the upper right-hand photo is not a TBM-3 but rather a -1 series — probably a -1C.

Hal Andrews
NavAirSysCom
Technical Advisor

Oops

Please correct me if I'm wrong, but the caption accompanying the night cockpit picture on page 23 of your March 1973 issue is incorrect. The caption reads, "Night flying is an important part of the advanced prop training syllabus. . . ." The cockpit is that of an H-1 helo.

J. G. Holewa, Ltjg.
NAS Kingsville, Texas 78363

Ed: Correct. Night flying photos are hard to come by, but that's no excuse.

Italian Collector

I am very interested in Navy aircraft. Particularly, I am collecting slides (35mm) of *Corsairs, Phantoms, Skyhawks* and old *Crusaders*, with specific interest in the markings and insignia of the squadrons.

Help from your readers would be much appreciated. In exchange, I can send slides of Italian Air Force aircraft and aircraft of other countries.

Carlo Tripodi
Via Bernini, 58
80129 Napoli
Italia

Black Widow

I wonder if any of your readers have any information on the Northrop P-61 *Black Widow*? I know this was an Army plane, but my back is to the wall on items like the pilot's handbook.

Warren E. Thompson
7201 Stamford Cove
Germantown, Tenn. 38138

Foreign Correspondent

In the May 1973 issue of *Naval Aviation News*, I read a letter from Mr. G. E. Torier in which he complains about no mention being made of the participation of USS *Intrepid* in Exercise *Strong Express*.

CVS-11 and DD-863 left the port of Rotterdam, after a short stay, to take part in the exercise. As I am very interested in the U.S. Navy, I took a few photos of this duo while they were leaving Rotterdam.

C. van der Kemp
Vinkerpolder weg 24
Alblasserdam 3230
Holland

Published monthly by the Chief of Naval Operations and the Naval Air Systems Command in accordance with NavExos P-35. Offices located at 801 North Randolph St., Arlington, Va. 22203. Phone: 202/692-4819, Autovon 22-24819. Annual subscription: $9.00 check or money order ($2.25 additional for foreign mailing) sent direct to the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. A single copy of the magazine costs 75 cents from GPO.

Helicopter Combat Support Squadron Two, 25 years old on March 30, 1973, is based at NAS Lakehurst, N.J., and maintains detachments aboard Atlantic Fleet carriers. Skippered by Commander Michael J. Marriott, it flies SH-3G Sea Kings. Over the years, HC-2 has rescued over 1,650 victims of shipwrecks, aircraft ditchings, floods, hurricanes, snowstorms and enemy hostilities.

Squadron Insignia

NAVAL AVIATION
NEWS