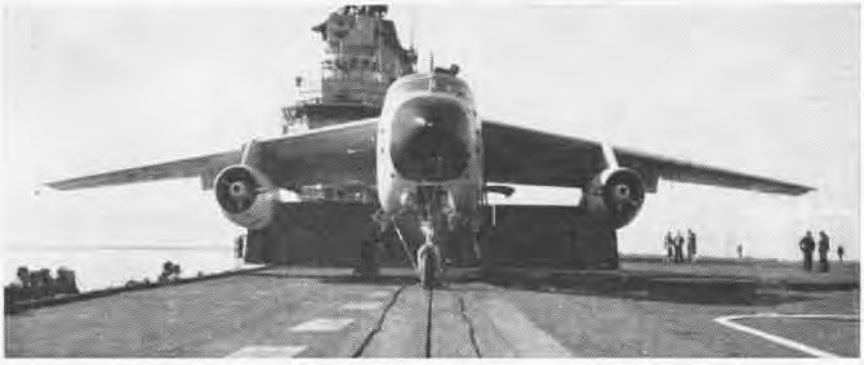
NAVAL AVIATION NEWS

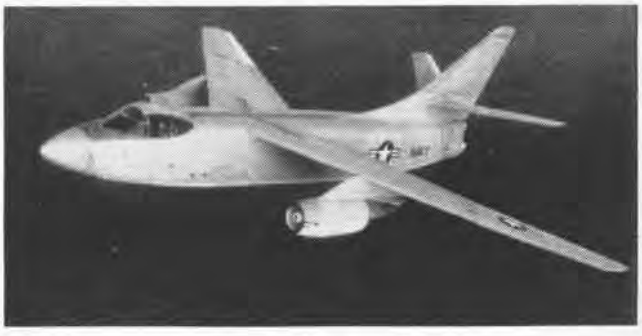
39th Year of Publication

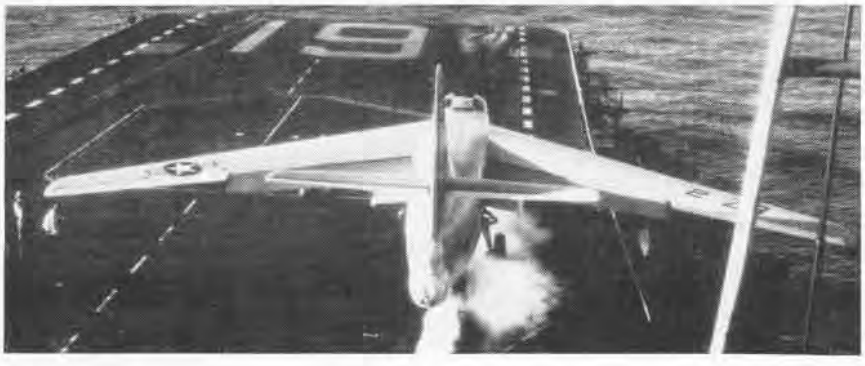
OCTOBER 1958

NavAer No. 00-75R-3

SHARE THIS COPY







★
★ ★ ★
★

★
★ ★ ★
★

From any angle you look at it, the Navy's Douglas A3D Skywarrior is a powerful weapon in the arsenal of the Free World. On the catapult of the USS Midway, a Skywarrior (top) is poised for another flight. At left, the Navy's biggest carrier-based bomber shows off its sturdy lines as it is piloted by a member of Heavy Attack Squadron Four. The big attack aircraft weighs 70,000 pounds. Raring to go, it starts down the Hancock catapult, an emblem of might for the attack carrier today. Yes, from any angle you look at it, it's Navy power with Navy style.

PROUD 31

BON HOMME RICHARD

FIT AND READY TO SAIL AGAIN

As LONG AS ships have gone to sea they have needed overhaul and refitting. For centuries, the beach itself served as the drydock. All the skills necessary to put a ship in fighting trim were found in the ship's crew. Necessary materials and equipment were carried on board, or fashioned from resources nearby land supplied.

Today, however, the complexities of a modern Naval vessel require far more than a sandy beach for overhaul. Large shipyards, with varied and complicated equipment and a small army of highly trained specialists, are now needed.

This is the story of what happens when a modern fighting ship goes into one of these shipyards for refitting. The ship in this case, the *Essex*-class USS *Bon Homme Richard* (CVA-31), is commanded by Capt. B. E. Close. The yard is the Puget Sound Naval Shipyard, Bremerton.

The story begins soon after the ship was notified of the dates for its yard availability. Each department began listing those jobs it would like to have accomplished. These requests were based on authorized ShipAlts, BuAer Changes, OrdAlts, Trial Board Items—the officially approved changes for ship, equipment and armament. Work requests were also dictated by the condition of equipment, changes in operating conditions or tactical requirements. Each request was evaluated on the basis of its effect on the operational and fighting ability of the ship, and on available money, time and manpower. Major reason for turning down job requests was money.

By Lieutenant Commander H. E. Darton, USNR
Surface Division 9-23 (L)

CDR. E. R. COATES, CHIEF ENGINEER, STUDIES THE SHIP'S BLUEPRINTS

AFTER JOB REQUESTS were approved, the shipyard began drawing required plans for the various jobs and outlining a work schedule. All this had to be done before the ship reported for its yard period. A cost estimate for each job was set up, and each assigned a priority. The "must do" jobs were classified as "control jobs." On this trip to the yard, control jobs for the *Bon Homme Richard* were the installation of improved jet blast deflectors, enlargement of the No. 1 elevator and rebricking the eight boilers.

Before reporting in to the yard, the *Bon Homme Richard* had to offload some 900 tons of ammunition at Naval Ammunition Depot, Bangor, Washington. This was an all hands operation requiring the muscle power of every man aboard, regardless of rate. Before arrival at NAD BANGOR, crew members had spent 30 hours breaking out the ammunition from magazines and other storage areas throughout the ship. This enabled them to complete the off-loading job in a record 12 hours, a backbreaking movement of *75 tons an hour!*

From NAD, the *Bonny Dick* proceeded to Pier 5 at the shipyard, where, almost immediately, four months of organized confusion began. The yard period was divided into roughly four parts: First, three weeks were devoted to rigging of yard working equipment and tearing out equipment and bulkheads in spaces scheduled for remodeling, replacement or overhaul. The second phase—approximately seven weeks long—was spent in drydock replacing bulkheads, rebuilding spaces, reinstalling equipment and working on the hull and hull fittings. After drydocking, three more weeks were spent completing the work. An additional three weeks were required for postyard trials and correcting any defects turned up during the trials.

Since the ship's power plant was secured during most of the yard period, all services—heat, light, power, water, etc.—had to be supplied from the beach. One of the first jobs was rigging steam lines, power cables, water lines and ventilating ducts to provide these services. Next came the installation of literally hundreds of pieces of equipment that were used by yard workmen in carrying out the work.

Two men carried the responsibility of coordinating all work: For the ship, the Chief Engineer, Cdr. E. R. Coates, and for the shipyard, the Base Production Officer, Lt. J. R. Wales. Although the work had been planned and scheduled well in advance of the ship's arrival at the yard, last minute changes in plans were made, late job requests submitted, a hundred and one minor problems arose and had to be solved. It was these two men who ironed out the problems, approved or disapproved late changes and requests, and kept the work moving forward on schedule.

As Cdr. Coates points out, "A usual four-month overhaul entails many hours of shuffling papers, reading job orders, checking blueprints. In short, the yard period is one big mass of paperwork for the engineering officer."

While yard workmen were bringing aboard their tools and equipment, ship's company was off-loading and relocating ship's stores and other moveable items to clear the way for the work ahead. Obsolete equipment and supplies, and those deleted from ship's allowance lists were sent over to the yard for disposal.

In spite of all the noise and confusion, much of the normal ship's routine had to go on. Three meals a day had to be served, sick call held each morning, quarters held for muster, watches stood, and paydays held. In addition to the usual in-port deck watches, a "cold-iron" watch was maintained in the boiler and engine rooms, special security watches were posted and fire watches stood. The latter were quite essential because the very nature of yard work greatly increases the first hazard. Fire Watch duties involved as many as 200 men during a 24-hour period . . . one "fire watch man" for each burner or welder.

To cope with the problem of providing personnel for this duty, the *Bon Homme Richard* set up a fire watch system that proved very efficient. Each department detailed men for temporary additional duty to the Engineering Department, which, in turn, set up a fire watch division under the direction of the "R" division officer. The men were berthed in two adjacent compartments for easy location, and each was furnished necessary fire extinguishers, hard hats and goggles. Under this system, fire watch personnel were always available, and yard burners and welders lost no working time waiting to be assigned a man for fire watch. Special cleaning details were kept busy disposing of the litter that naturally accumulated as work progressed.

One of the first and most notable changes that took place was the removal of the five twin 3" 50-caliber rapid fire gun mounts. Along with this went the elimination of the two fantail gun tubs and a radical change in the configuration of the stern. Gun tubs and fire control systems for the 3" 50's were also removed from the port and starboard bows and the starboard quarter.

On the flight deck, work that would greatly increase the operational capabilities of the Air Department was soon underway. The flight deck began to look like a small village as prefabricated huts were swung into place by the yard's huge hammerhead crane to protect workmen and equipment from the weather. The two steam catapults were completely removed from their beds on the forward flight deck and moved to the yard in 12-foot sections for inspection and overhaul.

Increase in power, hence increase in heat and blast, of new jet engines were creating hazardous conditions for flight deck crews, aircraft and equipment within 250 feet aft of a jet turning up at full power on the catapult. To eliminate this hazard, new type jet blast deflectors were installed at the after end of each catapult during the yard period. Three months of steady work and an expenditure

WORKMEN REPAIR CARRIER FLIGHT DECK

AIRCRAFT BARRIER REQUIRES ATTENTION

CYLINDERS OF CATAPULT ARE EXAMINED

of $547,000 went into the installation for the *Bonny Dick*.

Each deflector is made up of three panels installed side by side immediately aft of the catapults. Each panel can be operated independently or in any combination. The panels are hinged to the flight deck and the raising and lowering is done through a system of hydraulic jacks controlled by the catapult operator. When not in use, the deflectors fit into shallow wells in the flight deck. The panels are made of an aluminum alloy. In order to withstand the intense heat, the two inboard panels of each deflector are honeycombed with a series of hollow passages through which salt water is pumped. The water absorbs the heat and is pumped over the side.

When construction of the *Bon Homme Richard's* deflectors was nearly done, word was received from the carrier USS *Midway* that the angle between deflector and flight deck was not proving entirely satisfactory. The *Midway* had a similar installation during an earlier yard period and was testing it under actual operational conditions. In light of her experiences, the yard workmen had to undo some of the work they had done, and reconstruct the *Bonny Dick's* deflectors to conform to the suggested new deflector angles. Subsequent operations are proving the wisdom of expending the extra time and money to make the change while the ship was still in the yard.

At the same time, work was underway on lengthening the No. 1 elevator. Plans called for the addition of a triangular section on the forward end that would increase the length of the elevator 12 feet along its centerline. The additional length permits easier handling of the longer jet aircraft, such as McDonnell's F3H *Demon*, now assigned to the carrier. The job required cutting into five decks—flight deck, 02, 01, main and second. Included in the area to be cleared for the additional shaft space were living quarters, storage spaces and work areas, as well as power cables, water lines, ventilation ducts and other plumbing.

Once the work on the elevator began, power and other services to the affected levels in the forward part of the ship were lost. This loss necessitated the relocation of a number of ship's personnel normally billeted in the forward living quarters. It was nearly four months before many of them could move back "home." Some had to be relocated permanently because their quarters had been replaced by the enlarged elevator shaft.

While work was under way on the elevator and blast deflectors, other smaller jobs were in progress on the flight deck. Several changes were made to the aircraft fueling systems. A new type liquidometer gauge—called a "salt water static headgauge"— was installed in the ship's avgas system. The *Bon Homme Richard* was the first fleet ship to get this improved equipment.

To speed jet refueling during flight operations, one of the avgas refueling stations on the starboard side aft was converted to handle JP-5 jet fuel. A new trickle filter was added to the JP-5 system, giving double filtration of fuel before it is pumped into the aircraft. Four electric stripping pumps were installed in the JP-5 system, providing an independent means of stripping. The stripping line from the avgas draw-off tank was re-routed to prevent the possibility of inadvertently discharging avgas over the side.

To speed starting and servicing of aircraft and reduce the necessity of moving portable power equipment around the deck during flight ops, a series of permanent power outlets was installed down the center of the flight deck, beginning in line with the forward part of the big ship's island.

YARD WORKMEN, SAILORS HEAD HOME AS SHIFT CHANGES

One of the arresting gear engines, with the accompanying arresting wire, was removed to reduce topside weight. The *Bon Homme Richard* now operates with only four arresting wires. All available modifications were incorporated into the remaining four arresting gear engines, including a cooling system to prevent overheating of the engines during operation.

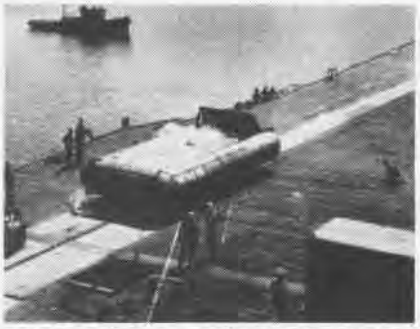
Three additional sets of three special aircraft engine holdback fittings were installed on the port side of the flight deck. These will give additional areas for static tests of the more powerful jet engines and afterburners. Each fitting is set in a ⅝-inch thick steel plate welded to the metal deck. Each is pull-tested to 45,000 pounds to make sure it will hold under the tremendous thrust of a full power turn-up with engine afterburners cut in.

After all jobs on the flight deck had been completed, repair of flight deck planking damaged by the work or by previous air operations was begun. Two types of wood were used. Along the landing areas of the angled deck, where wear is heaviest, a special laminated planking was used. This consisted of a three-inch thickness of selected fir on top of which was laminated a one-inch thickness of teak-finished coat of dark gray. The contrast in tones has proved quite helpful in better defining the land-launch areas of the flight deck.

The advent of pressure flight suits, necessary to the high altitude operations of today's jets, brought about a modification to Ready Room 4, a pressure suit cooling system. Individual outlets, connected to the main system, are located by each seat in the ready room. These can be hooked in to each pilot's pressure suit for individual cooling during briefing and stand-by periods. Facilities are sufficient to accommodate an entire squadron. *Bon Homme Richard* is one of the first carriers in the Pacific Fleet to get this improvement.

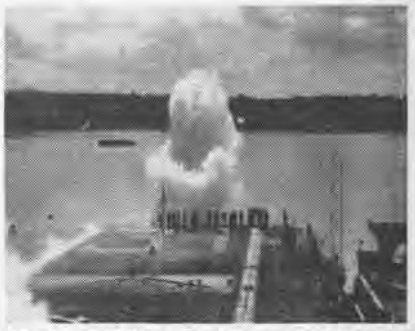
Number 2 elevator was also scheduled for an 8-foot extension of its forward end. Since it is an outboard elevator, no structural changes to the ship are required. However, the work was done ashore, since the elevator had to be removed, anyway, to permit the ship to enter drydock.

The *Bon Homme Richard* passed over the sill into drydock at 0956 one overcast Saturday morning three weeks after its arrival in the yard. She was high and dry on the keel blocks of the Bremerton dock by 1340 that afternoon.



GOING—58,000 LB. DEAD LOAD ON CAT

GOING—TEST LOAD LEAVES FLIGHT DECK



GONE! IT PLOWS INTO WATER AFTER RUN

wood. Teak was used because of its natural hardness and resistance to wear. All planking is six inches wide.

On the remainder of the flight deck, selected fir, six inches wide and four inches thick, was used. Each piece of planking was cut and shaped precisely to fit the particular slot into which it was laid. Holes were drilled to fit the stud bolts which hold it to the metal deck. Before the planking was laid, a special sealing compound—polyester resin vermiculite—was applied to the steel deck. The planking was then laid on top of this and bolted down. The bolts and nuts were countersunk and a wood plug cut and fitted into each hole, making the flight deck area completely smooth. Approximately 11,300 lineal feet of Douglas fir and 5500 lineal feet of teak-fir laminate were used for these flight deck repairs.

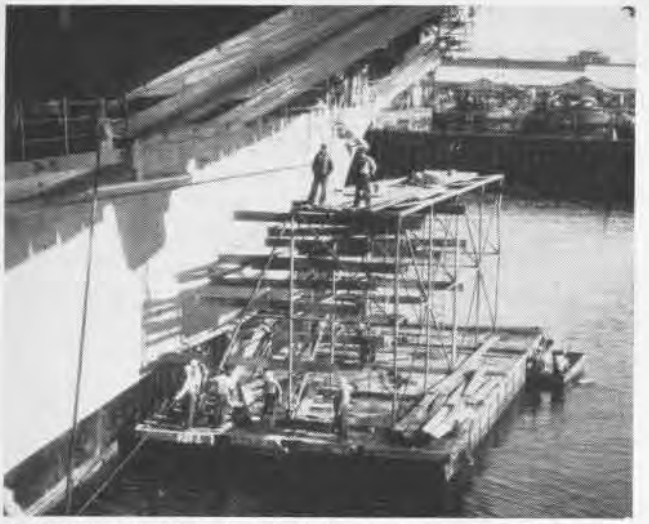
During a previous yard period, a 40-foot by 100-foot steel section had been inlaid on the angled deck area that received the hardest wear from aircraft landing. Subsequent operations with faster and heavier jets showed many of these aircraft were overshooting and landing ahead of the steel insert. So, during this yard period, the wooden planking in an additional 40-foot by 70-foot area ahead of the steel plate was replaced with special extruded aluminum strips.

Finally, the landing area was painted a light gray, and the launching and other flight deck areas were given a

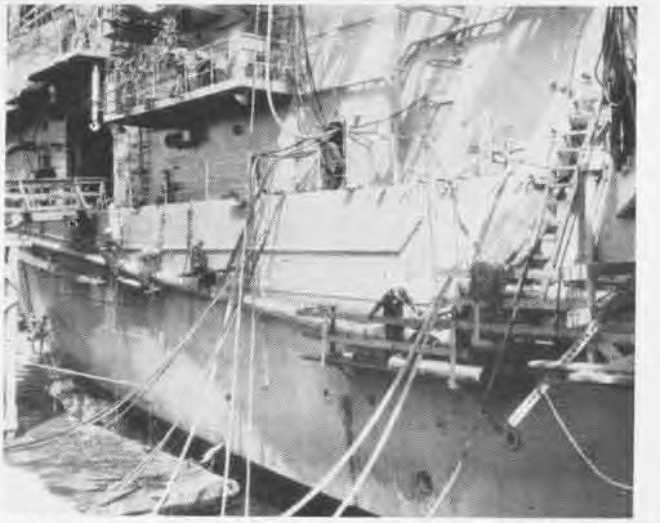
One of the largest jobs, from the standpoint of square feet involved, then got underway. The entire hull was sand-blasted down to the bare metal in preparation for a complete repaint job. The sandblasting took about six working days to complete, then the repainting began. First area repainted was the below-waterline portion of the hull. Two coats of orange wash primer were applied, followed by a coat of anti-corrosive paint, Formula 14.

Next came a coat of plastic, and finally another plastic coating, applied hot, and red in color. These added to the anti-corrosive, anti-fouling qualities of the new paint job, and extended the time before the ship would have to go into drydock again to have the bottom cleaned. Black pigment was added to the last coat of plastic to dress off the "boot topping" that girdles the ship at the waterline. Hull areas above the waterline got the same primers, and then a final coat of traditional gray paint.

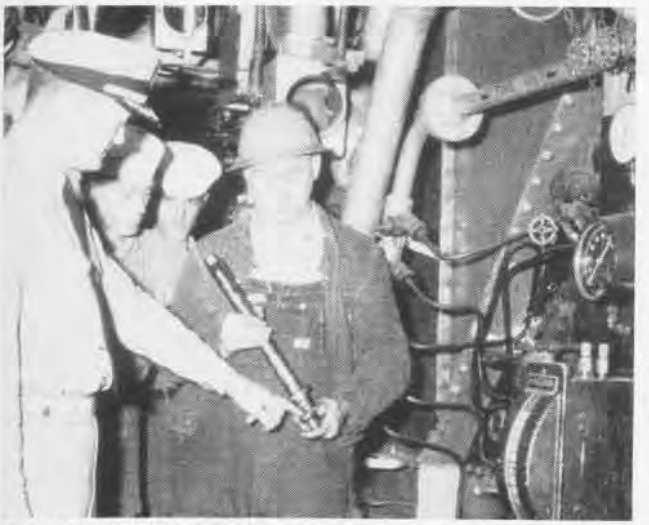
In the after part of the ship another paint job caused a mass exodus of personnel. For three days, yard workers were applying a chemical called "Thiokol" to struts, strut barrels and rudder assemblies. Thiokol is sprayed on at a temperature of about 200 degrees and is used to prevent erosion of these fittings. Thiokol fumes are particularly noxious, though non-toxic. During the spraying operation on the *Bon Homme Richard*, a sea breeze held these fumes within the drydock area. The fumes seeped into



SAILORS ARE PULLING WORK BARGE PLATFORM TO SIDE OF SHIP



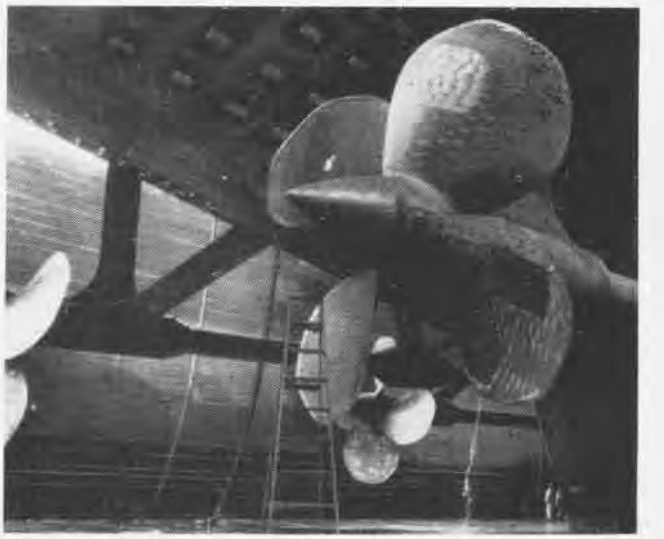
BARGE LINES, WORK BOOMS, LADDERS, SIGNIFY MEN AT WORK



CDR. COATES GIVES SPECIAL DIRECTIONS TO BOILER ROOM CREW

IMPROVED BLAST DEFLECTOR IS INSTALLED AFT PORT CATAPULT

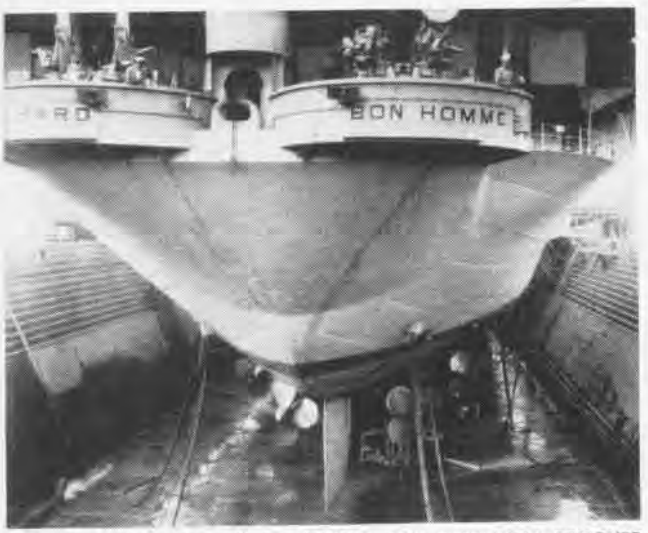
YARD CRANE SWINGS LENGTHENED NO. 2 ELEVATOR INTO PLACE



WORKMEN (RIGHT) ARE DWARFED BY BON HOMME RICHARD'S SCREW

spaces throughout the after part of the ship, making them quite uninhabitable. Bunks, cots, and mattresses had to be broken out hastily and set up on the hangar deck, flight deck, and in every available space forward to sleep personnel normally billeted in the malodorous after quarters.

Throughout the interior of the ship other smaller paint jobs were going on. Staterooms, crews' quarters, wardroom, mess halls, sickbay, storage and work compartments were all getting fresh coats of paint, applied by ship's personnel charged with the maintenance of those particular spaces. Ship's force also undertook the job of repainting the hangar bays. Six hundred gallons of white paint and many hundreds of man hours were required to refinish the overheads and bulkheads in the three hangar bays. White was selected in order to increase the light level on the hangar deck, and thereby aid in the safe handling of aircraft during both day and night operations.



FANTAIL BEFORE TWO 3" 50 MOUNTS AND TUBE WERE REMOVED

While the ship was in drydock, all scheduled repairs were made to the hull and hull fittings; sea valves and sea chests were overhauled; zinc replacements were made. The ship's four large propellers—each 15 feet in diameter—were removed to the yard, the dents and nicks taken out, the screws buffed to a gleaming satin finish, then replaced on the shafts. Necessary repairs were made to the rudder.

Within the ship, another of the "control jobs," that of rebricking of the eight boilers, was proceeding on schedule. Work on this job had begun just four days after the *Bon Homme Richard* arrived in the yard. It took three weeks just to tear out the old brickwork and move the debris up five decks to the hangar deck and over the side to the beach for disposal. Boiler tubes had to be removed and inspected. For approximately eight weeks, some 80 skilled boilermakers from the yard were busy putting the boilers back in steaming condition.

The fact that each boiler is nearly five stories high and occupies about the same floor area as a small beach cottage gives a good idea of the scope of the rebricking job. To get the bricks from the hangar deck, where they were received from the yard, to the working area, air hoists were rigged over the fire room trunks, the ladders removed and the bricks lowered in a bucket 12 at a time. The bucket had to make some *250 trips* to carry the *3000 bricks* used in *each* boiler. Mortar used in laying the bricks had to be transported to the fire rooms in the same way. As the brick work progressed, stages had to be rigged to lay the brick in the upper parts of the boilers.

To allow for expansion of the new firebrick, a sheet of inflammable material was laid between the boiler wall and the brick. When the boiler was fired up for the first time, this material burned off, leaving room for the brick to expand without buckling. New brick normally expands about a quarter of an inch when the boiler is lighted off.

While all this was going on aboard ship, metalsmiths and other technicians worked ashore, fabricating new boiler fronts and fittings. After these were installed, chrome ore—or fire clay—was applied as insulation to the interior of the boiler fronts. The chrome ore has a thick consistency, similar to putty. It was trowelled on, then packed with wood mallets to a thickness of 8 inches. Each boiler required 1400 pounds of chrome ore, a total of slightly more than 5½ tons for the eight boilers.

FANTAIL AFTER REMOVAL AS WATER FLOWS INTO THE DRY DOCK

Literally hundreds of other jobs of varying sizes were being done throughout the ship. A new lifeboat station, complete with power winch, was constructed on the port quarter. All the ship's boats were taken to the yard for repair and overhaul. Each lifejacket aboard was given an individual bouyancy test in the yard. Medical equipment was repaired and modified. The galleys received new bake ovens. Machinery throughout the ship had to be torn down, inspected, necessary repairs and modifications made and the machinery reassembled. In all, 650 repair requests were processed. 91 Trial Board Items, 46 ShipAlts, 50 BuAer changes and 4 OrdAlts were completed. Jobs ranged in size from the $359,000 addition to the forward end of the Number 1 elevator to a $140 item for photographing the changes to the ship's topside configuration.

During a three-week peak work period, approximately 4200 yard workmen were employed on the carrier.

From the crew's standpoint, the yard period meant much additional work, but it meant leave and schools, also. During the four months the ship was in the yard, 696 men were granted leave. In the same period, 432 were

RADM. W. A. DOLAN (R) AND CAPT. CLOSE DISCUSS PROBLEM

temporarily detached to attend various technical schools. In addition, a four-section watch bill was drawn up, to give ample liberty to all hands. Under the system, one section had the duty, one was granted liberty at 1300 and liberty for the other two sections commenced at 1600. All liberty expired at 0745 the next morning.

Because the ship's laundry was secured for almost the entire yard period, crew's laundry was distributed between the Navy Exchange and commercial laundries. The Welfare and Recreation Fund paid the larger portion of the $2,000-a-month cost. Because of the great expense, however, each crew member was assessed 35¢ a month, which took care of about one-fourth of the total cost.

The paymaster found travel and per diem claims increased considerably because of the large number of personnel attending schools. Paydays, with no air group aboard, were considerably smaller. Average paydays were $90,000 to $100,000 during the yard period. With an air group aboard, this amount swells to between $175,000 and $180,000 a payday.

In the crew's mess, one galley at a time was secured for cleaning and painting. This caused little inconvenience because of the large number of men ashore on leave or at school. However, the wardroom pantry was not so fortunate. Maintaining a satisfactory standard of cleanliness in food preparation while yard work was in progress proved to be a big problem. Often it was necessary to move the pantry operation to one of the galleys. The menu had to be kept simple so as not to overload the limited facilities. As part of the strengthening of the hangar deck, additional beams were installed in the overhead of the wardroom. This took approximately six weeks to complete and seriously complicated the serving of meals in the wardroom.

The day finally came for post-repair trials, marking the end of the majority of the yard work. For two days under way every piece of equipment was given a thorough workout. After the trials, two more weeks were required to put the finishing touches on various jobs and to "dress up" the ship again.

All orders finally were signed off as being satisfactorily completed, and the yard period came to an end. After 123 days, at 0900 Monday 19 May, in accordance with ComNavAirPac message of 120116Z of April 1958, the *Bon Homme Richard* got underway from Puget Sound Naval Shipyard for return to its home port in Alameda, and for its return as an operational unit of the Pacific Fleet.

AFTER SEVEN WEEKS HIGH AND DRY ON KEEL BLOCKS, THE BON HOMME RICHARD (CVA-31) LEAVES THE PUGET SOUND DRY DOCK

GRAMPAW PETTIBONE

Screamin' Demon

A *Demon* pilot was assigned to chase an initial fam hop of another pilot in the squadron. Takeoff and climbout to 30,000 feet were uneventful and the hop was proceeding as briefed. Suddenly, the chase pilot felt his F3H vibrate severely, the nose tucked under and no response to stick pressures or movement eased the dive.

The hydraulic gauge, power and utility system pressures read *zero*. Emergency hydraulic pump was lowered and he was able to raise the nose to level flight. Emergency hydraulic light was "ON," AC generator light "ON," fire warning light "ON," and radio dead.

The pilot switched to inverter, retarded the throttle and put out the panic light—figured he had it in hand again. The *Demon* lasted only 15 seconds level, pitched forward again, rolled 180° left and dove for the ground inverted. The pilot had had enough and got out at 20,000 feet at about 400 knots. After a free fall to 8000 feet, he finally located the "D" ring, pulled it, and floated down to land safely on a 4,400 foot hillside.

Grampaw Pettibone Says:

Friend, you had a purty narrow squeak. The account I read was a little lengthier and indicated that you handled the airplane pretty well, so you've got the ability to fly these birds when the goin' gets rough.

BUT you better grab aholt of yourself and do a durned sight more than a quick eyeball check of your personal survival equipment or some day you'll have bought the farm. You didn't hook your 'chute automatic lanyard anchor to your lap belt, you had no bail-out bottle in your seat pan, hadn't checked it on your preflight or attempted to hook the tubing to your oxygen hose.

You fly a high-performance, high-altitude, beautiful machine. Make darn sure you're as ready to go as it is. When you're hurtlin' down at 400 knots is no time to be huntin' for the "D" ring.

GOG Flight

Ten *Cougar* jets were rendezvousing below a 1500-foot broken overcast for return to their home base shortly after takeoff from a major East Coast air station. One of the *Cougars* pulled up in a turn and collided with another which had overrun him.

The planes still seemed to maneuver properly, and a visual inspection by others in the flight disclosed visible damage but nothing considered sufficient to require ejection. The decision was made to continue on to their destination.

Both *Cougars* were checked for slow flight and straight-in approaches made. On the landing roll-out, the starboard wing of one of the *Cougars* collapsed at the wing fold joint! Little more than air pressure had kept the wing on in the air!

Grampaw Pettibone says:

The PIO attributed the safe landings to the Grace of God, smooth air, and stouthearted pilots.

I don't doubt for a minute his statements, but would like to add, "Mighty poor headwork."

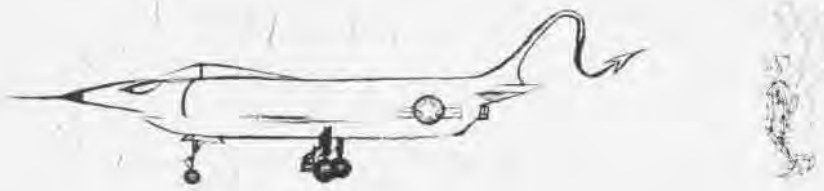
These lads had their mishap only a few miles from a base with a 14,000-foot runway and all rescue facilities, and flew several hundred miles home over some pretty desolate areas. A smart professional would have landed and checked his plane right there.

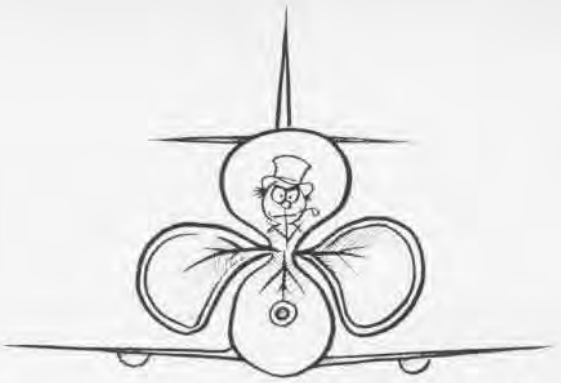
Get-home-itis is a sly killer, always ready to trap impatient aviators. This lad was a clay pigeon for it.

Luck o' the Irish

A young Irishman was scheduled for his Fam 3 hop in the A4D *Skyhawk*. He was well briefed, and both takeoff and the hop were uneventful. He finished up with a simulated flameout approach from 13,000 feet and a waveoff at 500 feet.

The pilot then entered the pattern downwind for touch-and-go's. At the 90° position at 400 feet and 125 knots





Remember! All A4Ds don't resemble four leaf clover!

at 80% power, he felt a distinct and sudden slowing and sinking of the aircraft. A quick glance showed the engine dropping to idle, and he immediately shoved the throttle up to the stops, with no results. His first impulse was to eject and he grabbed the curtain, but remembered his low altitude and dropped his hand.

He called MAYDAY, leveled his wings, dropped the nose, and went on in gear down. The *Skyhawk* hit in a clear area.

On initial impact the ejection seat rollers were ripped off, the seat rocked forward, the pilot struck his chin on the stick, and then rocked back. Just as the seat hit the upright position again, and while the plane was skidding onward, the pilot ejected.

Since the seat had been torn off the track only partial ejection force was applied. The pilot and seat rose only 15 or 20 feet, made one complete somersault and landed on the seat pan 50 feet forward of the aircraft.

Owing to a faulty assembly job, the automatic lap belt release mechanism did not fire, and the pilot remained tightly strapped in the seat. He unstrapped and walked away from it. His injuries were only minor cuts and bruises although the initial impact was estimated in excess of 40 G's.

Grampaw Pettibone Says:

Great horned toadies, this was the mostest! This young man came out of an almost impossible situation smellin' like a rose. He never remembered pulling the curtain, so obviously it was a reflex action he made while dazed from the +40 G impact. If he hadn't ejected, he'd have made it anyway though, because the plane retained its cockpit integrity.

In this instance, the Murphied automatic lap belt release undoubtedly saved the pilot's life, BUT he flew the whole hop *booby trapped* for a normal ejection. The safety and survival equipment officer better get right on the ball in this outfit and make doggone certain his men are properly checked out 'cause he's holding an awfully big sack in his hand right now.

In the maintenance and care of aviation safety equipment, there is no such thing as an excusable error.

The Last Ditch

An F3H-2N was catapult-launched on a local carrier landing practice flight. When off the starboard quarter at 2500 feet, the pilot heard a loud explosion and the engine flamed out. Unable to get a relight, the pilot ditched the *Demon* an estimated three to four miles astern of the ship.

In the pilot's words, "I tightened my shoulder harness and checked the lever in the locked position. At 170 knots at 600 feet, I started a flare, then I nosed the plane over with the intention of flaring at 300 feet. My airspeed was 140 knots. The aircraft hit the water and skipped back into the air to an estimated height of 20 to 30 feet. The second touchdown was in a nose-down attitude and I had the impression that I was in a vertical dive. The aircraft continued to crash through the waves and I leaned my head forward to keep it from striking the seat headrest.

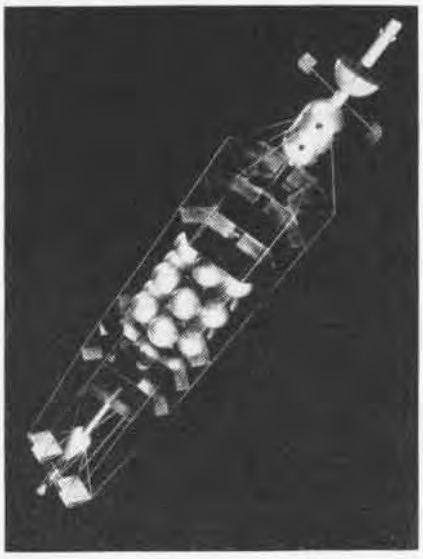
"The aircraft stopped in a nose-down attitude. The lap belt was under about six inches of water. I released the lap belt and climbed onto the left edge of the canopy and while unfastening my parachute the plane sank and I swam about 10 feet away.

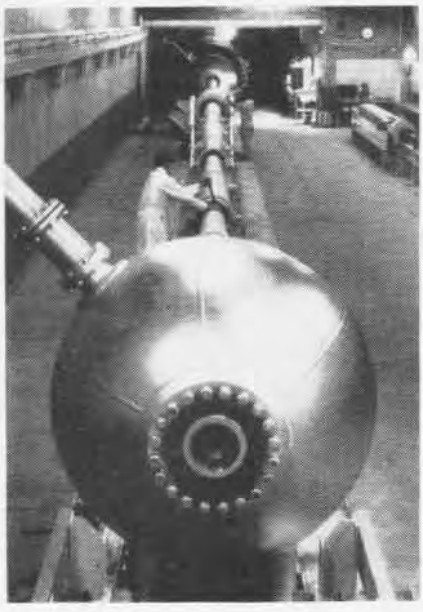
"The helicopter was soon overhead and I got into the sling which the helicopter had dropped in the water. Once I was in the helicopter, my back and neck started aching. I have no recommendations on how this accident might have been prevented, since the cause of the engine failure is undetermined. *Under similar circumstances, I would strongly recommend ejection instead of ditching for I realize that I was extremely fortunate to survive.*"

Grampaw Pettibone Says:

Fella, you can say that again. When circumstances permit, ejection from jet aircraft is normally much safer than ditching. To get a line on the odds, a review of OPNAV Instruction 3750.12 is recommended.

It makes you sweat to watch a plane PLOW through the water at 140Kts!





NACA MEETS SPACE TEST NEEDS AT AMES

HEAT AND SPEED PROVE CRITICAL PROBLEMS

At the 1958 Triennial Inspection of the Ames Aeronautical Laboratory, Moffett Field, Cal., a facility of NACA, soon to be known as the National Aeronautics and Space Administration, a report of research well done was made. Gen. J. H. Doolittle, chairman of NACA, stated: "More than six years ago in this Laboratory, an NACA scientist worked out the principle of the high-drag, blunt nose cone to reduce to a minimum the aerodynamic heating experienced by a body entering the Earth's atmosphere at high speed. All current ICBM and IRBM warheads employ this concept. From this and earlier beginnings NACA's work in space technology has grown in an orderly fashion until it now receives half of our research attention."

NACA has charted its path: "Design and development need to proceed along two parallel lines: manned and unmanned space vehicles. . . . Once we have demonstrated that we can bring man back safely, we can send him on flights into space, even to planets in the solar system."

On the opposite page, upper left, is shown a hypothetical space craft model equipped with the components of a typical electric propulsion system. A nuclear reactor is located at the top. Behind the reactor are a neutron shield, a heat exchanger, a gamma ray shield, and the propellant. The tanklike structure near the center of the model houses turbogenerating equipment through which the working fluid from the heat exchanger is pumped. At the lower end of the model are two crew cabins, a landing vehicle, and a ring-shaped propellant accelerator. While this model shows the basic components of an electrical propulsion system, it does not represent a prototype space craft.

Immediately below it is the Ames Hypervelocity Ballistic Range. A light-gas gun capable of launching ¾-inch aerodynamic models at speeds up to 16,000 mph is located between the large sphere in the foreground and the tank in the rear. The sphere absorbs the blast of gases.

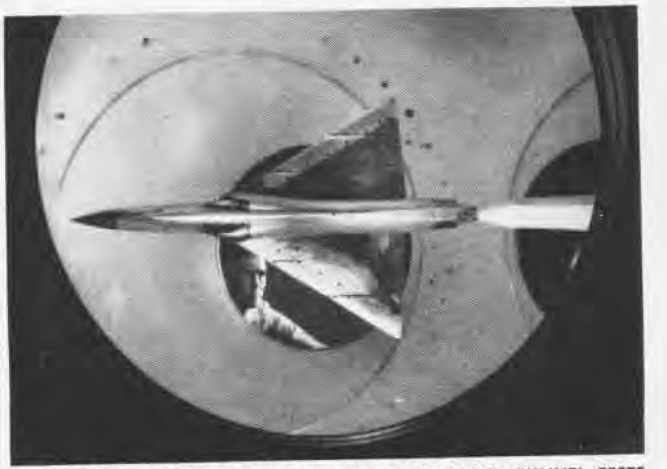
Upper right (opposite page) is the Atmosphere Entry Simulator at Ames. The tank (foreground) contains air under high pressure. A special trumpet-shaped nozzle is so contoured that the air flowing through it gradually changes in density in the same way that the earth's atmosphere changes in density with altitude. When a gun-launched model flies at full re-entry velocity, it experiences during a few thousandths of a second the decelerations, stresses, pressures and temperatures of actual entry.

Below this is a model of another hypothetical space craft equipped with the components of a nuclear rocket propulsion system. At the top are a landing vehicle and crew compartment. Spherical tanks for liquid hydrogen propellant are clustered at the center. This model is not representative of a prototype space craft.

On this page are shown three outstanding examples of NACA research. The ion accelerator (above) is used by scientists at Ames to study the effects of ionized particles striking metal surfaces at speeds of 15,000 mph or faster. A simple device (center) demonstrates satellite orbits by the use of a curved table. A steel sphere dropped into it follows a path very like that of a descending earth satellite, moving closer to model Earth with each circuit. An NACA scientist (right) examines a model of the Convair F-106 during aerodynamic study in the 8x7-foot test section of the Ames Unitary Plan Wind Tunnel. Speeds up to three and a half times the velocity of sound are reached.

AN ION ACCELERATOR IS USED TO STUDY EROSION BY PARTICLES

ORBIT DEMONSTRATED ON CURVED TABLE



INTERCEPTOR MODEL READY FOR HIGH SPEED WIND TUNNEL TESTS

SUPERSONIC SPEED AND FAST RATE OF CLIMB MAKE THE CRUSADER A NATURAL FOR VF-142'S ROLE IN CONTINENTAL AIR DEFENSE

FALCONS AUGMENT AIR DEFENSE

THE FIGHTING FALCONS of Navy Fighter Squadron 142 hold an important place in the defense of Southern California. The squadron with its F8U *Crusaders*, based at NAS MIRAMAR, augments the USAF 27th Air Division, which is responsible for the Continental Air Defense of the area.

Led by Cdr. George H. Whisler, the Navy squadron stands ready on three-hour notice to support the Air Force command. The alert status is flexible and can be shortened considerably. During a three-hour alert, pilots remain on telephone call. On 15-minute notice, they remain in the briefing or ready room, their planes ready for take-off. A five-minute ready status means they stay in the cockpit.

During an exercise, or actual alert, the *Falcons* are under the direct control of the 27th Air Division. When the call comes, the pilots are given the approximate target location and take off immediately. In flight, they are controlled by the Ground Control Intercept Station and directed to the "bogey" by radar until visual contact is made. After that the "tallyho" is given by the F8U pilots, and they go in to make the kill.

VF-142 has repeatedly demonstrated its capabilities in practice scrambles. "Navy fighter pilots with the help of their outstanding maintenance and ordnance crews are equally proficient whether operating from an aircraft carrier or shore base," said Cdr. Whisler. "With the high standard of training given these men, they fit into the Air Defense Command without much additional instruction," he added.

LINE CREWS TAKE CARE OF TIE-DOWN AND INTAKE DUCT COVERS

LTS. MYERS, BELLINGER, BAILEY, BOVEY ARE CLUB MEMBERS

GCA Units Note a Record

35,000 Controlled Let-downs Made

Ground Controlled Approach Unit #21 at NAS BRUNSWICK, Maine, has celebrated the 35,000th accident-free, ground controlled approach record. It was made in a P2V-6.

Cdr. Walter H. Coleman, Jr., Commanding Officer of VP-701 and pilot of the plane, set the record as Edward J. Curtin, AC1, "talked" him down.

Meantime, the same mark, 35,000 approaches without a mishap, has been made by GCA Unit #38M, based at MCAS CHERRY POINT. The mark was made when two pilots from Marine All-Weather Squadron 531 landed their F4D *Skyrays* by way of GCA.

Capt. W. G. McCool piloted the lead plane; Capt. A. H. Green flew wing during the record flight.

Alfa's Admiral Goes Flying

Uses Anti-Sub Team S2F Tracker

Boss of the Navy's new submarine hunting Task Group Alfa, RAdm. John S. Thach, borrowed one of his team member's airplanes. Air anti-submarine Squadron 36 was working on a new hunting tactic when RAdm. Thach decided to go along and try it himself.

Task Group Alfa was engaged in exercises off the East Coast of the United States. The Admiral was launched from the flagship, USS *Valley Forge*, along with five other planes from VS-36. In the exercise area, each plane took turns trying out the new tactic against the USS *Cubera*, one of the two "hunter killer" submarines assigned to the force.

Copilot with Adm. Thach for the exercise was Flag Lieutenant, Lt. D. W. Payne. Cdr. Ben C. Tate is the commanding officer of the squadron.

RADM. THACH SITS IN ON PILOT BRIEFING

MOROCCO TO MINNESOTA

GIFT RECEIVED FOR MINNESOTA GOVERNOR

NAVAL AIR Reservists from NAS MINNEAPOLIS became real ambassadors in the President's "People-to-People" program during their recent deployment to Port Lyautey, Morocco. Cdr. Sam Goad, Commanding Officer of VP-812, accepted on behalf of Governor Orville Freeman of Minnesota a beautiful carpet sent to him by Morocco's Director of Craftsmanship, M'jid ben Mohamed.

The carpet, five by seven feet in size, was completed just two hours before the presentation. It carried a message in blue Arabic characters on a white background: "Remembrance to the People of Minnesota."

The white was the symbol of snows in Minnesota while the blue represented the thousands of lakes from which the state derives its name, "Land of the Sky-Blue Waters."

The Minnesota Reservists had brought with them gifts for the people of Morocco: three pedigreed Columbia sheep sent by the Minnesota chapter of the Future Farmers of America, 5000 packets of Northrup-King garden seeds, and a quantity of insecticides and parasiticides from the Midland Cooperatives.

The Minister of Agriculture, in accepting the sheep for the King, praised the inspiration that caused the Reservists to bring this memento of their visit.

"Soon we shall be able to feed Minnesota 'Kingcrest' corn to the Minnesota Columbia sheep," one official said, "and perhaps they will not be homesick at all."

He regretted that he did not have the wool from the Columbia sheep for the manufacture of the carpet, "But there wasn't enough time," he said.

In the picture of the presentation are left to right, Mr. J'Nieh, inspector of craftsmanship, Capt. J. L. Counihan, commanding officer, Naval Activities, Port Lyautey, Mr. Mjid, Cdr. Sam Goad, Mr. Tiberghien and Mr. Treki.

RAdm. Dufek is Honored

Carleton, LeMoune Award Degrees

Two colleges have awarded honorary doctor's degrees to RAdm. George Dufek, Commander of Navy elements engaged in Antarctic *Operation Deep Freeze*. The admiral received a doctorate of humane letters from LeMoyne College, Syracuse, N. Y., and a doctor of laws degree from Carleton College, Northfield, Minn.

In each case, college officials said their principal reason for awarding such an honor to Adm. Dufek was his outstanding achievements in establishing and equipping a station at the geographic South Pole and six other locations in the Antarctic.

Neither college had ever given an honorary degree to a professional military man.

The Carleton award was made by Dr. Laurence Gould, college president and chairman of the U. S. IGY Antarctic committee. The LeMoyne degree was presented by the Very Reverend Robert F. Grewen, S. J., President.

The Reverend Daniel Linehan, S. J., seismologist who accompanied Adm. Dufek to the South Pole to make seismic soundings, was present for the LeMoyne College ceremonies.

RAdm. Dufek is the first American to set foot on the South Pole, having made the first airplane landing there in October, 1956. He has made two Arctic and five Antarctic expeditions.

POLAR VET RECEIVES CARLETON DOCTORATE

CONTROL CENTER OFFICER TAKES A CALL

CAA AIR ROUTE TRAFFIC CONTROL CENTER ON OAHU KEEPS A CHECK ON 3000 PLANES

THEY HURRY AT FIRST HOLLER

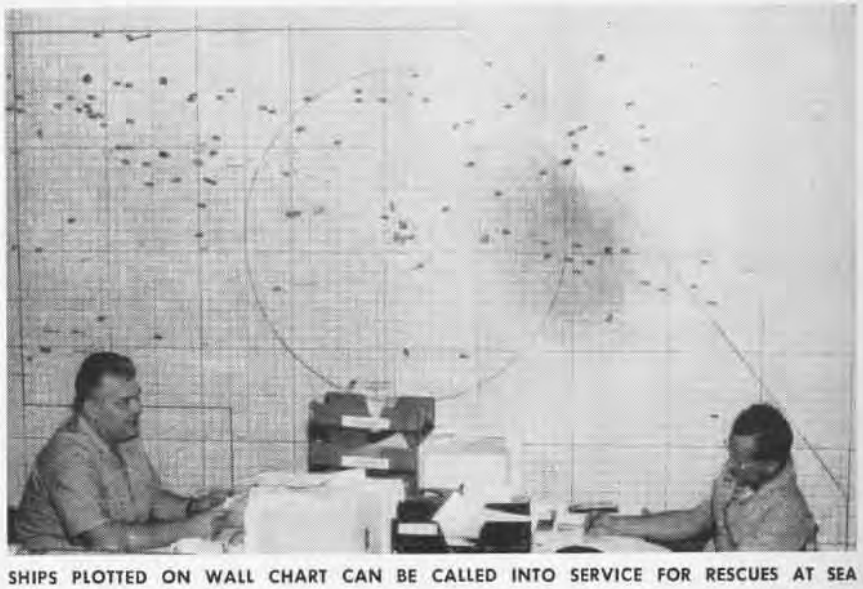
By Joseph D. Harrington, JOC

EARLY THIS year, one of the world's major airlines celebrated the arrival in Hawaii of the 1,000,000th passenger it had carried across Pacific waters. It took the airline 20 years to reach this mark, but will take much less time to repeat that performance. Numerous lines fly the Pacific now. What with fly-now, pay-later plans, plus an ever increasing standard of living, a vacation to Hawaii or the Orient may eventually become as common as a stay in one of America's national parks. Our interest in Asia, both politically and industrially, requires many people to transit the Pacific frequently each year for a number of reasons.

Search and Rescue Coordination Center at Pearl has the job of helping see that all passengers make the trip successfully. When civilian passengers travel through or near Hawaii, whether by plane or ship, a team of skilled rescuemen are watchful for their safety. Here, for example, is how they stand alert to serve flying passengers who might be in distress.

CAA at Honolulu will require reg-

QUARTERMASTER PLOTS SHIP POSITIONS



SHIPS PLOTTED ON WALL CHART CAN BE CALLED INTO SERVICE FOR RESCUES AT SEA

COAST GUARDSMAN IS RESCUED BY MARINE HELICOPTER IN DRILL

FLOAT LIGHTS ARE PREPARED FOR DROP TO MARK DITCH AREA

ular position reports from the pilot if he, like nearly all overwater fliers, files an instrument flight plan. Should the plane run into trouble or become overdue, CAA will contact Coast Guard and Navy rescue center on Oahu.

An escort plane will fly out to intercept, then guide the plane to safety. If the plane must ditch, the escort plane will drop survival equipment and stand by as a radar target for other planes and ships.

At the same time, Coast Guard and Navy radiomen will be summoning merchantmen and warships. SARmen have power to summon help from any U.S. military or naval unit in the Pacific in order to save human lives. The Federal Communications Commission will help, too, by using its directionfinder network to pick up any distress signals and get a "fix" on the distressed plane's position.

Warships, auxiliaries, Air Force SC-54 *Rescuemasters*, combat aircraft, and *Super Constellations* of our Airborne Early Warning system may be dispatched toward the plane.

For surface ship passengers who might need help, the same system is ready to oblige. And, after they've saved all survivors, SARmen put their heads together to figure out how they'll do it better and faster for the next ship or plane reporting trouble.

Search and Rescue Pearl's files for 1957 show that 2024 alerts were answered on Oahu, Midway, Kwajalein and Wake Islands. About two-thirds involved aircraft. From Oahu 236 intercepts were flown. Wake, athwart the civil air route to Tokyo, flew 99, while Midway and Kwajalein flew 14.

Greek, Japanese, Liberian, British, German and Russian vessels were aided when in trouble at sea, and there were 148 medical incidents, during which Americans and foreigners were given treatment for things like heart attacks, appendicitis, dysentery, and even one case of an ulcer hemorrhage.

SAFETY TEAM TESTS A NEW AIRCRAFT HOMING DEVICE ANTENNA

RESCUE OF SURVIVORS IS CLIMAX OF ALL SAR PREPARATIONS

PILOTS TAKE PIO COURSE

IF ONE OF OUR planes should crash, when and how do I release the names of dead or injured to the press? What right does the press have to pictures?

"How can I improve my base's relations with the community? With the local press?

"How do I write a good news release? What's the best way to publicize a change of command? A squadron homecoming? An open house?

"How do I conduct a press conference? Or put out a squadron paper?"

These are a few questions three Naval aviators can answer with authority after spending four weeks at the Navy Journalist School, Great Lakes. The trio completed the school's Information Officers course in August as the first all-aviator class in the course's four-year history.

They are Ltjg. Sam Peterson, Assistant PIO for the Chief of Naval Air Advanced Training, Ltjg. John J. Battersby, PIO of Patrol Squadron 11, and Ens. T. J. Trigg, Public Information Officer, Patrol Squadron Sixteen.

PILOTS PRACTICE READING THEIR SCRIPTS

The course trains Coast Guard, Marine and Navy officers from Ensign to Commander in the theory, techniques and practice of public relations. It familiarizes them with military public information policy, qualifying them for public information, internal information and recruiting duties.

There are sessions in public relations, accident and disaster policy, preparation of news releases, radio and television spot announcements and scripts, public and internal information in foreign ports, special events, photography, and public speaking.

Other highlights of the course are field trips to the Chicago Tribune, WGN and WGN-TV, and the Chicago Museum of Science and Industry. Classes also visit a small radio station in Waukegan and the Fleet Home Town News Center. This group called on CNAResTra and NAS GLENVIEW PIO's to discuss air Navy public information problems.

Do the students like the course? You bet they do. Here are some of the remarks from their course critiques, which they filled out anonymously just before returning to their duty stations:

"Invaluable course, not only for prospective PIO's but for all Naval aviators who, in command functions, will come in contact with the community and the press."

"Excellent. Feel I really got a lot out of this course—of real importance."

"Having no experience in public information work, I think this course has been an absolute necessity . . . has given me the tools to tackle my forthcoming PIO assignment."

The Information Officers course convenes quarterly. The next session begins January 6. The school also offers a two-week Information Officers course for reservists on training duty and A and B courses for journalists.

Rare Photograph is Made

Tiger Develops a Halo at Mach 1

Aviation chief machinist's mate W. K. Clements of VF-82, was watching F11F *Tiger* pilots of VF-21 put on an air show over the USS *Forrestal*. As one of the *Tigers* passed through the sound barrier, it appeared to be surrounded by a flash of light.

SPEED, CONDENSATION GIVE HALO EFFECT

"When it happened the second time, I was ready with camera and lucky," said Clements. He sent the unretouched photo which appears here.

Clements reasoned that the halo-like phenomenon was caused by the penetration of the sound barrier.

The photograph, with Clements' conclusions, was sent to the airframe design division of BUAER for comment. BUAER engineers consulted with Grumman's aerodynamics staff, then wrote to VF-21 for more data.

When all the facts were in, the experts concluded that the phenomenon was probably caused by condensation owing to the reduction in air pressure around the airplane. The phenomenon occurs only when there is considerable moisture in the air and when the plane is flying at a minimum speed of Mach 1. Reflected light from the sun is responsible for all light "emitting" from the area around the airplane.

Since the effect occurs intermittently, perhaps owing to changing local moisture conditions in the air, this gives the effect of a flash of light.

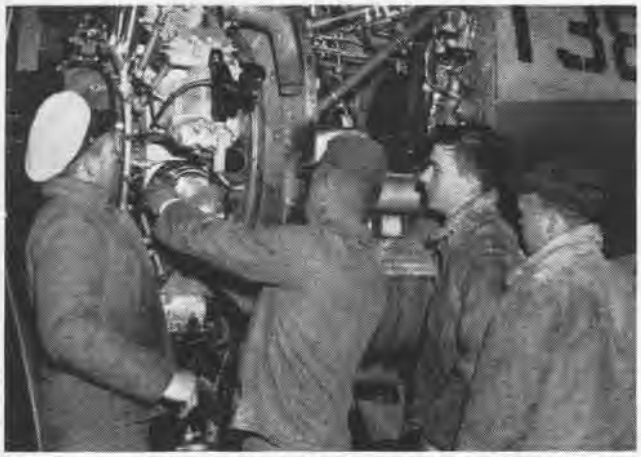
CANADIAN BROADCASTING *Corporation Feature Editor, Kingsley Brown (right), interviews Capt. Paul Masterton at NS Argentia, as part of a 30-minute network TV film. It will feature U.S. Navy's North Atlantic Patrol.*

Aircontrolman is Cited

Helped Prevent 7 A/C Accidents

Frederick D. McEvoy, AC1, has been commended for his "correct practice of Naval safety precautions and exercise of good judgment" which directly contributed to the prevention of seven aircraft landing accidents. The citation was presented by Capt. F. W. Brown, Mayport C. O.

T-28 TRAINERS KEPT IN TRIM



WHITING MECHANICS GIVE T-28 ENGINE AN ACCEPTANCE CHECK

CENTER HANGAR ELECTRICIANS CHECK INVERTER WITH VARIDRIVE

A T-28 at NAAS WHITING FIELD is piloted by many men and is flown many thousands of hours during its stay in the Basic Training Command. From the time the plane is delivered until it has completed its tour, the Aircraft Maintenance Department keeps it in operating status.

It's a big job. There are over 500 aircraft assigned to the activity. Cdr. H. C. McClaugherty heads the operation with LCdr. H. Goddard as his assistant. LCdrs. C. C. Durant, A. E. Tripp and W. G. Ernst are assigned as maintenance officers in shops at Center Hangar, North and South Fields.

The best way to explain how the department works is to follow a T-28. Buno 140153 was transferred to Whiting on 4 September 1956. A thorough acceptance check was performed by the cognizant shops to detect and remedy any discrepancies in the power plant, airframes systems, electronic and electrical equipment, survival and safety gear. After the go-ahead from a master inspector, the trainer was flown for two hours by a test pilot to insure proper performance. A satisfactory flight completed the acceptance check.

Ready for service, the plane was assigned to North Field, given side number 2W477 and a yellow sheet was made out on it. Each time the plane was flown its activities were recorded and transferred to the logs department. Center Hangar maintains a complete running history on all aircraft at Whiting. The information includes a record of time flown, inspections, overhauls, modifications, accessory changes and a list of all persons who have ever had custody.

During the next 19 months 477 logged over 1000 hours. Every 60 flight hours it was placed in a down status and taken to the hangar for an intermediate inspection. A major check was performed every 240 hours and all discrepancies remedied.

The work of the department covers much more than this regular maintenance cycle. It's a day-to-day operation. If a pilot experiences any difficulty aloft or on the ground, he notes it on the yellow sheet. The line chief dispatches a technician to determine the cause. Defective parts are replaced and sent to the proper shops for repair.

On a routine training flight, 477 had engine trouble and the pilot was forced to land at Middleton Field, Alabama. A North Field maintenance officer and mechanic flew to the scene to trouble-shoot the engine. It was determined that one of the cylinders had swallowed a valve, so a crew from Center Hangar was sent to replace the power plant. Handling such emergencies quickly and efficiently is routine for the Aircraft Maintenance Department.

Much technical knowledge and many different skills are required to keep Whiting T-28's flying. Each man is aware of the importance of his role in the operation. Cdr. McClaugherty sums it up: "We know that Whiting turns out the world's best aviators. We want them to fly the best possible aircraft to get the job done."

OVERHAUL STARTED ON AIR COMPRESSOR

PILOT CHECKS T-28 BEFORE TEST FLIGHT

LET'S LOOK AT THE RECORD

CREW OF P4M *No. 5 of Electronics Countermeasures Squadron Two was selected in August as crew of the month. Commanded by Ltjg. C. W. Hall, the crew had completed 70% of the squadron's combat air crewman syllabus.*

Battle E Winners Named

Hornet, Princeton Lead Carriers

Pacific Fleet Naval Air Force officials have announced efficiency awards of the Force's ships for fiscal 1958. Winning ships in the competition are entitled to fly the Battle Efficiency pennant from their foremasts. The three ships named were the USS *Hornet* (CVA-12), USS *Princeton* (CVS-37) and USS *Salisbury Sound* (AV-13).

Highlighting the annual competition was the closest race of its kind ever seen, revealed in a figurative photo finish by the anti-submarine aircraft carriers *Princeton* and *Philippine Sea*. The *Princeton* edged out her sole competitor by a fraction of a point in the final tally for the anti-submarine carrier category to win the coveted Battle Efficiency award. She also took the E for air efficiency. The *Philippine Sea* won two E's of her own for outstanding performance in operations and engineering.

In the attack carrier division of competition, the USS *Hornet* finished the fiscal year as number one in a field of eight to win a Battle E for herself. The *Shangri-La* was runner-up.

The operations efficiency award for attack carriers in the Pacific was won by the *Shangri-La* while *Kearsarge* took top honors in air efficiency. The *Bon Homme Richard* won the engineering E, and the *Hornet* won a second E for having an outstanding supply department.

Among seaplane tenders, the *Salisbury Sound* edged out the *Kenneth Whiting* for Battle E honors, and also took E's in operations, air efficiency and engineering. Individual E awards for outstanding supply department were won by small seaplane tender *Orca*, aviation supply ship *Jupiter*, and guided missile ship, *Norton Sound*.

Safety on Upward Trend

Accident Rate is Down 20 Per Cent

The Naval Air Training Command, the Navy's largest shore based command, shaved its accident rate for fiscal year 1958 20 per cent over the 1957 rate. The figures have been released by Vice Admiral Robert Goldthwaite, Chief of Naval Air Training.

A rate of 1.94 accidents per 10,000 flying hours was the lowest ever recorded by the Naval Air Training Command.

The accident rate for the Pensacola-based Naval Air Basic Training Command in fiscal 1958 was 1.83 accidents per 10,000 flying hours, a reduction of 32 per cent over 1957's 2.66 rate.

A more intensive safety program with greater supervision from the top down is responsible for the lowered accident rate according to Cdr. W. R. Moore, assistant safety officer for the Chief of Naval Air Training.

AS TWA MEN *look on, two Navy men from NAS Moffett Field put a crippled Super Constellation "on its feet" at San Francisco after the plane's landing gear collapsed. The Navy inflated lifting bags did the job.*

CPO POINTS TO FAVORITE PLANE, DH-216

CPO Matott Retires on 40

Piped Ashore at NAS North Island

Willard (Uncle Bill) Matott, ADC, has retired from the Navy after logging 40 continuous years in Naval Aviation. The 69-year-old chief was piped over the side by members of VF(AW)-3 at NAS NORTH ISLAND.

Matott made chief in Dec. 1921.

CNO Commends Blue Angel

Pilot Lands a Disabled Tiger Jet

The Chief of Naval Operations, Admiral Arleigh Burke, has commended a 31-year-old Navy pilot who landed a disabled F11F *Tiger* jet on a Buffalo, New York, airport instead of ejecting from the aircraft over a populated area.

Naval aviator, Lt. John R. Dewenter, elected to stay with the carrier-type jet fighter despite the fact that following a muffled explosion and severe vibrations, the craft's temperature soared past the point where ejecting from a jet is considered an absolute pilot safety requirement.

Lt. Dewenter, a member of the Navy's "Blue Angels," was participating in an air show with fellow team members when the incident occurred at 8,000 feet on August 2, over Clarence, New York.

Adm. Burke's message of August 3, to the aviator said: "Your magnificent action in landing your aircraft rather than hazarding the lives of the civilian populace reflects the highest credit on yourself, the Blue Angels, and the Navy. Well Done."

The aviator landed the F11F on a 5,600-foot runway. The high speed necessary in the emergency landing caused the jet to overrun the runway by several hundred feet. The remaining five members of the jet team continued the Navy's big demonstration.

Construction at El Toro

Major Improvements are Underway

MCAS El Toro, Santa Ana, Calif., is undergoing a giant face-lifting which will make it one of the largest military air stations in Southern California.

Three of the giant construction jobs will be completed in the summer of 1959. The three jobs are: construction of four three-story barracks for enlisted men; the extension of one of the aircraft runways plus installation of the approach lighting system and an optical landing system and construction of a medium range radar air traffic control center.

The control center is located in Pleasant Peak in the Cleveland National Forest, an elevation of approximately 4000 feet. It will provide coverage on all air traffic within a 100-mile line of sight of 50,000 feet altitude. Control can be effected to feed as many as three aircraft into the final approach pattern all at the same time.

NEW DELMAR *target system, attached to F4D Skyray at Moffett Field, is introduced on West Coast by VF-213. System is used in lead collision interceptions in which intercepting fighter approaches the target at head-on angle.*

86,000th Landing is Made

Essex Second Only to Old Saratoga

Lt. Otho W. Crowl landed a *Fury* fighter aboard USS *Essex* to record 86,000th landing on that carrier. This record is second only to the 98,549 landings made aboard the old *Saratoga* (training carriers excluded).

When the *Essex* left Mayport, Fla., in February she had a total of 79,568 recoveries. The 86,000th landing was made during operations off Beirut.

NAVY MIRROR LANDING SYSTEM *was adapted by Convair to facilitate recent tests of its F-102A Delta Dagger. System's glide path feature permitted completion of gear loading tests in 67 landings instead of 200 landings expected if the mirror-controlled flight testing had not been used. Test pilot C. E. Myers, Jr., former Navy pilot, in checking 60 different landing configurations with canopy removed, established vertical sink rates varying from three to ten feet per second. Tests also involved single-wheel touchdowns. In all, test series wore out 20 sets of tires.*

RESCUE SEAT IS EFFECTIVE

Eighteen of 20 air-sea rescues made so far this year by helicopters of HU-2 have used the "triple saddle" rescue seat described in the May issue of Naval Aviation News.

The squadron's most recent rescues occurred in the Eastern Mediterranean and in the Atlantic. First, an HUP helicopter of HU-2 crashed immediately after takeoff from USS *Saratoga*. The helicopter had sunk an estimated ten feet before Lt. H. Bippus, the pilot, was able to free himself from the aircraft. Upon reaching the surface, the pilot was unable to locate his crewman, Airman S. Calhoun.

Lt. Bippus dove down to the fast-sinking helicopter. Unable to stand the prolonged period under water, he again surfaced to find his crewman, unconscious, about 50 feet away.

Ens. T. N. Tibbats, piloting the rescue helicopter, proceeded to the ditching scene and lowered the rescue seat. With Lt. Bippus supporting the unconscious Calhoun, both men were hoisted into the helicopter simultaneously. Calhoun was given artificial respiration by Edgar I. Brice, ADC, the helicopter's crewman, during the flight back to the ship where a doctor was waiting with an oxygen mask which brought him back to consciousness.

In the latest rescue to be reported, an AD-5N *Skyraider* of VA(AW)-33 was making a landing approach to the *Forrestal* when the plane suddenly began to lose altitude. Within 30 seconds of its ditching, an HU-2 rescue helicopter piloted by Lt. D. R. Brown, with Airman R. P. Smith flying as crewman, arrived at the crash scene.

Again the triple-saddle seat was employed to pull Ltjg. J. R. Dennison and J. F. McNamara, AE2, pilot and crewman of the *Skyraider*, out of the water simultaneously.

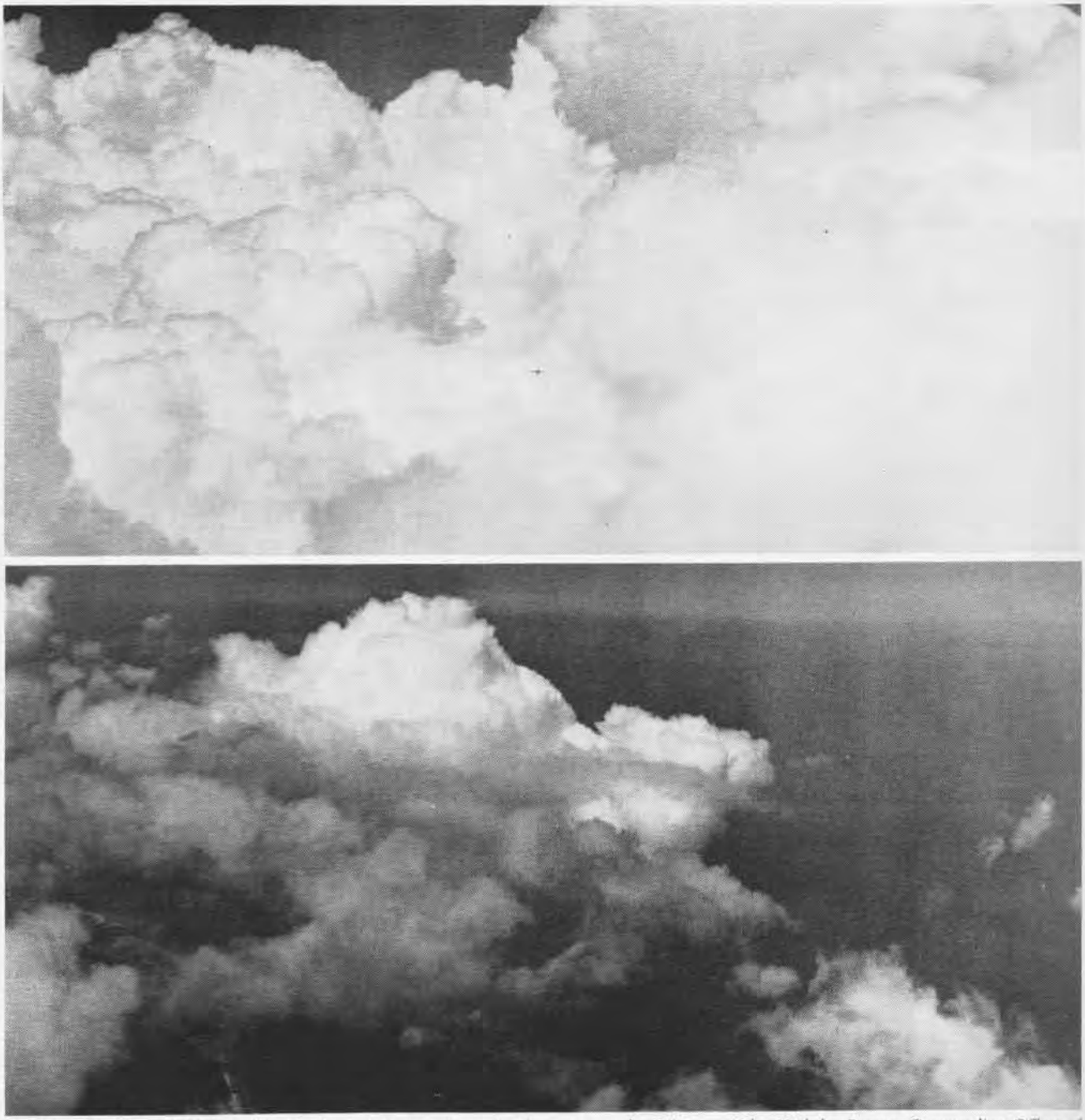
The rescue was made difficult by the fact that it was almost dark and all normal visual references for the helicopter pilot had been lost 10 minutes before the crash.

The outstanding ability of the helicopter crewman in maintaining a steady flow of information to the pilot about the helicopter's position, as well as what the survivors were doing in the water, made it possible for the helicopter pilot to hover over the rescues and complete the mission. Both survivors were landed safely aboard the *Forrestal* within six minutes of the *Skyraider's* crash into the sea.

• In 12 seconds, a modern research plane can fly five and a half miles. The Wrights' first plane took 12 seconds to fly 40 yards.

• There are 1,658 officers and 13,314 men in the TAR program billets. In addition, 418 officers and 3,295 men in Regular Navy billets devote their full time to the Naval Reserve.

CLOUDS, CARBON AN



THE SUPER CONSTELLATION *used in the cloud project is shown (top) against the type of cloud formation in which the "carbon" runs were made. Pilot was Cdr. Nicholas Brango, Commanding Officer of VW-4. The lower picture is the final one of a series taken during a run.*

CHANGE

A WOMAN SCIENTIST in Washington has described the results of an experiment that was carried off with the simplicity of a wheel, the economy of a five-cent cigar and the possible consequences of a harnessed atom.

She is Dr. Florence W. van Straten, a meteorologist with the Naval Weather Service in the office of the Chief of Naval Operations.

The experiment she headed in July was made to explore a new technique in the creation and destruction of cloud formations. Under Dr. van Straten's overall direction, main participants in the tests which were run July 29-31 over the Florida coastline were Mr. R. E. Ruskin of the Naval Research Laboratory, who served as scientific advisor, and Cdr. Nicholas Brango, commanding officer of Navy Airborne Early Warning Squadron Four, who directed operations. Heavy Photographic Squadron Sixty-Two provided camera coverage.

Photographs in hand, Dr. van Straten described how, several times in a row, the Naval weather team disintegrated specific clouds and created clouds in an area of atmosphere that was cloud-free.

The Naval Weather Service meteorologist refused to discuss the military and economic potentials that might ensue from the experiment if the technique can be proved and perfected. She made this analogy:

"Sometime in the past—say in the 'Thirties—a scientist held up a photographic plate of a Wilson cloud chamber in which several little streaks showed up. 'Why, that uranium atom must have split!' the scientist probably exclaimed. But at that time, no one could reasonably have stated from that photographic evidence that we could ever use atomic energy.

"Let me make myself clear. I'm not comparing our demonstration with atomic energy. I'm trying to point out that if the man who looked at that first photographic plate of the uranium atom started predicting about bombs and reactors, he would have been a fool. If we predict at this time what we may get out of our work, we would deserve the same label. We have only demonstrated an effect. It has to be studied and proved scientifically. Now we need measurements, analyses and controls. Much research is ahead of us; many questions need to be answered."

Even though Dr. van Straten would not discuss the future application of the technique she used, it is well known that previous programs of cloud modification have had as ultimate goals certain practical aims:

1. The dissipation of fog and low stratus clouds when and where they occur.
2. The dissolution of clouds for any purpose.
3. The prevention of tornadoes and hailstorms by limiting thunderstorms before they can become dangerous.
4. Hurricane control.
5. Reduction of rainfall in flooded areas.
6. Production of rainfall in certain areas.

The "secret" ingredient of the tests off Florida was carbon black—the same basic substance that forms inside the chimney of a kerosene lamp and which is used in making rubber tires black and printer's ink stand out on white paper. Particles of the substance used in the experiment measured about two millionths of an inch in diameter.

Thirteen "carbon" runs were made in WV-3 *Super Constellation* aircraft normally employed by the Navy's *Hurricane Hunters*, with an attack plane and a utility plane used as photographic chase aircraft.

Seven clouds were destroyed in time spans ranging from two and a half to 20 minutes, depending on the size of the cloud and the quantity of chemical used. Three single clouds and one line of clouds were created in a cloud-free region of the atmosphere.

Total cost of carbon used in the experiments was less than five dollars. Quantities varied from one-and-a-half-pound packages of dry particles strewn in the air to a six-pound quantity suspended in liquid and poured in a line.

Describing a typical "dissipation" run, Dr. van Straten said the *Connie* flew into the upper region of a cloud whose base was 5000 feet high and whose top was 11,000 feet. At her signal, Mr. Donald Purdy of the Naval Research Laboratory dropped a pound-and-a-half of carbon black which was enclosed in a paper wrapper and sealed with scotch tape which was pulled open by a static line.

THE PILOT of the AJ *Savage* chase plane turned on his cameras when the drop was made. In sequence exposures, he recorded the complete disintegration of the cloud within 20 minutes.

On a "cloud-making" run, a solution of six pounds of carbon black suspended in five gallons of liquid was poured over a mile track as the *Connie* flew at 4000 feet altitude. A line of clouds formed over the track, with bases at 3000 feet and tops at about 6000 feet.

In explaining the steps which led up to the Florida experiments, Dr. van Straten indicated how this test differed in principle from previous attempts at cloud modification.

One of the first elementary theories taught to students of meteorology is how a rainstorm develops in middle latitudes. A cloud forms and grows in an unstable atmosphere. The water droplets which make up the cloud are very, very fine and do not fall under the influence of gravity. Nothing happens in the growing cloud until the top of the cloud extends into altitudes at which temperatures are below freezing. Once below-freezing temperatures are reached, some of the water droplets *may* change to ice. Once some ice particles are present in the cloud, that cloud is ready to produce rain. What happens is that water evaporates more rapidly from the liquid water droplets than from the ice crystals. The net effect is that the ice crystals grow at the expense of the liquid water drops. The larger ice crystals become heavy enough to fall and, in dropping through the atmosphere, melt and form rain.

Previous experiments in cloud modification using dry ice (solid carbon dioxide) and silver iodide crystals were designed to capitalize on this mechanism. Water droplets do not necessarily form ice crystals immediately on reaching freezing temperatures. To start the process of freezing, one of two conditions must prevail. Either the temperature must get very much below freezing or a nucleus must be present on which the ice can form. The dry ice is used to get the much-below-freezing temperature. The silver iodide provides the nuclei.

These methods of cloud modification cannot work until the top of the cloud has reached the freezing altitude; they cannot touch warm fog, for example, or dissipate a warm cloud which may be a potential thunderstorm. These techniques are therefore quite limited. What is not explained adequately is how rain forms in the tropics from clouds which do not get anywhere near the freezing point.

Dr. van Straten pondered on this from time to time and finally evolved an explanation which seemed satisfactory to her. The whole mechanism apparently depends on rates of evaporation. There is very little difference in the rates of evaporation between a water droplet at, say 22° F and one at 23° F, so that there is little tendency for the cooler droplet to grab water from the warmer droplet and grow. When you consider these cold temperatures, you must depend upon the larger difference in rates of evaporation between ice and water. But let us look at warmer temperatures. Suppose we think of a droplet of water at 60° F sitting next to one at 61°. What is the difference in rates of evaporation? It turns out to be 3 times as great as the difference between ice and water at

REELS OF PICTURES *taken during the "carbon" runs on clouds are part of the important record of the project by which Navy scientists began to check a new hypothesis. By studying the pictures in each*

22°. Surely, it was not unreasonable to believe that in the tropics, one water droplet coming in a down draft from the top of the cloud would sometimes get close to another water droplet which had been caught in an updraft. The temperatures would be different and the cooler droplet would grow. Tropical rain seemed to be explained. From this, only one more step was required to develop the new hypothesis about cloud modification. How could one artificially produce the temperature differences in clouds?

'Black' was the answer. Black clothes are warmer to wear in summer than light clothes because they absorb the sun's heat. In the Antarctic, potholes develop in the snow where oil is dropped while servicing airplanes.

"My reasoning was that if we could influence the *temperature* in parts of the atmosphere, we could dissipate cloud masses that exist, and, under some conditions, we could create cloud masses," Dr. van Straten said.

She believes that three mechanisms may contribute to the process:

General heating with attendant evaporation of liquid water droplets;

A modification of the stability of a column of atmosphere: heating at the bottom producing instability and heating at the top stability;

A distillation process by which heated droplets transfer to cooler droplets, causing them to grow and fall, initiating the precipitation process. (As a matter of fact, earlier workers in warm cloud modification seeded with water in their attempt to achieve this effect.)

"As I see it, to get the answers, we must now follow a three-stage process. First, a phase to study the cloud physics of these experiments. NRL has started on this. We must find out just what we are doing to the atmosphere. We must determine the limitations of this method.

"Secondly," she continued, "and as soon as these are known, we can begin trying to achieve *effects* on fog, stratus or thunderstorms.

"Third, if the other phases work out, we will enter the exploitive phase. This involves the details of hardware and techniques which can be used by aircraft, ships, bases, etc., to get the maximum payoff."

Then she outlined the early experiments that led up to the cloud-busting and cloud-making experiments which the Navy team pulled off so successfully in July.

Shortly after the carbon cloud treatment idea was conceived, a laboratory experiment was designed and conducted by Dr. van Straten and Dr. J. E. Dinger, Head of the Aerology Branch of the Naval Research Laboratory.

A high altitude chamber at the Naval Research Laboratory in Washington was redesigned to act as a cloud chamber. Alternate runs, with and without the introduction of carbon black, were made. Because of wall effects and the inability to remove all the carbon for the control runs, the results were not clear-cut.

Capt. Paul R. Drouilhet, then Director of the Naval Weather Service, saw the potential merits of the proposal and authorized arrangements to be made for conducting a series of tests in the atmosphere which, by then had been deemed the only proper "laboratory" for such experiments.

column, the reader can watch the progress of two clouds being dissipated. The time intervals are: four minutes for the left-hand sequence and eighteen minutes for pictures in the right-hand column.

AND THERE I WAS ...

It's Only a Paper Diet

A (U. S.) Navy helicopter pilot was visiting Bogota, Colombia. Immediately he encountered an unsurmountable language barrier and had trouble telling the taxi driver he wanted to go to a hotel.

Once there, he decided to eat dinner. The menu arrived and, naturally, he could not read it.

He attempted to tell the waiter he wanted a steak.

"*No comprehende, Senor.*"

The pilot drew a picture of a bull, then he made hand gestures to indicate the killing of the animal, the butchering of the carcass, and the cooking process.

"*Si, Senor,*" said the waiter, who hurried off to return with two tickets to the local bullfights.

Likes That Squadron

Capt. F. Quandt, Phl, has been in and out of Photo-Fighter Squadron 62 so many times he has the personnel clerks in a dither. He first reported aboard in April 1949 when the squadron was designated VC-62.

He stayed just long enough to deploy aboard the USS *Midway* and was transferred in December.

He came back for seconds in February 1953 and stayed for 33 months, going with the squadron aboard the *Wasp*, then for a world cruise and a Seventh Fleet cruise aboard the Coral Sea. He left in November 1955.

Quandt returned to the squadron November 3, causing a plank-owner in the squadron to mutter: "From watching this man come and go, I'm beginning to realize that I've been here a long, long time!"

To Heck with all Hexes

On Friday the 13th, 2nd Lt. Eugene L. Wheeler flew F4D *Skyray* number 13 for his 13th hop and chalked up the 5000th hour of accident-free flying for jet aircraft of Marine All-Weather Fighter Squadron 531 at MCAS Cherry Point, N. C.

In line with the occasion, MSgt. George N. McLoughlin, line chief, and MSgt. Robert P. Huebner, maintenance chief, congratulated the pilot by a handshake through ladder's rungs.

Delighted, Ya Know!

The article, "707 Meets Tu-104," written by Chester Chatfield, in the Boeing Magazine, opens in a true British manner:

"When a Boeing 707 jet airliner sat down with a Russian Tu-104 at the Vancouver International Airport on June 15, not a cup of tea was spilled or a crumpet tossed. This was British Columbia's Centennial Air Show. Good sportsmanship prevailed, competitors smiled and only one exclamation was heard. The remark was untranslated. It was made by a Russian in delighted astonishment, as he got his first look at a Canadian girl attending the show in shorts."

Boom is Beneficial

A West Coast lady possessed a small, artistic, French-style clock to which she attached considerable sentimental value. However, the clock was kept as a dressing table

ornament because, though wound, it had not run for a number of years.

An airplane flying over the southern San Joaquin Valley created a sonic boom which started the clock and kept it running for several weeks.

Pleased to learn that a sonic boom had been reported under a favorable circumstance, a Bakersfield Naval officer reported the incident to the Eleventh Naval District Commandant. "But," he concluded, "it is considered neither desirable nor feasible to use supersonic service aircraft for the purpose of starting clocks."

Ruff Reenlistment

The Marine Corps continues to have the service of a topnotch "barker." Private First Class Ruff has "shipped over" for six years.

Ruff is the canine mascot of Marine Air Base Squadron 11, based at NAS Atsugi.

The Arfenese citizen, finding Marine life much better than a dog's life, is believed to be the first dog to enlist in the Western Pacific area.

Before entering the Marine Corps—no one is quite sure when Ruff originally joined and Ruff wasn't yapping about it—the canine held the job of hound dog and food devourer. Credited with an outstanding military career, he holds the Dog Medal with one star, Good Conduct medal and K-9 Citation among his decorations and awards.

Ruff took his reenlistment with modesty. Like a good Marine, after renewing the oath, he trotted out of the squadron office, hesitated by a tree, and then continued his duties.

Obviously it's all in a military dog's life.

'DEATH RATTLERS' SHOW HUSTLE

PILOT AND MECH MAKE PRE-FLIGHT CHECK

LT. A. BREWER IS CINCHED UP FOR FLIGHT

SGT. J. WEASTON CHECKS FURY'S WEAPONS

MARINE FIGHTER Squadron 323 completed the first year of its third tour in the Far East this summer. Flying FJ-4 Furies with the "Death Rattler" symbol of yellow diamonds over a Navy-blue ribbon, VMF-323 pilots crowded a lot of accomplishment in the year's deployment.

In January the squadron logged 1068.5 flight hours, a new high for FJ-4's in the Western Pacific. The feat required maintenance shop crews to make rapid repairs, and operations and intelligence men to work overtime to keep aircraft in the air.

In February the squadron reached its 10,000th hour of safe flight. Lt. Col. Daniel L. Cummings, squadron commander, points out, "Not a single aerial injury or fatality since the squadron began flying *Furies* in 1956."

Safety consciousness, incidentally, is practiced by all hands, as evidenced by waste cans along the flight line which bear the legend: SAVE A JET!—a reminder to keep debris off the runways.

Nor has travel been neglected. Since arriving at NAS ATSUGI, Japan, the squadron has flown in numerous Air Defense exercises and three combined Navy-Marine Corps assault exercises. The *Rattlers* have been called by some, "The travelin'est Marine Fighter Squadron in WestPac."

There is an understanding by each man in VMF-323 that his job is important to the whole effort. The greasy-handed mech, the structural expert with skinned knuckles, the technician operating the meter, the ordnanceman repairing a gun, and the clerk at the squadron typewriter pull together as a team.

Extremely proud of their records, men of the squadron don't rest on their laurels. Current target, for example, is to capture the Marine Air Group 11 aircraft recognition trophy.

The squadron's training syllabus includes air support, destruction of enemy aircraft and missiles, aerial visual reconnaissance, protection of Marine and Navy close air support aircraft, and operations aboard carriers.

FURY PILOT GETS 'COME ON' AS HE TAXIES TO TAKEOFF STRIP

BRIEFING OFFICER LECTURES PILOTS ON USE OF SURVIVAL GEAR

NARTU NORFOLK'S SUMMER BOOT CAMP

FORCED MARCH *and survival hike in double time was taken by the young airman recruits undergoing the 85-Day Accelerated Training Program at NARTU Norfolk. Cdr. R. S. Thomas, leading the group, is an Industrial Arts teacher in Roanoke, Virginia, the rest of the year.*

THREE DAYS *of amphibious operations at Little Creek were included in the curriculum. The future airmen took to the sea in rubber boats, landed and attempted infiltration through "enemy"-held territory. This gave them practice in boat handling and patrol tactics.*

AIR-SEA RESCUE *demonstration was held for the reserve recruits. Pilots of Helicopter Utility Squadron Two, Detachment 1, improved their proficiency, while the trainees, under the watchful eye of Chief Maltby, learned the technique of being rescued at sea.*

OUTSTANDING *Basic Rate Trophy winner, R. K. Forrester and Outstanding Recruit, W. A. Ethridge are congratulated by LCdr. Joyner.*

ON-THE-JOB *training is the byword at NARTU Norfolk. The recruits got some insight into how the Weekend Warriors "keep 'em flying."*

HUNDREDS of young men have gone back to high school this fall with a seabag full of sea stories to tell their classmates. A select group of Naval Air Reservists, they've spent the summer at one of the 22 Naval Air Reserve Training Activities throughout the country, going through 12 weeks of tough boot training.

Lads from all over Virginia and neighboring parts of North Carolina go to NARTU NORFOLK, commanded by Capt. R. S. Rogers. The 85-Day Accelerated Training Program is given to Reserve Airman Recruits who have a combined GCT/ARI score of 100 or above. It is designed to give boys between 17 and 18½ years of age all required basic training while they are still in school, and to give them the chance to be rated before going on active duty for two years.

Students join the Naval Air Reserve for a minimum of six years and are assigned to the squadrons of their choice. Until they make Airmen Apprentice, however, they are attached to the Recruit Division for drill purposes. When school is out for the summer, eligible trainees report to NARTU NORFOLK. At the end of six weeks, they take the AA test and are advanced if they pass it and meet length of service and drill requirements. The Airman exam is given toward the end of the training period. If successful, they are promoted as soon as they complete three months duty and 12 drills with their squadrons.

When the program ends in September, the reservists go home to finish high school, and to participate in week-end drills with their squadrons. Each boy can expect to receive orders to report for two years active duty within the first three years of his obligated service time.

However, if he wishes to attend a second summer of training, his call to active duty is delayed until completion in order to give him an opportunity to qualify as a petty officer third class.

THE SECOND summer is devoted to Basic Rate training. The reservists undergo another 85 days of intensive training striking for particular rates. At the end of this period, they are eligible to advance to Third Class Petty Officer, if they have completed six months and 24 accredited drills as Airmen.

If the individual has a very high GCT/ARI and has done well during the two training courses, he may go on with any college plans and expect to finish if he stays in the top 10% of his class academically. He is, of course, also eligible to apply for the Naval Academy or the NROTC four-year college program.

NARTU NORFOLK's Aviation Technical Training Department, headed by LCdr. M. M. Manger, administers the 85-day Recruit/Airman course. Most of the instructor staff are called to active duty for 90 days specifically to handle the boot camp. LCdr. W. D. Joyner is Officer-in-Charge of the Recruit Training Program and also Administrative/Personnel Officer of VA-861. He is a high school math teacher by profession and can be counted on to bring along several of his students as trainees.

D. R. Maltby, QMC, an insurance agent, serves as Chief Master-at-Arms and Leading Chief. Other instructors on summer duty are: D. L. Sexton, ADJC, J. D. Skeenes, AMS1, and E. H. Knox, ADR1. TAR personnel, however, supervise the program overall, technical parts in particular.

Days are long and full for the young recruits. Reveille is held at 0530 and taps sound at 2200. Classes start at 0815 and end at 1430. Military drill, athletics, watch standing and study hall take up the rest of the day.

There's classroom instruction in the Bluejackets' Manual, basic Navy seamanship, customs and courtesy, Uniform Code of Military Justice, moral leadership, hygiene—in short, just about everything offered at a Regular Navy boot camp. There are field trips, too. Three days amphibious training at Little Creek includes boat handling, infiltration and enemy patrol tactics.

HIGH ALTITUDE pressure chamber indoctrination, air-sea-rescue with helicopters and practical fire-fighting techniques are part of the curriculum.

No liberty ashore is permitted the first few weeks, and naval discipline is rugged throughout. However, the lads who successfully complete the Accelerated Training Program not only feel a great sense of accomplishment, but feel they are ready to do their share as members of the "first team."

AIR RESERVE OUTFITS COMMISSIONED

CDR. M. HARRIS, ADIO, TALKS WITH ATLANTA AIRTU OFFICERS

CAPT. SLATER (L) OFFICIATES AT OLATHE AIRTU ACTIVATION

FROM MANY sections of the Naval Air Reserve Training Command comes word of new units and squadrons going into commission. Reasons behind the forming of each vary; the end-purpose remains the same—to have in being the most efficient organization possible to meet any threat to national security.

Reorganization of the Air Intelligence program brought about the commissioning of Air Intelligence Reserve Training Units. Last February CNaResTra put into effect a new intelligence syllabus for Reserve Officers. Composed of 30 lessons covering a two-and-one-half-year period, it includes subjects ranging from basic intelligence to guided missiles and special weapons, with photo interpretation and radar analysis thrown in. In the event of mobilization, officers in the program can be used in any fleet billet requiring air or radar intelligence experts.

Along with the new syllabus, a reorganization of air and photo intelligence administrative units was authorized on 1 July. Essentially all AGU's were deactivated. Officers attached, in addition to air and photo officers on Air Wing Staffs, were ordered into 13-officer units.

At NAS OLATHE, Capt. F. M. Slater, the commanding officer, read the commissioning orders for AIRTU 881, skippered by Cdr. J. A. Carmody, and 882 with LCdr. C. C. Richardson at the helm.

Three intelligence units were formed at NAS ATLANTA, commanded by Capt. R. E. Steiler: AIRTU 671 with Cdr. Al Koper commanding; 672 headed by LCdr. F. D. Whipple, and 673 led by Cdr. A. O. Bragg.

Anacostia, Columbus, Dallas, Denver, Glenview, Grosse Ile, Jacksonville, Las Alamitos, Miami, Minneapolis, New Orleans, New York, Oakland, South Weymouth and Willow Grove also have units. Total authorized number is 44 and the programs are administered by Assistant District Intelligence Officers (Air).

There's news in other fields besides the cloak and dagger business. Officials at NARTU MEMPHIS placed in service Fleet Tactical Support Squadron 793, composed of 34 reservists from Missouri, Illinois and Indiana. The military careers of these Weekend Warriors were jeopardized by the deactivation of NAS St. Louis. As members of VR-793, they are now airlifted from the St. Louis Municipal Airport to attend week-end drills.

Cdr. E. F. McKay commands the squadron which has R5D's.

NARTU JACKSONVILLE reports the formation of VR-742, headed by Cdr. Charles Deneen, an engineer for the Glenn L. Martin Company of Orlando.

Capt. James W. Condit, C.O. of the Naval Air Reserve Training Unit, Lakehurst, announced the commissioning of Air Anti-Submarine Squadron 753. Flying the S2F *Tracker*, VS-753 brings the total of Lakehurst reserve outfits to nine: three heavier-than-air, three lighter-than-air, and one helicopter; a BARTU and an AW Staff.

MEMBERS OF VR-742 FORM IN RANKS FOR COMMISSIONING CEREMONIES AT NARTU JAX

Panther Jet is Monument

Bee County, Tex., Acquired It

Bee County, a farm and ranch county in south-central Texas, is proud of the fact that the courthouse has a new distinction. On its lawn is a Navy jet fighter, a monument to the jet age.

At the same time NAAS CHASE FIELD has one less F9F-2 *Panther* to send to the scrap heap. This old jet fighter, newly painted and highly polished, has a new lease on life, thanks to the Bee County commissioners.

The *Panther* was used by the Navy aboard the carrier USS *Bon Homme Richard* during the Korean conflict. The last year of its career was spent at Chase Field as a training aircraft in Advanced Training Unit 223.

During the period that ATU-223 was phasing out the F9F-2 in favor of the more modern F9F-8 *Cougar*, this aircraft sustained heavy internal damage as a result of an electrical fire. Since the *Panther* was shortly to be sent to the Navy's graveyard for obsolete aircraft, it was determined to be economically impractical to repair it.

The Bee County Commissioners decided to request the plane as a monument. Once this request was approved, the interior was stripped of all usable equipment, and the controls were safetied. The *Panther* was given a brand new coat of paint in the training command colors, orange and white. The insignia of ATU-213 and ATU-223 were painted on the nose.

Eleven men at Chase Field gave their spare time to get the *Panther* ready.

PANTHER BECOMES BEE COUNTY TROPHY

Capt. T. D. Harris, on behalf of all the men at Chase Field, presented the aircraft to Bee County. In making the presentation, he said, "This airplane is placed here to remind residents and Navy men that the Navy is truly a part of Bee County."

Patuxent River Is Host

Civil Air Patrol Holds Encampment

Approximately 232 members, 210 of them cadets, of the Civil Air Patrol held their 11-day summer encampment at the Naval Air Test Center, Patuxent River, Maryland.

They were in uniform at all times, lived in barracks, ate Navy chow and were subject to all station regulations.

The cadets were given a thorough indoctrination program, which included demonstrations of the steam catapult, planes making mirror approaches and arrested landings, and aerial armament delivery techniques.

Time was devoted to inspection of the Electronics Test Division and the Naval Air Station Operations Division. The cadets learned directly about certain things they had learned in textbooks. The encampment also gave them familiarity with military life.

Marlin Crewmen Welcomed

New Mexico Townspeople Thanked

When a P5M seaplane developed engine trouble in flight between Corpus Christi and San Diego in June it headed for an emergency seadrome near Truth or Consequences, N. M.

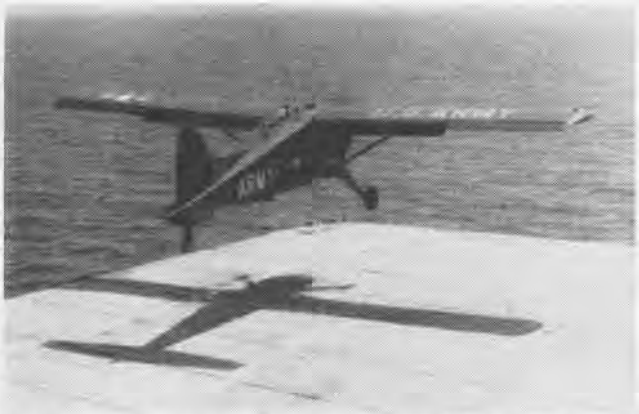
Local citizens, hearing the aircraft's plight, cleared all small craft and drift from Elephant Butte Lake, selected a suitable mooring, and set about planning how they would welcome the crew.

Safely down, the three officers and five men of the crew were provided a car, a boat, a motel room, recreational equipment, and invited to a luncheon by a local club.

When a plane from North Island arrived with parts and mechanics to repair the P5M, the town's hospitality was extended once more.

Latest development in the exchange of warm-hearted correspondence between the Navymen and the townspeople is that Truth or Consequences has named the crashed plane's crew and repair party as honorary mayor and commissioners.

First 'act' of the Navy administration was to present a plaque, bearing the VP-46 insignia, and a vote of thanks to the hospitable townspeople.



IN THE LEBANON CRISIS, *the services again proved their ability to work together as coordinated units. Above, a U. S. Army L-20 "Beaver" utility aircraft takes off from the deck of the Navy transport carrier Corregidor (T-CVU-58) at sea off Beirut, Lebanon. Over the same carrier (above) an Army helicopter hovers in the background. The H-34 helicopters belong to the aviation company of the U. S. Army's 24th Infantry Division and were transported to Lebanon by the USS Corregidor, which is a unit of the Military Sea Transportation Service.*

VF-33 'ASTRONAUTS' *pose by F11F-1 which helped squadron pilots log 913.1 hours and 824 sorties in a month for squadron record. They are (bottom row L-R): Ltjgs. J. S. Gardner, R. L. Cobb, P. W. Williams, Lt. J. A. Holshouser, LCdr. A. R. Seiler (CO), LCdr. L. N. Smith, Ltjgs. J. H. Flatley and L. Lee. Top row: Ltjgs. F. D. Majors, E. D. Robbins, G. L. Woodruff, Lts. J. R. Foster, A. E. Ostrand, J. V. Healy, Ltjgs. W. B. Lewis, R. W. Moore, C. C. Claflin, A. E. Franzblau.*

Makes 60,000th Landing

10,000th Mirror Approach Scored

Flying a Grumman S2F *Tracker*, Ens. Ronald G. Jones of VS-38 made the 60,000th arrested landing, and simultaneously, the 10,000th mirror approach on the carrier *Kearsarge*.

Said the pilot: "If I had known I was setting a record, I would have been too nervous to see the mirror."

Lockheed's New Contract

Additional P2V-7's are Ordered

A BuAer contract of over $21,000,000 has been awarded to Lockheed Aircraft Corporation, Burbank, California for 26 P2V-7 *Neptune* antisubmarine airplanes and equipment.

This is the 27th order for the *Neptune* since the first model was built in 1944, and will extend production of the airplane through 1960.

Seven successive models of the basic *Neptune* design, including the latest P2V-7, have served as the standard land-based, antisubmarine aircraft for the U. S. Navy.

Neptunes currently in production will become operational with the United States and French Navies. Other airplanes in this series have also been delivered to the military services of Great Britain, Australia, Canada, as well as Netherlands and Japan.

The current model is powered by two Wright turbocompound engines. Two J-34 jets provide additional power needed for short field take-offs.

Vaccine Flown to Thailand

New Inoculating Gun Supplied

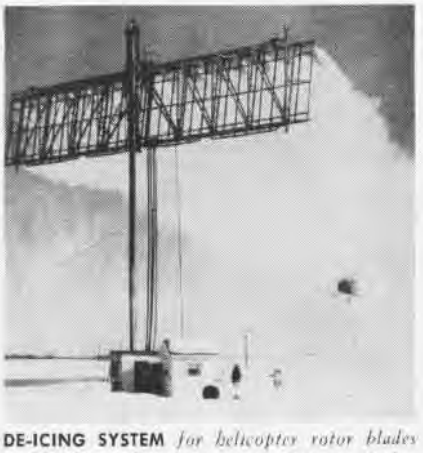
A Navy doctor with enough cholera vaccine to inoculate 50,000 people was flown to Bangkok, following a request for aid in combatting the disease. Thailand already had at its disposal 17,000 vials, enough for 680,000 people.

Capt. Edward A. Anderson, MC, whose base is NAS Norfolk, took with him a special type inoculating gun developed by the Scherer Corporation of Detroit, Michigan. The company presented a number of the Multi-Dose Hypo-Spray Jet Injectors to the Thai Government. The only pain associated with the instrument is from the vaccine itself, as no needle is present.

Already in Thailand were nine members of Naval Medical Research Unit Two, regularly assigned to the Taiwan Defense Command in the Western Pacific.

The team included two doctors, Capt. R. A. Phillips and LCdr. R. H. Watten; and a Chinese scientist, Dr. Wangsan-Ping, assigned to the unit. The other members were: Cdr. R. F. Kuntz, MSC; Ltjg. M. S. Gates, MSC; I. B. Stacy, HMC; C. E. Knight, HMC; HM1's Wilder and J. Reese.

LT. R. H. BAKER, JR., *of VAW-12 models flight instrument hood he designed. Fabricated in light metal by J. O. Peckham, AMC, for use in ADSW, it eliminates outside vision and affords pilot good view of instruments.*



DE-ICING SYSTEM *for helicopter rotor blades is tested by Bell engineers near Ottawa. Other tests were made on Mt. Washington, N.H. and at Eglin AFB's climatic hangar in Florida. Bell's research was done under Navy contract.*

NAVY CHOW *is good and decorative, too, at NAS Barber's Point. J. A. Vickery, CSC, carved an ice fruit basket during a six week course in food preparation, at no cost to the government, in Royal Hawaiian Hotel galleys.*

FIRST AMERICAN *twin-propjet airliner, Fairchild's F-27, has been delivered to West Coast Airlines. The high-wing, 40-passenger plane is in volume production by Fairchild. Gen. James H. Doolittle dedicated first one.*

SALLY'S SAMISEN *Band, an idea of RAdm. P. P. Blackburn, Commander, Taiwan Patrol Force, greets USS Pine Island, new flagship, from decks of Salisbury Sound (AV-13). It's made up entirely of exotic oriental instruments.*

NINE GOOD REASONS *for flying safely, a wife and eight children, greet Lt. Wm. P. McDonnell as he climbs from T2V-1 cockpit after successfully completing a solo flight at NAAS Milton, Fla., where he is a flight student.*

Praised for Rescue Role

Crash Boat Crew Saves Yachtsmen

Seven crewmen of a crash boat at the Naval Air Missile Test Center, Point Mugu, have been commended by their officer in charge for the part they played in rescuing survivors from a sinking yacht near Los Angeles.

The civilian yacht had six crew members on board when it struck an underwater obstruction that ripped its hull. The yacht's captain had time to signal one "Mayday" before the craft began to settle.

A Coast Guard helicopter from Port Hueneme and the crash boat from Pt. Mugu raced to the rescue. Three crewmen were picked up by the helicopter and three were taken on board the crash boat.

The crash boat's crew then attempted to salvage the sinking yacht. They tried towing it but the cleats kept breaking. A crewman of the crash boat then placed inflatable life rafts under the bow and stern of the yacht to make it buoyant. It was towed in that condition for several miles, but was lost in heavy seas after eight hours of towing.

Crewmen of the Navy crash boat were Ralph Fuller, BM2, coxwain, Tony Sefcyk, ME2, Charles Pace, FA, William Amik, EN2, Robert Paquette, AN, Lewis Roland, SA, and Anthony Malone, FA.

The Phil Sea is Mothballed

Turned In to Pacific Reserve Fleet

The antisubmarine aircraft carrier, USS *Philippine Sea*, has been turned over to the Pacific Reserve Fleet and is now undergoing mothballing at the Long Beach Naval Shipyard. Preservation is being done by the ship's crew.

Work begun on September 2 is scheduled to require four months. Inactivation procedures on the carrier include shaping up of ship's logs and records, inventory of equipment and other administrative and clerical work. Topside gear, vulnerable to weather damage, will be stored below decks before paint and preservative is applied to the ship's exterior.

Before "sealing up" the ship, giant dehumidifiers will be installed at strategic points to circulate dry air. According to reserve fleet officials routine inspection of a central recording station on the ship will be made weekly. The central station electrically records the moisture content reported from the various dehumidifiers.

French STOL Successful

Breguet 940 Test Flights Good

In a test program in Paris, the Breguet 940 STOL completed seven flights and showed excellent handling and control characteristics at slow speeds. On one flight, the machine was airborne over 15 minutes and attained an altitude of over 3000 feet.

The 940 has four interconnected propellers. It utilizes the deflected slipstream principle to achieve near vertical take-off with a minimum payload. By accepting a very short take-off and landing run, the maximum weight which can be lifted vertically for a given power can be trebled.

Piasecki represents Breguet in the United States. When sufficient testing of the 940 has been completed, Breguet and Piasecki expect to proceed with plans for building a 16-ton version.

NEW BIRD *in the sky is Grumman's executive transport, the Gulfstream, shown here on its initial flight. Powered by two Rolls Royce Dart engines, the prop-jet, pressurized aircraft has a maximum cruise of 370 mph at 25,000 feet and a range of 2200 miles. Designed to operate from runways as short as 4000 feet, the Gulfstream can carry from 10 to 19 passengers. Other commercial aircraft produced by Grumman in the past were the Gray Goose, Widgeon and the Mallard.*

HELL'S ARCHERS OIL COMPANY

LINE CREWMEN INSTALL IN-FLIGHT REFUELING TANK ON BELLY OF AD-6 SKYRAIDER

SERVICE STATIONS in the sky are becoming a familiar sight to Navy pilots in Jacksonville since the *Hell's Archers* of Attack Squadron 104 began their in-flight refueling services for other local squadrons.

Flying the faithful prop-driven AD-6 *Skyraider*, VA-104 has been given the job of in-flight refueling in addition to its primary attack mission.

Deciding that the only way to approach the new job was with an all-out effort, officers and men of VA-104 have added humor to this often touchy job of pouring hundred of gallons of jet fuel from one plane to another while they are flying at high altitudes.

Special courtesy cards are being issued to pilots from other squadrons once they have successfully refueled from the AD-6 tankers. A written advertisement at the hangar advises customers that "VA-104 features JP-4 and JP-5, guaranteed to eliminate Burner Belch, Mach Knock, Shroud Shudder and Parachute Pucker."

To date three squadrons, VF-103, VFP-62 and VA-12, have taken advantage of the in-flight refueling and pilots of each squadron say the only courtesy lacking during the maneuver is windshield washing and the presentation of green stamps.

While refueling in the sky seems difficult to the non-flier, it is basically a simple maneuver which requires nothing more than top notch skill on the part of the two pilots.

One airplane, serving as tanker, is equipped with a long fuel line which has a large funnel-shaped drogue. This trails behind the tanker with the plane that needs fuel making a careful approach to make contact. A special fuel probe on the "customer" must be fitted into the drogue and once that has been done, the fuel is transferred rapidly.

The entire evolution can usually be accomplished in about five minutes. After refueling, the tanker remains ready to refuel another plane while the first one refueled heads on to the target or back into the fray.

To illustrate the amount of pressure under which the JP fuel is pumped from one plane to another, Cdr. Jack N. Durio, skipper of VA-104, estimates that one of his tanker planes could fill an automobile's gas tank in five seconds or less.

In addition to the added range given Navy planes by this special inflight refueling, the procedure provides a safety factor in carrier operations. No longer does the pilot returning to his carrier have to worry about running low on fuel. There will be an AD-6 ready and waiting to pump the precious fluid that keeps the jets in the air.

With courtesy their motto and an ever-cheerful grin for the customer, VA-104 pilots rate high in the service station business—about 10 or 15 thousand feet high, to be quite exact.

TRAINING AIDS VARY FROM .45 REVOLVERS TO CELESTIAL GLOBE

SPECIAL WEAPONS LOADING ON AN A4D AIRCRAFT IS EXPLAINED

COLLEGE OF ELECTRONIC KNOWLEDGE

By Arthur Brodsky, JO3

THE NAVY has developed an elaborate school and training system as part of antisubmarine warfare planning and operations. Typical of the schools where a man can get his "degree" in electronics training is the Fleet Airborne Electronics Training Unit, Atlantic Fleet, at Norfolk.

The school's curriculum is designed to familiarize, indoctrinate and refresh fleet personnel in the operational and tactical use of equipment and systems used in modern warfare.

Effectiveness of the program is insured by use of trainers, training devices, films and books.

In the Electronics Maintenance Training department, courses are designed to keep fleet men abreast of the latest techniques in the maintenance of their complex equipment. Courses vary in length from two to 90 days, depending on whether they are given as refresher or initial training, and on the content.

The Atomic Weapons Training department teaches delivery techniques to pilots and weapons loading to squadron loading teams. Courses vary according to aircraft types. Pilots selected for atomic weapons training are considered "top notch," for it is realized that a young officer in command of a delivery aircraft has the final decision to unleash with one bomb a destructive force equal to the total fire power of a WW-II carrier task force.

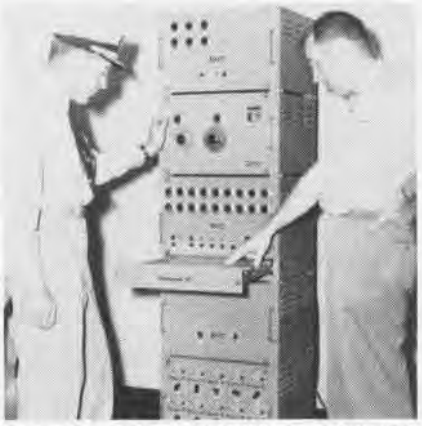
The course conducted by the Antisubmarine Training department is conducted in such a way that it provides study in the latest tactics, strategies and equipment. Gear used in this course includes sonar, radar, radio direction finding equipment, magnetic airborne detectors and electronic countermeasures equipment. Classroom lectures are supplemented by participation in actual operations.

The Operational Training department trains pilots and aircrewmen in the techniques necessary for the successful employment of various electronic devices. Survival is also included in the OT department's area of responsibility.

The Aviation Training Aids department provides ground training facilities, including the necessary training aids and devices, training film, and literature for the various classes.

The thoroughness of FAETULANT's training was attested when 75 out of 129 graduates who took fleet exams in February passed on their first try.

ASW TRAINEES GET AN OPERATIONAL HOP



ROOFTOP SONAR TRAINER IS EXHIBITED

SUB IS TRACKED ON CLASSROOM TRAINER

DRONE LAUNCHER DESIGNED

A NEW drone-launching system has been demonstrated at the Naval Air Engineering Facility, Philadelphia. It is called an "elastic cylinder type drone launcher."

A carriage, to which the vehicle to be launched is attached, contains a roller which fits tightly against a flattened length of standard six-inch diameter heavy duty fire hose. To fire the drone, compressed air is blasted into the fire hose, forcing the roller to carry the carriage up the track.

By increasing the pressure into the hose during the run, the carriage is accelerated sufficiently to keep the drone flying until its own engine can take over. The carriage drops off after launching.

The simplicity, economy, and light weight of the new system make it a great improvement over present drone launching methods.

In one launcher commonly used at present, the carriage is attached to an endless tape which passes over rollers at each end of the track. The tape is accelerated by a piston passing through a cylinder attached to the bottom of the launcher. This launcher is about twice as big and twice as expensive as the new elastic cylinder device.

The other method of launching in common use involves the use of a jet assisted take-off, with one or more JATO bottles being expended.

The experimental launcher is heavier and bulkier than the designed launchers will be. Actual launchers using the elastic principle will be constructed almost entirely of aluminum, and the track will be an integral part of the accumulator, the cylinder being used to hold the compressed air. The accumulators will be built with flanges at each end, so that many of them can be attached to launch heavier drones.

Each section will be about 20 feet long and weigh approximately as much as a small American automobile. One section will be sufficient to launch a 375-pound drone with an initial velocity of about 85 mph, using an air pressure to 500 pounds per square inch.

Tests indicate that three sections in combination would be sufficient to launch a 2000-pound drone at 200 mph, the maximum performance necessary for drone launching equipment.

Work on the compressed gas, electric cylinder type launching system has led to speculation regarding further adaptations of the principle. With a longer launcher using a non-explosive, liquefied gas, a vehicle could be launched at close to sonic speeds. Thus the launching system could, in effect, take the place of a first stage rocket booster and allow a much heavier payload to be carried aloft.

Although many problems, such as gas recovery and keeping gravity effects within tolerance for instrumentation, would be involved in developing this larger system, engineers believe that they could be overcome.

● Pilots from the carrier *Essex* flew 1184 sorties on road patrol, air cover and reconnaissance in the first two weeks of U. S. Peace Force landings in Beirut, Lebanon.

C.O. AND ENGINEERS AT NAEF STAND BESIDE NEW ELASTIC CYLINDER DRONE LAUNCHER

Japanese Officer Honored

Wins High Place in Electronics

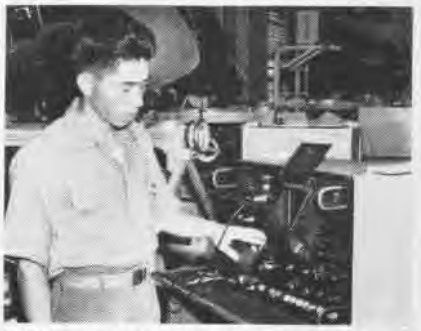
A Japanese Maritime Self Defense Force Officer, LCdr. Ryoichi Hamada, of Tateyama Air Base near Tokyo, received second high honors upon graduation from the 40-week Aviation Electronics Officers Course at NATTC MEMPHIS. He had an average grade of 94.505.

LCdr. Hamada received a letter of commendation from Capt. E. M. Stever, C. O. of the Technical Training Center.

Hamada stated that although he had studied English for eight years, the American version is different and it was the language that handicapped him more than the subject material.

The Japanese officer taught basic electronics in Japan for a year prior to coming to the United States.

He remained another four weeks to take a course in the Instructor School before returning to his native country.



HAMADA RANKED HIGH IN NATTC COURSE

Cherry Point Claims Record

4,000,000 Safe Man/Hours Worked

J. C. Sinclair, Safety Supervisor, Overhaul and Repair Department, MCAS CHERRY POINT, has announced that the department has not had a disabling injury or time-lost accident since October 1957, thus setting a new unofficial "man-hours safely worked" record of four million hours.

According to the BUAER Safety Engineer, the previous unofficial record was established by NAS PENSACOLA, Fla., with 3,556,313 total man-hours safely worked.

The safety record at Cherry Point was attributed to well established programs which made all workers conscious of the great importance of practicing safety all day every day.

SPANISH HELICOPTER PILOTS AND MECHANICS ARE TRAINED AT FIELD NEAR PARIS

A GERMAN HE.111 MANUFACTURED IN SPAIN

HISPANO AVIATION DESIGNED AND BUILT THIS JET TRAINER

PRIMARY FIGHTER IN SPANISH AIR FORCE IS THE U. S. F-86

SPANISH AIR FORCE TODAY

PRIOR TO the Spanish Civil War, the Spanish Navy had a Naval Aeronautical Corps which operated some 100 seaplanes and land-based aircraft. This force, supported by three major seaplane bases along with smaller facilities, was scattered throughout the perimeter of the Iberian Peninsula.

The Naval Air Arm was disestablished after the Civil War and approximately 50% of the corps' officers and all of the NCO's transferred to the Spanish Air Force (SAF). Very few Spanish naval officers who were former members of the Air Arm are still in the Navy. The few that remained in the Navy are senior officers and appear to have disassociated themselves from any interest in aviation.

Today the Spanish Navy, with the exception of a small helicopter force, has no naval air arm. By law the SAF is charged with the responsibility of supporting Naval tasks. The SAF, an autonomous service since 1939, is primarily an air defense force.

The SAF is in training status and is slowly developing into a jet fighter force with equipment provided by the U. S. It seeks primarily to develop modern jet capabilities with emphasis on air defense.

With the advent of naval modernization under U. S. aid and the possibility of a realistic naval defensive capability, the Spanish Navy has become interested in reestablishing an air arm. Some progress in this field has materialized to the point that a small helicopter force based at Rota is now under the control of the Navy.

Although Spain is not a member of NATO, she is a vital adjunct of NATO through her agreements with the United States and Portugal. Spain's chief value to NATO and Western defense strategy lies in her geographic location and the availability of her bases.

The SAF with respect to naval operations has the responsibility for supporting naval tasks and, of course, the normal responsibilities accruing to an air force are, in this case, primarily defensive.

It follows, therefore, that the SAF's primary mission is to defend Spain and Spanish territory against air attack. This also includes assisting the U. S. in defending U. S. bases located in Spain. To accomplish this, the SAF has approximately a thousand pilots and a like number of aircraft.

The Spanish aircraft industry has not kept step with the rapid advances of other nations in aircraft design and production. This has been largely because of its economic difficulties.

As a result, the SAF is forced to rely almost entirely on outside sources for most of its aircraft, equipment, and supplies.

At the present time, Spain has no maritime type aircraft. The SAF operates the following types of aircraft: F-86F jets, Me.109 piston aircraft, and He.111 light bombers. Reconnaissance types include: the He. 111, SA-16, H-19, He.114, and He. 70. Transport types include: the Ju. 52, He.111, and C-47.

In addition to these, there are jet trainers, piston trainers, and liaison types which could perform reconnaissance duties in conjunction with naval operations.

The SA-16 aircraft (U. S. Navy UF) are used for ASW/recco missions.

Spanish air facilities have been undergoing almost continuous expansion and improvement since 1945. Airfield development programs in Spain, including the U. S.-Spanish joint-use airfield construction program, have concentrated on building basic airfield items such as runways, taxiways, and parking areas. As a result of this concentration, there has been an increase in the number of Class 1 airfields in the system. Spain's air facilities and seaplane stations are quite adequate to support existing SAF units.

GRAPH AT COMNAVAIRLANT SHOWS MARKED DOWNWARD CURVE

TOP READINESS ALLOWS THIS S2F TO COME IN FOR THE KILL

MORE AIRCRAFT FOR LESS BUCKS

A WELL-KNOWN news commentator usually opens his broadcast by saying, "It's good news tonight!" And good news it is, concerning the Navy Aviation Supply System AOCP program. (AOCP means Aircraft Out of Commission for Parts.)

During the past nine weeks, many ships and stations supporting a complement of 10 or more aircraft have joined the Zero AOCP Club.

USS *Philippine Sea* has reported a perfect record nine times, USS *Leyte* seven times, NS ROOSEVELT ROADS five times, NAS OAKLAND, NORFOLK, LOS ALAMITOS four times each, USS *Valley Forge* and NAS ATLANTA three times, NSD ARGENTIA, NAS NIAGARA, USS *Bover*, USS *Lake Champlain*, USS *Tarawa*, USS *Randolph*, NAS BRUNSWICK, NS KWAJALEIN, and FASRon-201 once each.

By intensified anti-AOCP actions, ComNavAirPac and West Coast supply activities have increased their striking power by approximately one carrier air group—more than 60 million dollars worth of aircraft.

"This news is most encouraging," said RAdm. J. W. Crumpacker, commanding officer of the Aviation Supply Office in Philadelphia. "It indicates that our friends in the field are getting better supply support. The excellent cooperation and fine teamwork being exhibited by maintenance and supply personnel of the operating forces indicates that in the near future we will have even more activities reporting Zero AOCP's," the Admiral said.

Successful supply support means the inter-relationship of many hands both at ASO and in the field. This was stated by Capt. M. H. Tuttle, commanding officer of the *Philippine Sea:*

"With proper pre-deployment planning and conscientious adherence to good supply practices during deployment, an aircraft carrier in the Western Pacific can support its embarked squadrons, from a material standpoint, in an exemplary manner with limited support. This accomplishment is indicative of close cooperation between the supply and maintenance personnel afloat, but is even more indicative of a responsive aviation supply system."

A study was made by ASO in the period January 1957 to June 1958 to learn the specific causes for AOCP's on the following types of aircraft: A3D, A4D, F4D, F8U, FJ-4, F3H, F9F, WV, P2V, HR2S, HSS and R7V. Of the reasons which were included, these percentages were determined:

Material failure to meet planned operational requirements, 19%; assigned replacement factor insufficient in practice, 5%; generation of RB (a supply department code meaning material requiring repair) through overhaul to RFI (ready for issue after overhaul) not fast enough, 13%.

Delay in procurement caused by faulty provisioning, documentation, etc., 7%; delay in procurement because of funding difficulties, 11%; improper operations and maintenance techniques, 7%; improperly reported as AOCP, 8%; incorrect or untimely field supply procedures, 8%.

Slow inventory reporting under CSSR (consolidated stock status report), 9%; mass of emergency actions delaying routine preventive actions, 5%; contractor delinquency in production and overhaul contracts, 4%; Tight-fisted source coding to "save" money, 4%.

Not all aircraft suffer from each of the foregoing AOCP causes. Future AOCP's will not maintain the foregoing proportions, according to ASO, because of changing conditions.

From October 1956 through April 1957, ASO monitored the most severe AOCP's to learn causes. Data was revealed to enable more effective AOCP prevention. Preventive techniques now in practice include:

Determining items incorporated in new weapon systems more promptly; establishing check-off lists and checkpoints for supply action; placing emphasis on weapon-wise master planning to relate supply actions to operational checkpoints; emphazing accurate and timely planning data receipt from CNO, BUAER and the Fleet; improved liaison with key industrial and Navy personnel outside of ASO; emphasis on alleviating AOCP's via improved reporting, analysis and more rapid ASO handling of emergency requests; buying initial support from prime contractor; and acceptance by ASO management of ideas from lower echelons.

CVG-17 SHOWS TOP READINESS

GROUP, SQUADRON LEADERS AT NAS JAX

AS A REALISTIC check on Carrier Air Group 17's readiness to go aboard ship on a moment's notice, the string was pulled on "Operation Bingo."

At 0800, and without advance notice, VF-173 and VA-176 at NAS JACKSONVILLE and VF-13 and VA-36 at NAS CECIL FIELD were ordered to send all planes to NAS MAYPORT as soon as possible. In theory, Mayport was considered a carrier at sea.

The landing mirror was rigged and each pilot was required to execute an LSO-monitored mirror approach before being considered "on board."

VF-173, commanded by Cdr. A. C. Waldman, was the first unit to be represented on board. That squadron's pilots diverted from a flight already airborne on another mission when the orders were received. The first pilot, Lt. Walker Lambert, called in at 0808 and hit the deck at 0824.

In the next step, 10 *Furies* from VF-173 and several *Cougars* from VA-36 and VF-13 landed at Cecil Field.

A flight of eight *Skyraiders* from Cdr. D. Stanley's VA-176 arrived at 0925 and by 1030, 44 aircraft had completed the mission successfully.

The exercise ended at noon with 47 of 56 birds "in the coop." As the exercise closed, VF-173 was reported trying to locate a barge to transport the squadron's last two *Furies*, these machines being incapable of flight because of pulled engines.

A further exercise, "Red Lollipop," pitted the offensive strength of the two CVG-17 attack squadrons against the defensive strength of the two fighter outfits.

The attack squadrons, flying routes out to sea and returning to drop bombs at Pinecastle Impact Area, were intercepted visually by fighters stationed just east of the Florida coastline.

The fact that no outfit knew the exact date or time for commencing the operation until late the night before the full-scale launch pointed up the squadron's readiness.

CVG-17 is led by Cdr. Jerry Miller.

School has an Anniversary

Seven Classes Take Blimp Course

The Fleet Airship Maintenance Training School at NAS LAKEHURST has completed its first year of operation. Seven classes of Navy and Civilian personnel assigned to fleet squadrons, development units, training groups and the O&R Department in Lakehurst have completed courses to date.

Specific courses in maintenance procedures for the ZPG-2, -2W and ZS2G-1 systems are divided into three phases at the school. The engineering course involves the training of aviation machinist mates in power plants, propellers, fuel systems, ballast systems, transmission system, ignition system and heaters.

The airframes course is for the aviation metalsmiths and covers airship fabrics, rigging, tensioning, structural components, hydraulics, winches, constant speed drives, controls, and water ballast systems.

In the electricial course, aviation electricians are trained to operate and maintain the complicated AC and DC electrical systems of the Navy airships.

LTJG. DAN CHANDLER, *left, congratulates Ltjg. George Boaz who made 13,000th landing on USS Shangri La in WestPac. Ltjg. Chandler scored carrier's 14,000th landing. Both pilots are members of VA-113. They fly Skyhawks.*

DEL ROSARIO CHECKS WHITES FOR MED TOUR

He's Still Sold after 35

Memphis Chief is off to 6th Fleet

"Today's Navy is better than it ever was," says 35-year veteran Francisco Del Rosario, SDC. To prove his point, the chief turns a deaf ear to any suggestion regarding retirement, even though he lacks only five years of having twice enough service to take up chicken farming.

Del Rosario was interviewed at NAS MEMPHIS as he made transfer plans for a tour of duty with the Sixth Fleet. "The Navy was a case of love at first sight with me," he says. When he first saw a Navy ship sail into view in Cavite Harbor he was convinced that the sea was for him.

He had to wait until 1923 when he was old enough to join.

Progressing from pantryman (monthly pay $20) to multi-hash-mark chief, Del Rosario has made his fair share of acquaintances. He can rattle off the names of present and retired admirals with whom he has shipped as rapidly as a signalman can sing out a flag hoist.

"Navy chow has always been a bit 'beanish' in nature," he says, "and we have about the same food now that we had in '23. But it's still the best."

Red Rippers' New Record

All Pilots Are Essex Centurions

It's not unusual for one pilot to log 100 landings on a single aircraft carrier, but when Lt. Charles Z. (Bobo) Webb of VF-11 landed his F2H-4 *Banshee* aboard the USS *Essex*, it was not only his 100th arrested landing, but it meant 16 *Red Rippers* had attained the magic number.

The entire squadron had become *Essex* "Centurions." This is unusual.

A3D CREWS TAKE JET COURSE

GRADUATES DISPLAY TAILHOOK AS SYMBOL OF INTENTION TO GO ABOARD SHIP SOON

THE FIRST CLASS of A3D qualified crews has completed the Heavy Attack Squadron Three jet syllabus. The presentation of graduation certificates and squadron patches to each crew member was made by Capt. James D. Ramage, Commander Heavy Attack Wing ONE. Of the six qualifying crews, three are slated to report to VAH 7, two to VAH 11, and one will remain in VAH 3. HATWing One is the first command to complete the new training doctrine that all naval air squadrons in the Atlantic Fleet have adopted.

According to the present concept, prospective A3D flight crews, upon completing a basic phase in the elements of all weather bombing, enter into an advanced phase in operational jet bombers. The crews are integrated and trained as a unit, the plane commander, bombardier navigator, and third crewman reporting to their parent squadron as a combat team.

In addition to a thorough and intensive special weapons course, the training crews receive 90 flight hours in the A3D. The first four flights are pre-solo fams. Thereafter, the syllabus is designed to established proficiency in instruments, navigation, bombing and mining.

Special weapons missions are flown, practice bombs are dropped and various flight profiles are learned. The plane commander completes his training with eight FCLP periods. Upon reporting to their assigned squadrons, the flight crews are prepared to qualify aboard ship without further training.

It would be difficult to estimate in dollars and cents the defense savings to be realized by the training squadron concept. However, the centralizing and standardizing of the training of all weather attack crews is certainly efficient. Formerly A3D crew training was accomplished on an individual squadron basis and as a consequence, there was necessarily a certain sacrifice in squadron readiness. Now, however, the deploying squadrons, being free of this commitment, can concentrate on smoothing out the rough edges and exploiting fully the potentials of the crew and the aircraft.

As a result, deploying carriers will receive aboard a very proficient A3D combat crew, capable of delivering a wide range of weapons, conventional or nuclear, under adverse weather conditions, day or night, from a mobile platform at sea.

The graduation class was comprised of six crews: VAH-3—Cdr. S. N. Baney (Executive Officer of VAH-3), Ltjg. R. M. Johnson, G. A. Limbert, AD2; VAH-7—LCdr. F. J. Jablonski, Ltjg. K. R. Escudier, G. Johnson, ATN3; Lt. R. A. Mergl, Ens. G. R. Griffin, R. W. Jones, AT3; Lt. F. H. Blizard, J. T. O'Donnell, AD1, R. E. Kiser, AO1; VAH-11—Lt. H. E. Graham, K. M. Towrney, AE1, S. R. Craw, ADJ3; LCdr. N. A. Carlson, Ens. L. J. Britton, T. L. Farmer, ATN3.

• Ens. W. T. Orgeron of VS-23, flying an S2F *Tracker*, made the 69,000th fixed-wing aircraft landing aboard USS *Princeton* (CVS-37) since her commissioning back in 1945.

Marines to Get AF Base

MCAAS Yuma to Open January 1

Vincent Air Force Base in Yuma, Arizona, will be transferred to the Navy and redesigned as a Marine Corps Auxiliary Air Station January 1. It is intended to replace MCAAS MOJAVE, California, which is scheduled to be inactivated January 1 and disestablished by June 30, 1959.

MCAAS YUMA will serve as a tactical training base for squadrons of the Third Marine Aircraft Wing, including those stationed at El Toro.

Marines will begin arriving in Yuma this month to prepare the station for commissioning the first of the year.

'Tube Thumper' Designed

20,000 Tubes are Checked Yearly

Two major troubles encountered with radio tubes in aircraft and missiles—noise and short circuits—are detected by a new electronic-mechanical device developed by Chance Vought Aircraft.

Called an "electron tube thumper," the automatic device is used to test up to 20,000 tubes a year. It replaces the formerly laborious and only roughly accurate method of tapping the tube with a small hand mallet and checking the results with a meter and earphones.

The new tester, developed by J. H. Reagan, actually reduces the rejection rate on most types of tubes by eliminating human judgment factors, according to a Chance Vought statement. At the same time, it assures that all types accepted are within specifications.

A tube is plugged into the tester, and the operator pushes buttons on a console to connect the particular type of tube into a test circuit. Specifications for noise are set on the dials and another button is pressed. The socket supporting the tube then is automatically tapped by a hammer with a force equal to 10 G's. The blow is of such short duration that no damage is done to the tube but any loose parts will vibrate.

The signal caused by the vibration is amplified, integrated and differentiated by standard computer type circuits and compared with the preset limit values. If it exceeds them, a red light glows and the tube is rejected by the "electron tube thumper."

Army to Get 35 Mohawks

Turboprop Procurement Approved

Procurement of 35 new type turboprop aircraft specially designed to meet Army requirements has been authorized.

Nine prototype models of the new aircraft, known as *Mohawks*, are being built by Grumman Aircraft Engineering Corporation, Bethpage, L. I., New York, under a $22,200,000 contract. These models are scheduled for extensive test and evaluation by BuAer which is administering the *Mohawk* program for the Army.

The *Mohawk*, with an empty weight of 7700 pounds, will be one of the largest fixed-wing airplanes to enter Army service and the first to utilize turboprop power. Designed to operate from small unimproved fields, the two-place observation aircraft is expected to have a maximum level flight speed in excess of 200 knots, a stall speed of 55 knots, and to have relatively the same short takeoff and landing capabilities as the Army's present light, single-engine airplanes.

Engine power for the *Mohawk* will be supplied by two Lycoming turboprop engines mounted in nacelles above the wing. Each engine is fitted with a 10-foot diameter, three-bladed, full feathering, reversible pitch, Hamilton standard hydromatic propeller.

Evacuation Ramp Designed

Suitable for C-131A, R4D or R5D

A ramp suitable for stretchers, passengers and cargo loading has been designed and built for the Aeromedical Evacuation Service by the Operations Department at MCAF New River. It has been used successfully with C-131A, R4D and R5D aircraft.

PATIENT ENTERS C-131A PLANE VIA RAMP

The ramp is 27 feet long with a walkway width of three feet. Height of the handrail is three feet. Full up, the ramp is 10 feet high and full down it is three feet high. Its weight (less aerostand) is 900 pounds.

Except for the aerostand and $40 worth of assorted material, all components of the ramp were procured from scrap and salvage yards. Materials used in constructing the ramp included an aerostand, 1- and 2-inch seamless tubing, ¾-inch plywood, and ribbed rubber matting for the walkway.

The only modification to the aerostand was the addition of two brackets to attach the incline ramp. This addition does not limit the use of the aerostand in any way. Two small full-castering wheels were attached to the lower end of the ramp for ease of handling when the aerostand is in the down position.

Organizations desiring further facts concerning the ramp have been invited to direct requests to the Commanding Officer, Marine Corps Air Facility, New River, Jacksonville, N. C.

WV's Named 'Warning Star'

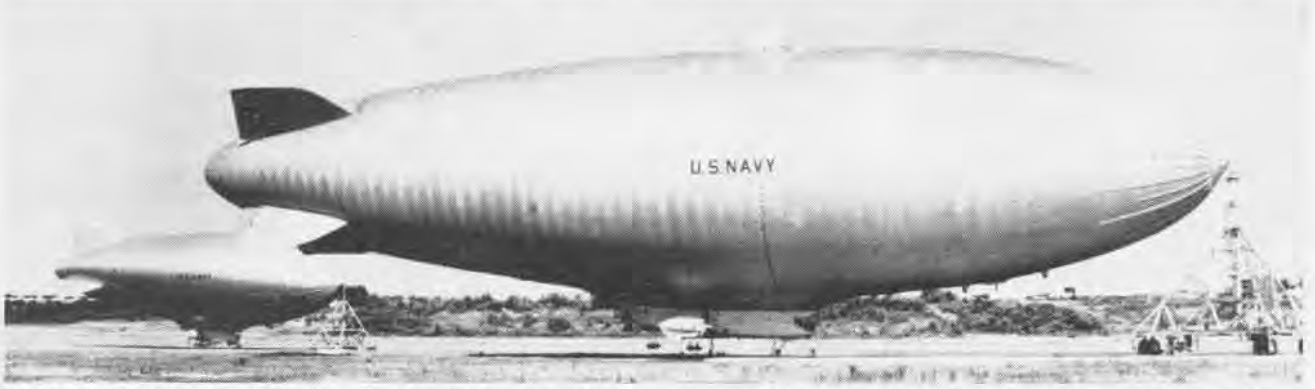
Christening Ceremonies are Held

Navy and Air Force officials have paid special tribute to the radar sentinel planes patrolling North America's vast seaward defense perimeter by officially naming all Lockheed WV-2 and RC-121 aircraft "Warning Star."

Water was flown from Rugby, North Dakota, the geographical center of the American continent, to Argentia, Newfoundland, where "Miss Atlantic Barrier," Clara Villiard, the wife of an air controlman who flies the barrier, christened the first plane.

Simultaneously, North American Air Defense Force officials in Colorado Springs reported round-the-world christening ceremonies at the four major AEW bases of the two services; Argentia, Barber's Point, McClellan AFB, and Otis AFB.

Speaking from his headquarters at Colorado Springs, Air Marshal C. Roy Slemon, deputy commander-in-chief of the North American Air Defense Command, said: "Great credit is due the crews of the *Warning Stars* who, day after day and through some of the world's worst weather, fly these ocean patrols—unglamorous in nature, but vital to the continent's security."



WORLD'S LARGEST *non-rigid airship, the United States Navy's new ZPG-3W, built by the Goodyear Corporation, is readied for its maiden flight at Akron, Ohio. The prototype of a new class, it was designed expressly for airborne early warning duties far at sea. Concealed within the envelope or "bag" is the largest revolving radar antenna ever carried by any type aircraft. The ZPG-3W is reported to have a capacity of approximately 1½ million cubic feet and is powered by two Wright R-1820-88 engines. In the background is a ZS2G-1 airship with an inflation capacity of 650,000 cubic feet. A 21-man crew will make up the normal complement of the new airship.*

LETTERS

SIRS:

Just to keep the record straight, I would like to make a correction concerning the identity of the team shown on the inside front cover of the August issue of *Naval Aviation News*.

The upper picture was made in Pensacola in 1931 of the "Three T'gallants'ls." The pilots, reading from top down, were Ltjg. J. G. Crommelin, Jr. (RAdm. Ret.), Ltjg. R. K. Gaines (Capt. Ret.), and myself. Lieutenant Frank Akers (RAdm. USN) also flew with this unit. We pretty well covered the southeast section of the United States attending all field opening ceremonies, Navy Day exhibitions, etc.

I believe that the bottom picture is correctly labelled.

WILLIAM V. DAVIS, JR.
VICE ADM. U. S. NAVY

† We only had identification on the lower picture, but included the other because it was appropriate and we liked it. Our thanks to Admiral Davis for pinning it down. Below is a picture of the three pilots taken in 1931 at Pensacola. Adm. Davis says plane was an F6C4 Curtiss Hawk with Wright radial engine.

DAVIS, CROMMELIN AND GAINES IN 1931

SIRS:

I would like to supplement the picture and write-up concerning Air Group Nine appearing on the inside back cover of your June 1958 issue, with an insignia of VA-95.

Attack Squadron Ninety-Five, under the command of Cdr. Martin J. Stark, USN, was a vital part of Carrier Air Group Nine aboard the USS *Ticonderoga* (CVA-14) during its recent deployment to West Pac. Although considered too slow for general association and flying about with the jets of its brother squadrons; the "Sky Knights"

of VA-95, with their AD-7's (Super Spads), carried the load for Air Group Nine on its recent cruise.

Detachments "Mike" of VA(AW)-35 and VAW-11, also flying configurations of the mighty AD, did their fair share, too.

F. F. BRADY, JR., CDR.
Former XO, VA-95

‡ Space again—lack of. Please accept a joint doffing of garrison/bucket hats to all.

SIRS:

Your article, *Foreign Object Damage*, p. 35, in the July issue was read with keen interest. Since the establishment of FOD prevention programs by the major commands, there has been a significant decline in engine removals due to FOD. However, it appears that more than 600 Navy jet engines will still be removed in calendar year 1958 because of FOD.

Overhauling these engines will cost in excess of five million dollars.

During this period of ever-increasing maintenance work load, coupled with the present austerity program, reduction of FOD to gas turbine engines is an excellent way of improving fleet readiness.

The arrival of the vacuum sweepers are awaited with much anticipation and, when put into use, they will further alleviate the problem of premature engine removals due to FOD. However, far too many FOD reports reveal the cause of failure to be hand tools and/or pilots' flight gear going through the engine.

It is significant to note that engine rejection caused by foreign object damage is as high on aircraft carriers, and in some cases higher, than on Naval Air Stations.

V. C. SLEDGE, ADC
FAU, ComNavAirLant

CONTENTS

Use of funds for printing this publication has been approved by the Director of the Bureau of the Budget, 22 April 1958.

● COVER

PHOT. K. G. Riley took this outstanding shot of the F8U Crusader on the catapult of the USS Hancock, CVA-19. It is a credit to his craftsmanship that this is Riley's third cover shot for Naval Aviation News within one year.

● SUBSCRIPTIONS

Naval Aviation News is now available on subscription for a $2.50 check or money order ($.75 additional for foreign mailing) made payable to Superintendent of Documents, Government Printing Office, Washington 25, D. C. Single copies are 25 cents each.

● THE STAFF

Cdr. E. G. Colgan
Head, Aviation Periodicals Office

Cdr. George F. Rodgers
Editor

Izetta Winter Robb
Managing Editor

Lt. Barbara Sullivan
Joseph E. Oglesby, JOC
Associate Editors

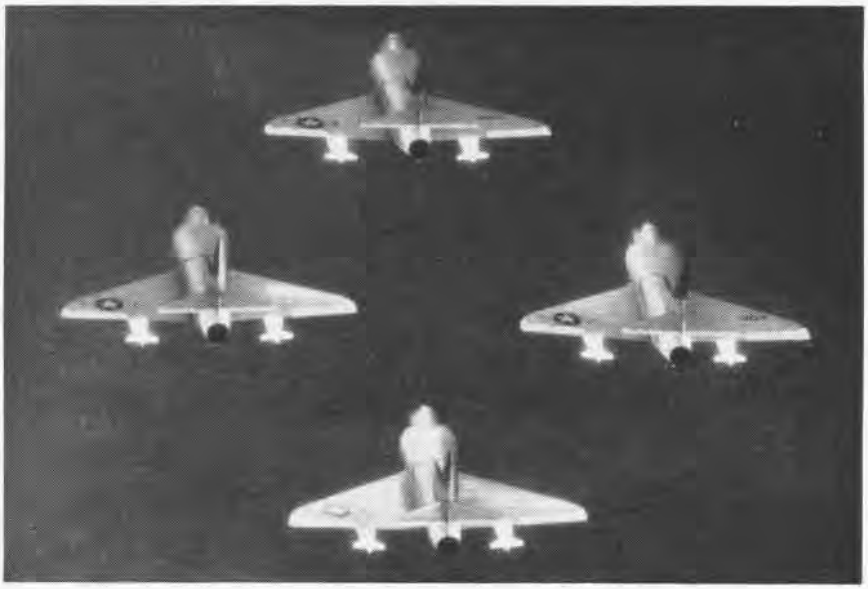
E. L. Barker
Cdr. Oliver Ortman
Contributing Editors

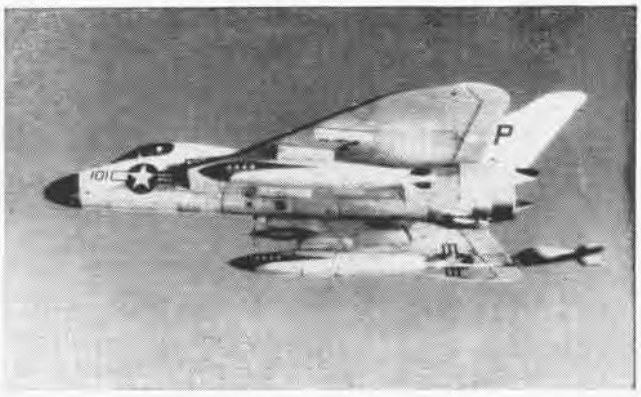
Nancy Mills
Editorial Assistant

James M. Springer
Art Director

NAVAL AVIATION NEWS

Published monthly by Chief of Naval Operations and Bureau of Aeronautics to disseminate safety, training, maintenance, and technical data. Address communications to Naval Aviation News, Op-05A5, Navy Department, Washington 25, D. C. Office located in room 5E629 Pentagon; Telephone extensions 73685 and 73515.





SQUADRON INSIGNIA

Although diverse in mission and separated by a continent, NAS Miramar-based Attack Squadron 113 and Fighter Squadron 101 at Key West, Florida, have much in common. Armed and trained, the VA-113 Stingers and VF-101 Grim Reapers figuratively fly together ready to inflict their particular brands on all who challenge the nation's security. A4D Skyhawks are flanked by F4D Skyrays, showing the Dart one-way tow-reel (left) and Delmar air-to-air weapons target (right).