

NAVAL AVIATION

NEWS

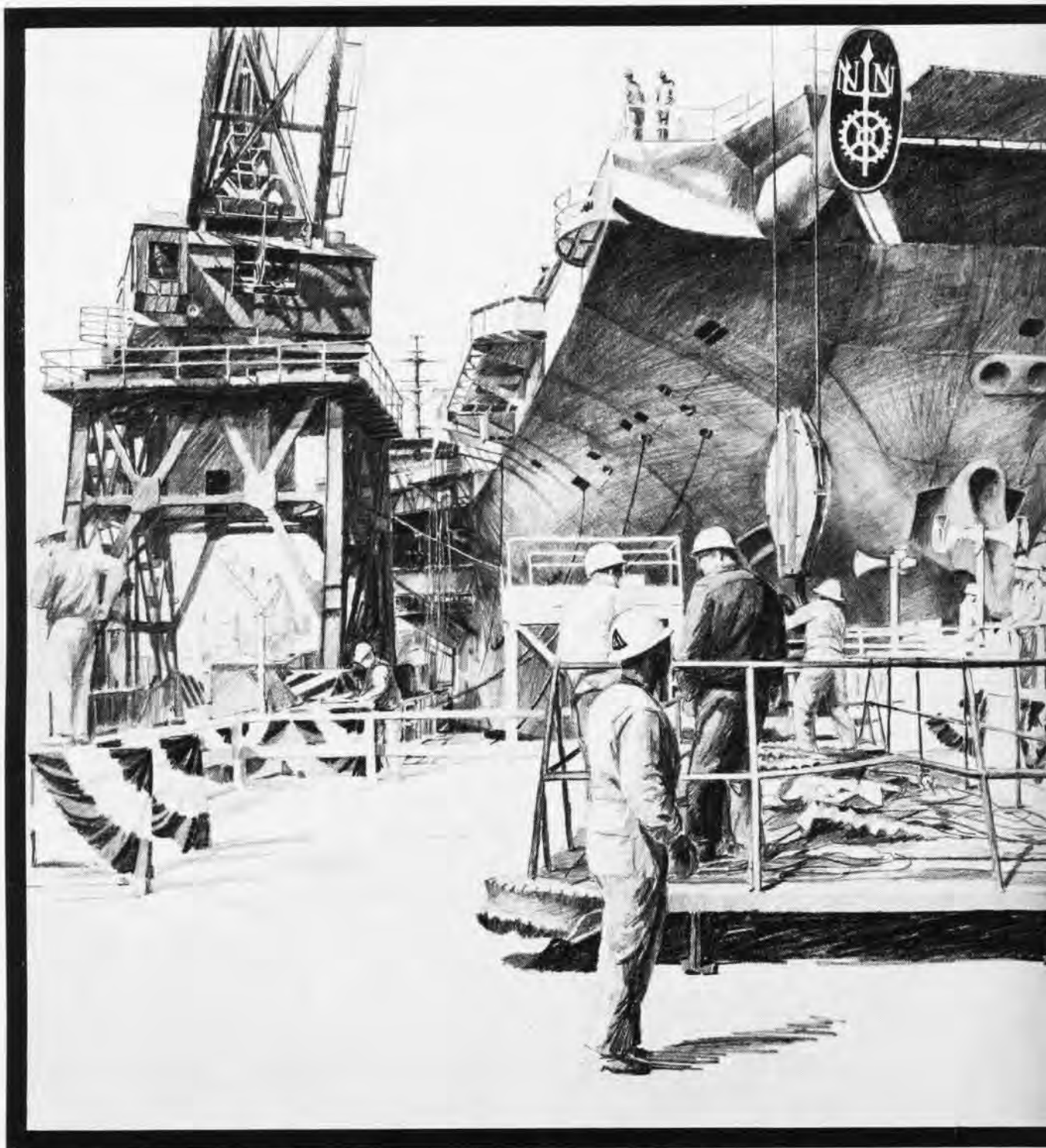


49th Year of Publication

MAY 1968

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ANOTHER STEP FORWARD

'The USS John F. Kennedy will allow the Navy to utilize its advanced aircraft to maximum advantage in carrying out responsibilities in support of the nation's foreign policy.'

—VAdm. Charles T. Booth II, Commander Naval Air Force, Atlantic

NAVAL AVIATION NEWS

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Deputy Chief of Naval Operations (Air)

Rear Admiral David C. Richardson
Assistant Deputy Chief of Naval Operations (Air)

Captain Paul Jayson
Head, Aviation Periodicals and History Office

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In the annals of U.S. Naval Aviation, the name Corsair is a distinguished one. A nostalgic look at aircraft bearing that name in the 1920's and '30's is combined with an account of the Corsair II in action today.

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Naval Aviation News presents portraits of a carrier being built. Seaman John Charles Roach made the drawings while CVA-67 was being built at Newport News, Virginia.

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Lee Pearson, historian for the Naval Air Systems Command, recounts the attempts in WW I to build a "flying bomb" for the Navy. While the effort of Sperry, Norden and others did not succeed in 1917-18, it laid the groundwork for research in the 1930's which led to the development of the guided missile.

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COVERS

On the front cover, a Ling-Temco-Vought A-7 Corsair II is shown leaving the deck of attack carrier USS Ranger (CVA-61). Above is one of the drawings of USS Kennedy being built.

MAY 1968

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NAVAL AVIATION NEWS

Marine Squadron is Cited NUC is Presented to VMFA-531

Marine Fighter Attack Squadron 531 (VMFA-531), the first Marine fighter attack squadron to participate in combat operations in Vietnam, was presented the Navy Unit Commendation recently by Major General Hugh M. Elwood, C.G. of the 2nd MAW, in ceremonies at MCAS CHERRY POINT, N. C.

The F-4B Phantom squadron was honored for its meritorious service in Vietnam from April 10 to June 15, 1965.

The citation noted VMFA-531's performance from May 31 to June 15, 1965, when it was instrumental in stopping a major Viet Cong offensive in the Quang Ngai province. It further noted that the squadron was the

first fixed-wing unit in aviation history to provide fully integrated en route escort and landing zone support for rotary wing aircraft in tactical combat operations.

New Facility at Puerto Rico Support for Atlantic Fleet Range

On July 1, a new command will be formally established at NS ROOSEVELT ROADS, P.R. An outgrowth of a recent reorganization, it will be called the Atlantic Fleet Range Support Facility and will report to Captain W. D. Dietz, Commander, Atlantic Fleet Weapons Range/Commander Fleet Air, Caribbean.

Comprising 186,000 square miles of sea and airspace located east of the island of Puerto Rico, the range includes land sites on the islands of

Vieques, Culebrita, St. Thomas and St. Croix as well as on numerous smaller islands of the Caribbean (NA-News, April 1967, p. 24).

The Atlantic Fleet Weapons Range/Fleet Air, Caribbean command sphere of influence now extends from Guantanamo Bay, Cuba, eastward 560 nautical miles to the U.S. Virgin Islands and to the seas beyond.

Cubi Runway Lengthened Simulated Carrier Deck is Added

Some 200 Filipino construction workers have worked around the clock with U.S. engineers at NAS CUBI POINT, R. P., to repair the 8,000-foot runway and extend it by a thousand feet. They also widened the mid-field turnoff to allow for a reduced interval between landing planes.

It is estimated that 115,000 94-pound bags of special cement were used in the runway alone, with all concrete sections at least 12 inches thick (with steel reinforcing) to withstand the heavy pounding of jet aircraft. It was one of the station's largest projects since its commissioning in 1956.

Also installed was a 500-foot long concrete simulated aircraft carrier deck to provide carrier pilots with mirror carrier landing practice for day and night refresher training.

A-7E Corsairs are Ordered Initial Flight Set for November

The Navy has issued a follow-on contract to LTV Aerospace Corporation for production of the advanced A-7E Corsair II light attack aircraft. This is an advanced version of LTV's A-7A now serving in Vietnam for close support attack missions.

A key difference between the A and



EACH OF THESE four members of Marine Attack Squadron 311 is a veteran pilot and a winner of the Distinguished Flying Cross. When this picture was taken, all four had just returned from a combat mission and were awaiting the refueling of their A-4E Skyhawks. The pilots (from left to right) are Maj. W. E. Loftus, Lieutenant Colonel R. B. Taber, Maj. John H. Buchanan and Maj. D. S. Shelor. They have logged 921 missions and 1,160 flight hours in Vietnam.

E versions is an integrated avionics package which allows greater flexibility and accuracy in the delivery of weapons, highly accurate navigation and a method of displaying information to the pilot while he carries out his troop support and attack role.

The same capability has been incorporated into the A-7D, ordered by the USAF. Both D and E versions are scheduled for service use in 1969.

The A-7E *Corsair II* is scheduled to make its initial flight late this fall.

Famed Phantom on Display In Washington for 'Rite of Spring'

A record-breaking Navy *Phantom* was flown from McDonnell Aircraft, St. Louis, to Washington, D. C., late in March. The F-4 was displayed on the Capital Mall for about ten days during the Smithsonian Institution's Rite of Spring celebration.

After the celebration is over, the *Phantom II* is to be transferred to the National Air and Space Museum of the Smithsonian Institution.

This *Phantom* set a three-kilometer, low-altitude world speed record of 902.769 mph on August 28, 1961. In a flight known by the code name of Project *Sageburner*, Lt. Hunt Hardisty, USN, flew the F-4 at a Mach 1.2 speed at a maximum height of 125 feet above the White Sands Missile Range in New Mexico. His RIO was Lt. Earl H. De Esch.

Weapons Deployment Over VA-15 Chalks up Six Bull's-eyes

During a recent CVW-17 weapons deployment to NAAS FALLON, Nev., Lt. Gene "Wimpy" Atkinson of VA-15 scored an amazing perfect score of six bull's-eyes while bombing (45-degree) one of Fallon's raked targets.

During the two-week deployment,



LT. ATKINSON RECEIVES THE 'BE BE' BOMB



VICE ADMIRAL Alexander S. Heyward, Jr., Chief of Naval Air Training (left), receives the Gray Eagle Trophy from previous Gray Eagle, Admiral Charles D. Griffin, USN (Ret.), in ceremonies held March 15 at NAS Pensacola. The award is presented to the pilot on active duty who has been designated a Naval Aviator for the longest time. The Eagle trophy is bestowed "in recognition of a clear eye, a steady hand and daring defiance of gravity and the law of averages."

Lt. Atkinson won the "bomb of excellence" on four separate days for being the sharpest bomber.

The *Valions* of VA-15 won the "Be Be" seven days out of nine.

In the photo, Captain Robert B. Baldwin, C.O. of USS *Forrestal*, presents the CVW-17 "Be Be" to Lt. Atkinson as Commanders Bob Ferguson, CAW-17 (right), and Jim Snyder, C.O. of VA-15, look on.

HS-5 Crew Wins 'Dipper' For Proficiency in ASW Operations

Crew One of HS-5 has won the Dipper Award at NAS QUONSET POINT for the period of July 1 to December 31, 1967.

Members of the winning crew are Commander Joseph G. Kamrad, pilot and commanding officer of HS-5; Lt. John F. Wrenn, copilot; AX1 Gary L. Hatfield, first aircrewman; and AFCM Jacob P. Propsner, second aircrewman.

Rear Admiral Forsyth Massey, COMFAIR Quonset, in making the presentation said, "As a member of this crew, you are commended for your contribution to this achievement which requires the utmost in leadership, superior technical skill and outstanding airmanship."

The Dipper Award is a sonar transducer shell mounted on a wooden base.

SecNav Award for VM CJ-1 Unit Commended Second Time

The Secretary of the Navy has awarded Marine Composite Reconnaissance Squadron One its second Unit Commendation for exceptional photographic and electronic reconnaissance operations in Vietnam for the period November 1, 1965 to September 20, 1966.

The unit was cited for producing "high quality aerial photography in ever-increasing volume . . . for all the III Marine Amphibious Force needs." At the same time, the squadron increased its output of film footage over 100 percent beyond that which was considered normal for such a unit.

The squadron was also cited for its electronic countermeasure capability which became "a key element in all of the most significant air strikes conducted by the Seventh Fleet in Vietnam and many of those conducted by the Seventh Air Force."

All personnel attached to and serving with the squadron during the reported period are authorized to wear the commendation ribbon.

The Marine squadron was awarded its first Navy Unit Commendation for heroism in the support of air strikes and reconnaissance over North Vietnam for the six-month period of action, April 17 to November 1, 1965.



GRAMPAW PETTIBONE

Verily

Upon arrival at his destination on the first leg of an extended cross-country flight, the pilot of the A-7 entered the break at 320 knots, 1,000 feet above the surface, and experienced a series of successive compressor stalls. Unable to effect a normal landing owing to insufficient power and reluctant to risk a flameout landing because of low airspeed and altitude, the pilot requested a vector toward an unpopulated area.

En route, the composed *Corsair* chauffeur meticulously followed the checkoff list for shutting down the engine and the subsequent airstart in manual fuel control. Unfortunately, the engine refused to develop sufficient power and again produced severe compressor stalls with maximum indication on the turbine inlet temperature gauge and an engine hot light illumination.

The pilot, quite correctly, elected to secure the engine and abandon the aircraft. Ejection occurred at 190 knots, 800 feet above the ground with a sink rate under 500 feet per minute.

The ejection sequence was normal and the pilot landed in a 30-foot tree, sustaining no more than minor injuries. The abandoned *Corsair*, plumb-



meting to the earth in an uninhabited area, was a total loss.



Grampaw Pettibone says:

If this mishap doesn't appear too colorful, old Gramps selected it for just that reason. This particular young man knew his limitations, the aircraft's limitations and handled the situation in an extremely professional manner. Now if he had tried to dazzle the troops with some fancy footwork—extendin' himself or pushin' the machine beyond its limits—I'm sure he could'a made things real excitin' around that particular airport.

It ain't nice to lose one of these birds, but it's a comfort to this old man to see a driver like this make the best of it and not compound the loss by actin' foolish.

Get-home-itis

An instructor and his student, returning from a cross-country flight, decided to RON at a midwest air station to have their compass repaired. They arose the next morning to find a drizzle and freezing temperatures had iced their TF-9J and spent the day trying to get the compass fixed and the *Cougar* de-iced.

While deciding how to get home, they met another transient instructor

who agreed to have the stranded two-some fly wing and make an IFR section GCA to their home field. The Samaritan would continue on to his base. Meanwhile the hot exhaust of the recently arrived F-9 de-iced the first *Cougar*. After this, they filed, became airborne (the compass still inoperative) at about 1800 in the dark, and eventually arrived at the fix.

After commencing the penetration, the instructor flying wing was hit by vertigo but made the penetration and broke out of the clouds at about 500 feet. The leader called, "The runway is straight ahead."

The wingman, looking out at the runway, thought he was in a 30° angle of bank. Starting to close the lead aircraft, he nosed over to avoid a collision. Shortly thereafter, he felt the impact of trees striking the aircraft. He applied power and climbed just enough to strike the top wire of the station's perimeter fence. The instructor, yelling "Eject!" ejected himself, and the student ejected microseconds later, both at about five feet above ground level.

The student came flying by just as the instructor's drogue chute blossomed. At this instant, the student's drogue gun fired and the drogue piston went through and tangled with the shroud lines of the instructor's drogue chute.

The instructor landed in the bottom of a ditch some 20 feet deep with only minor injury to his face. The student landed in the same ditch and suffered serious injuries.



Grampaw Pettibone says:

Oh, my achin' back! How hairy can it get! I just can't help thinkin' these fellas had a bad case of get-home-itis and they got just what they bargained for. Whenever you let your feelings override sound judgment and proven procedures, look out, 'cause trouble is right behind you. These lads didn't have time for the Alphonse-Gaston routine, but it sure helps if the rear seat man goes first.



Cross-Country Calamity

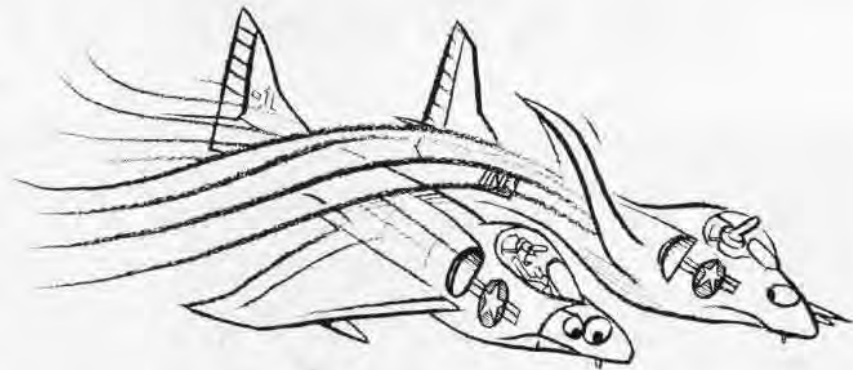
Two intrepid birdmen departed their East Coast air station in a pair of A-4B *Skyhawks* on an extended cross-country flight. The flight had been pre-briefed and included no-radio procedures. The fliers intended to make a GCA at each field with the wingman taking landing interval three to five miles out on final approach when he had the field in sight. The brief did not include night operation as no night flying was anticipated. The out-bound flight was without incident.

Concluding their RO2N, the two *Skyhawk* drivers took off on the first leg of the return trip at 1820 local time. They entered the clouds on climbout and were to fly solid instruments for one hour before they broke out into a clear, moonless night at their assigned flight level of 330.

At approximately 1950, the pair changed to Metro frequency and received their destination's weather (clear; visibility, seven miles; wind 090 at 15 K.). Upon returning to en route frequency, the flight leader, unable to contact his wingman, assumed he had a complete radio failure. He then signalled the wingman his difficulties by turning on the anti-collision light and passed the lead. (No attempt was made on the part of either pilot to establish radio contact on guard frequency.)

Upon assuming the lead, the new leader requested an en route descent and, after descending below FL 240, requested and received clearance for a precision approach to the home field. The student controller supervising the approach informed the leader that this would be to runway 14 with no-gyro turns. In turn, he also queried the leader on whether he would be making a full stop or a low approach for the wingman to get down. The leader replied, "That all depends on whether he [the wingman] takes interval or not. If he doesn't take interval, I'll go around and if he takes interval, we'll land on the first pass."

The flight leader performed his landing check list when instructed to do so and his wingman transitioned smoothly (in spite of the lack of signals). At approximately three-quarters of a mile from touchdown, the wingman started to drop back and the leader assumed he was taking interval as he had on the previous landings.



Who's in charge here!

The leader then turned on his taxi light (signifying clearance to land) but immediately secured it because of the glare. He looked for the meatball and datum lights but could not see them. When he checked to his right, he could not see his wingman; this reinforced his assumption that the wingman had taken interval. He made the decision to land and touched down on the left side about 1,000 feet down the runway.

Meanwhile, the wingman thought they were landing on runway 04, based on the wind information he received from Metro prior to his radio failure. He was also not aware they were making a GCA and thought the leader was bringing him in VFR. When he saw his leader flash the taxi light, he assumed it was his clearance to land and that the leader was waving off. He looked for the meatball and datum lights but did not see them (they were operational but not turned on) and, realizing his altimeter was not reliable at this time, concentrated entirely on the lighted runway, making no further attempt to keep his leader in sight.

During the final stages of the approach, while attempting to line up with the center line about 300 feet past the threshold, he encountered jet wash from the leader. The right wing dropped and he applied full left aileron and rudder, simultaneously adding full throttle. The corrective action failed to remedy the situation.

The *Skyhawk's* right main and nose gear collapsed on impact and it con-

tinued down the runway on the starboard drop tank, nose, and the intact left main gear. An arcing right turn developed and the aircraft started to burn as it passed through the 6,000-foot marker. The remnants came to rest 85 feet off the runway, about 2,000 feet from touchdown.

The *Skyhawk* driver opened the canopy, disconnected the Koch fittings, stood up and dove out the right side of the burning hulk. In his haste to get clear, the pilot forgot to disconnect his oxygen hose and was straightened out in mid-air before the fitting just above the mini-regulator parted. Sustaining no more than minor contusions after landing on his back, the pilot stood up and ran from the burning aircraft.

The crash crew arrived on the scene in one minute, but the A-4 *Skyhawk* was a strike.



Grampaw Pettibone says:

Great balls of fire! Anyone for NATOPS? Ole Gramps can't help but believe these two fellas were left off the distribution list for NATOPS or they are using 'em for doorstops. I ain't about to insult our readers' intelligence by listing the violations involved in this mishap but I will say that if this leader showed a little more concern for his wingman and stayed airborne until his buddy was on deck, the day would'a been saved in spite of them.

As so nicely stated in "The Hot Dope Sheet," 2nd Marine Aircraft Wing, "Ignorance is bliss, but bliss is not a NATOPS qualification."

A Proud Name and



A CREWMAN OF VA-147 (above) performs preventive maintenance checks on an A-7 Corsair II aboard attack carrier USS Ranger in the Tonkin Gulf. A helmeted Argonaut (top, right), Ltjg. William W. Witherspoon, Jr., sits in his cockpit awaiting his launch for a mission over North Vietnam. At right, the powerful, light attack aircraft, which was built by Ling-Temco-Vought, is poised on one of Ranger's catapults. Introduced operationally in the Fleet at the end of 1967, the large LTV aircraft is proving its worth. The A-7 now supplements the A-4 and will later replace it.

a Great Tradition

A QUARTER of a century ago, on February 13, 1943, the Vought F4U Corsair, named for the first Corsair, the O2U1, went into action in World War II when pilots of Marine Fighter Squadron 124 escorted PB4Y Liberators of VP-51 on a daylight attack against enemy shipping in the Bougainville area.

So successful was the new plane, the first U.S. fighter to fly more than 400 miles per hour with a full military payload, that it mounted an 11 to 1 kill ratio over enemy aircraft. The Japanese called her "Whistling Death" and the Americans referred to her as "The Bent Wing."

In 1955, after chalking up the longest service life of any American

By J0SN David W. Butler, USNR

fighter, the single-place, prop-driven F4U Corsair was finally phased out of the U.S. Navy. But as late as 1965, she flew with the Argentine Navy and the Honduras Air Force.

Today another Corsair flies from the USS *Ranger* to meet the continuing challenge of the Pacific. The new version, flown by the *Argonauts* of Attack Squadron 147, introduces the proud name and heritage to a new generation of Navy pilots.

Flying 200 knots faster than her predecessor, the 17,000-pound, jet-powered A-7 Corsair II is the first aircraft in 20 years designed specifically for the close support of ground troops.

The A-7 gives Navy carrier pilots a plane that can hug the ground, deliver twice the load of other light attack bombers and still have time to loiter over the target. The A-7 supplements the A-4 *Skyhawk* and will eventually replace it.

The F4U Corsair with its gull wings was one of the most easily recognized aircraft ever to fly. But the A-7, in the design of which were incorporated the lessons of operational experience, has neither variable sweep wings nor a dart-like appearance and is often confused with the F-8 *Crusader*, another Ling-Temco-Vought product.

Aboard USS *Ranger*, Commander James C. Hill, commanding officer of VA-147, the first squadron to have the Corsair, says, "This should be the best plane of the war. It has all the things we've wanted for 30 years."

These requirements make for complexity. LTV's technical representative aboard *Ranger*, Don H. Russell, points out, "Compared to its WW II counterpart, the A-7 is a highly sophisticated airplane."

Russell by reason of long experience is an authority. He worked with the original Corsair from 1942 to 1952 and with the F7U *Cutlass* and F-8 *Crusader* thereafter. Comparing the Corsair II with these earlier planes at the same stage, he says that the A-7 is three years ahead in maintainability and is quickly reaching her potential.

"Subsonic aviation has been around a long time and incorporates years of knowledge," he says. "This explains why the aircraft came from its first flight to combat use in only two years."

Speaking of one of the first operations in which Corsair II's participated, Cdr. Hill said, "We had a chance to see everything the enemy could throw at us today, MiG's, SAM's and AAA—the whole works. I got a real good shot at a flak site. I launched a missile at a SAM site shortly after we got in and both my wingman and the strike leader confirmed the shot as a direct hit."

In another action, A-7 Corsair and A-4 pilots dropped 500-pound bombs on 20 motorized barges. "All of the



bombs were directly on target," according to Lt. Russell C. Scholl of VA-147. "There was a big secondary explosion. Our bombs sank or heavily damaged ten of the craft."

The *Argonauts* also used 500-pound bombs to destroy a bridge in the Binh Lang highway complex and moderately damaged another bridge five miles east of Vinh. The A-7 pilots then struck a highway bridge and a storage area 16 miles south of Vinh.

Not long after the *Corsair II*'s went into action, Vice Admiral William F. Bringle, Commander of the Seventh Fleet, made a prediction: "The majority of the attack aircraft will be A-7's eventually. The A-7 will be the 'workhorse' as the A-4 is now. It can carry any of the weapons we have in the Navy today and deliver them in many combinations."

To help maintain the A-7 there is a five-man LTV team on board the *Ranger*. If there is a malfunction in the plane he is flying, the Navy pilot signals the fact and the USS *Ranger* at once gets ready to retrieve it.

CORSAIR II's built-in reliability and high degree of maintainability and its quick-turn-around time characteristics add to its effectiveness for it allows the attack plane to fly more sorties in a given time.

The original contract with LTV was unique in that it required the company to guarantee 11.5 maintenance man-hours per flight incurred during pre-acceptance demonstration, up to a limit of 17 hours. If the aircraft exceeded 17 hours maintenance cycle, the contractor would have to correct at his expense, which might include redesign.

Out of this stipulation, speed of maintenance was assured. The entire *Corsair II* engine can be removed in less time than it takes the average car owner to change his spark plugs.

Ground crews can remove a quickly detachable tail cone and one lower fuselage panel, disconnect the engine and roll it out, using a standard Navy dolly and a lightweight Ling-Temco-Vought-

designed engine removal adapter.

Traditionally, it has been necessary to remove a large aft section of the fuselage to take out an engine. Airplane system hydraulic lines and wiring have had to be disconnected and then checked out again when the engine was put back. In the A-7A, only lines going to the engine itself need to be disconnected. Aircraft control systems and other hydraulic or electrical linkages are not disturbed.

In addition, many aircraft must be placed on jacks to achieve the proper angle for engine removal and installation. In *Corsair II*'s, the engine is removed with the airplane resting on its landing gear. An engine can be removed in less than 30 minutes.

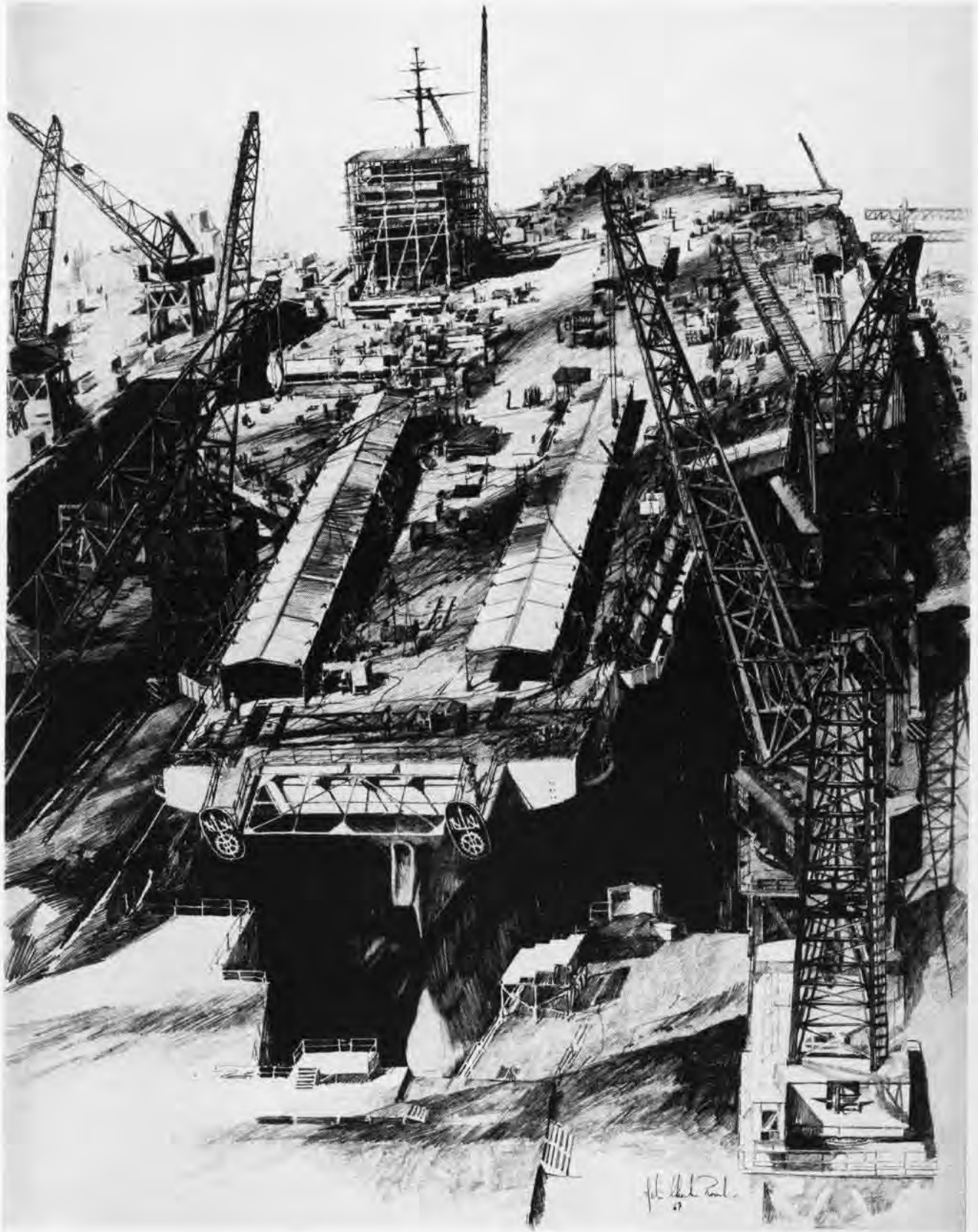
Today, the third *Corsair* plays her vital part. Her role with the United States Navy attack carrier force in the next decade will continue the tradition established a half century ago when the 0201 *Corsair* first flew, a tradition which was carried on by the second *Corsair*, the F4U, a valiant fighter in World War II.

Photos by PH1 D. F. Grantham





A PLANE CAPTAIN (opposite page) gives hand directions while turning up one of VA-147's Corsair II's aboard Seventh Fleet carrier USS Ranger. The Corsair II (top) displays its smooth, sturdy lines as it comes in for a landing. AO3 David B. Rumps (left, above) loads a bomb on a Corsair II and (just below) AT2 J. S. Kemplin works on a piece of A-7 equipment in the electronics repair shop. Above, an ordnanceman attaches a safety wire to a bomb on the wing. Navy's newest attack airplane is capable of carrying more than 200 different bombs and other ordnance.



An Artist's View of CVA-67

USS John F. Kennedy

Midway in the building of the Navy's new attack aircraft carrier, a Navy artist took on the task of portraying the ship soon to join the Fleet.

By Izzetta Winter Robb

WHAT DOES an artist see as he looks at the building of an aircraft carrier? Does he see something different from the marine architects who first visualized the ship of the line they were commissioned to design? Or something different from the men involved in its complex construction?

In these pages, *Naval Aviation News* gives you some idea of what a naval artist perceived as he made 28x22-inch drawings of the USS *John F. Kennedy* at a pier of the Newport News Shipbuilding and Dry Dock Company, Va. The artist saw not just a ship, but the pattern of steel beams and derricks, of men and machines, craftsmen and equipment, all part of a unified field of endeavor.

Interestingly enough, Newport News produced not only the carrier but the artist who made these drawings. In 1943, John Charles Roach was born in that port. Ships were his natural environment, for no sooner did he begin to walk than he played in his father's boatyard. But more than that, it shaped his future.

"My first art teacher was my father as he designed on his drawing board. I early became aware of the graceful flow in the lines of ships. I would sit upon the enormous drawing board in his office where he would lay out the fascinating curves of ships yet to be. I would watch silently as he drew. Sometimes in a brief moment of rest, he would turn his attention to me, pleasantly surprised to see his son trying to follow the same gentle sweep of a ship on some small scrap of paper

retrieved from the trash. With infinite patience, he would guide my hand out of the childlike scribbles into bold assertive lines of form.

"Later, my father's travels took me away from the boatyard but never could the boats be taken from me. Often when my teachers would have preferred that I apply my hand to the more practical subjects that all students must learn, I sat quietly at my desk drawing ships, ships with sails set, ships of steam, in storms, in calm."

After Roach graduated from high school, he went abroad. He spent one year studying art in Frankfurt under leading German artists and followed this up with two years at the Beaux Arts in Paris. So successfully did he

work that he became a foreign staff artist for the Frankfurter *Neue Presse* which continues to publish his work.

On returning to the United States, he determined to join the Navy and become a combat artist. While waiting for the assignment that would take him to Vietnam, he had the chance to portray the USS *John F. Kennedy*, a task he welcomed as a challenge. "The sheer size of this titan was an awesome sight. In some way I think I have captured her power and majesty."

CONSTRUCTION of the new carrier was authorized in the FY 1963 Shipbuilding and Conversion Program. As the ninth post-WW II attack carrier, she is the eighth Forrestal-class CVA.

On June 18, 1964, President Lyndon B. Johnson approved the naming of the carrier for the 35th President of the United States. She is the second aircraft carrier to bear the name of a U.S. President: the other was named for Franklin D. Roosevelt who loved the sea.

CVA-67 is the 20th attack carrier to be built by the Newport News Shipbuilding and Dry Dock Company, according to its president, Donald A. Holden. A firm that has been in the business of building ships for three generations has brought to its enormous task all the experience and skill required by engineers and craftsmen for such an enterprise.

In speaking of the *JFK* at its launching, President Holden said, "In general appearance, this vessel is similar



SEAMAN JOHN CHARLES ROACH

USS John F. Kennedy

to other carriers of the *Forrestal* class. However, when completed, she will be the most awesome and effective naval weapon on the seas.

"Her crew will number over 5,200 and they will handle and control the most modern aircraft and load them with the latest in armament. They will launch these aircraft from improved catapults and direct their aircraft strike force and the operations of their carrier task force through the latest in electronics and equipment."

As Roach took on the task of portraying the building of the latest, conventionally powered aircraft carrier, he saw it as power personified, its massive size fairly dwarfing the engineers and artisans who were working on the gigantic ship. To produce this behemoth, the artist learned, the company had had 6,000 drawings made and 2,400 miles of blueprints issued.

Statistics are interesting and the

builders of CVA-67 listed a great many: 200,000 horsepower, propellers weighing 69,400 pounds each, plane elevators, each about 4,000 square feet, but it's the great over-all figures that make comparison dramatic. "The flight deck . . . measures over 4½ acres, enough for 68 tennis courts or four football fields. The length of the flight deck—1,051½ feet—is equal to five city blocks. If the Empire State building could be laid alongside the ship, its Fifth Avenue entrance even with the stem, the giant propeller would brush the spire atop the building's tower."

Aboard the big carrier are installed 27,435 lighting fixtures, and the electronic equipment on the ship varies in weight from six ounces to more than 22,000 pounds. The total radiated power of the electronic systems is in excess of 4,000,000 watts, the equivalent of 100 powerful commercial radio

stations all operating at the same time.

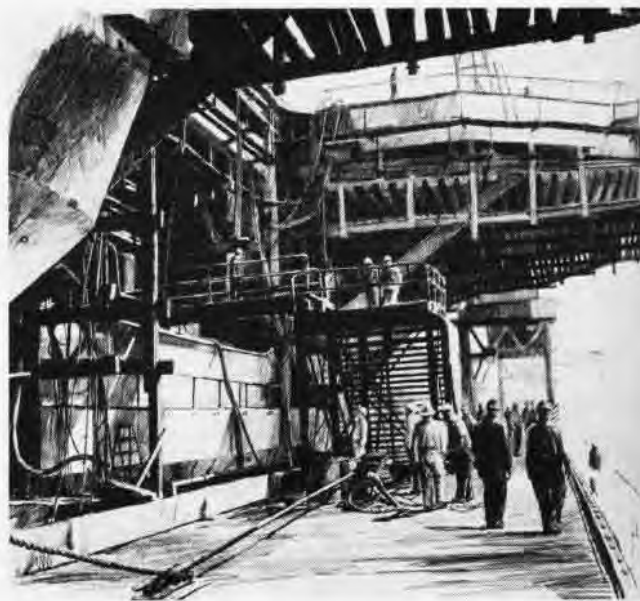
But statistics, while they tell much, do not depict the grandeur of the undertaking. Only an artist reacting to the dramatic effect of this new giant of the sea can make us feel the worth of such a ship. Day after day, and month after month, skilled engineering and equally skilled craftsmanship built up from the keel, laid October 22, 1964, the ship that in the next few months—tentatively, August 31—will be commissioned to the Fleet.

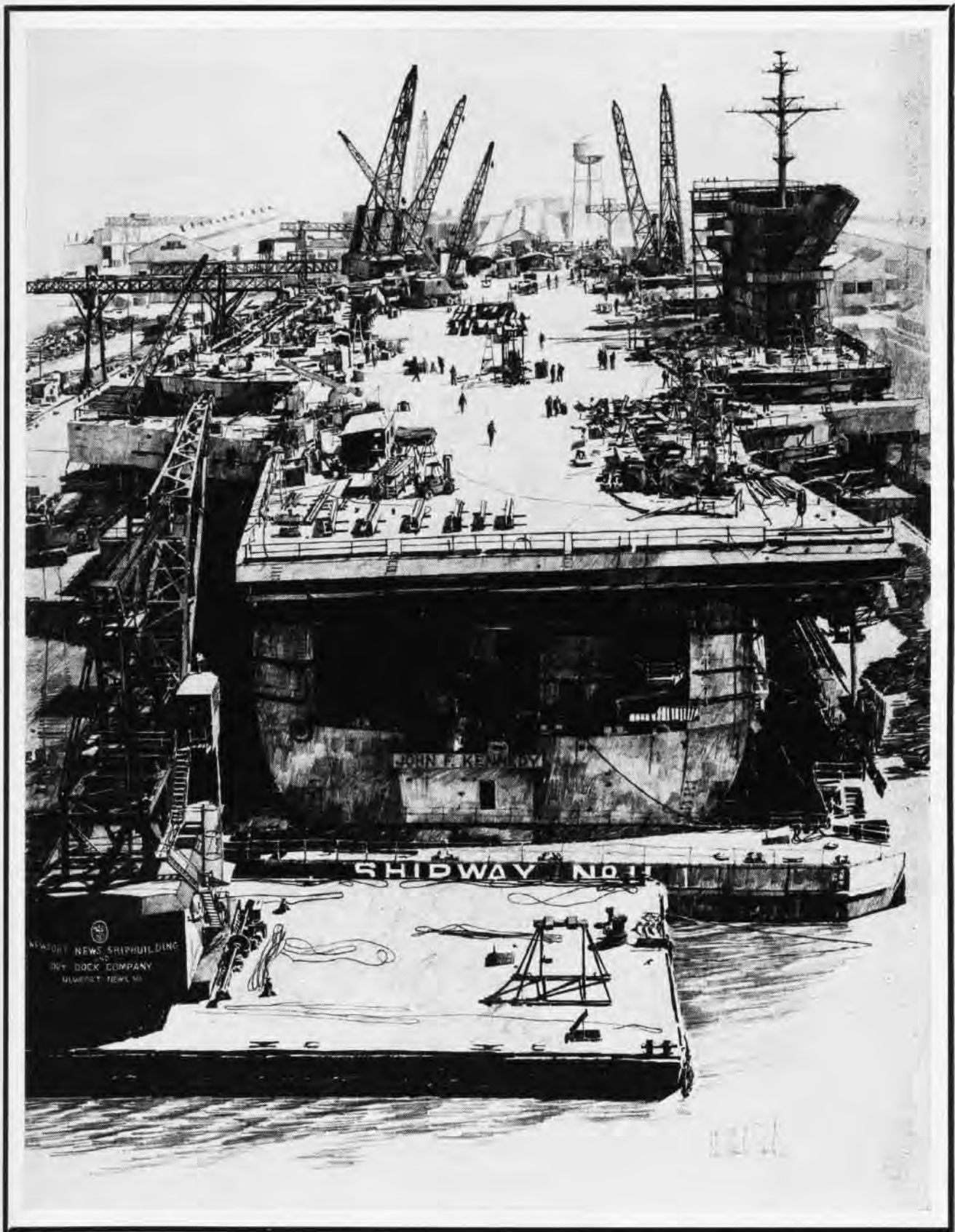
When that time comes, the carrier will be complete, her decks and elevators ready for aircraft, ready most of all for the officers and men who will inhabit this magnificently fortified city afloat.

Some of JFK's massive strength, the sinews of battle, wrought by architects, engineers, craftsmen and builders, was caught by the Navy artist who, returning to his home town, recorded her lines and mass, the men at work on the decks and gangways, and saw in her not only something of power, but something of grace.



How an artist catches lights and shadows formed by men, chutes, supports and equipment is demonstrated in these pictures by Seaman John Charles Roach. In the building of the eighth *Forrestal*-class aircraft carrier, thousands of engineers, technicians, craftsmen and artisans executed their professional skills. It has taken nearly four years, from the laying of the keel, to construct the USS John F. Kennedy (CVA-67), named in honor of the thirty-fifth President of the United States.







THIS lovable little waif was recently the Bulldogs' "Mascot for the Day."

BULLDOGS OF IWAKUNI

ACCORDING to Lieutenant Colonel Arthur W. Anthony, A.C.O. of VMA-223, "A Marine attack squadron exists for only one purpose—to destroy enemy surface targets."

And destroy them they do. Squadron pilots flying their A-4E Skyhawks have been known to drop over 25 tons of ordnance on enemy forces in one night.

Three-time winner of the Chief of Naval Operations Naval Aviation Safety Award—1965, 1966, 1967—

VMA-223 has amassed 24,535 accident-free hours. Most of the hours in 1967 were flown in combat.

And Bulldog pilots have earned their share of Distinguished Flying Crosses, Air Medals and other combat and performance awards while flying 14,000 combat sorties.

Maintenance personnel, ordnance crews, pilots and others who daily perform their tasks with skill and efficiency make VMA-223 a combat team that is hard to beat.

LEADER of the Bulldogs is Lieutenant Colonel Anthony (right). Below, a VMA-223 A-4 Skyhawk shimmers in the heat from a jet blast. At extreme right, a taxi director signals a squadron aircraft into position on the flight line. On the opposite page, a maintenance man performs one of the myriad duties that have contributed to the squadron's outstanding record of 24,535 flight hours without a single accident.





LAST OF THE BREED



ENSIGN PORTER receives his Navy wings. At left, Porter (C) and fellow student both receive special leadership instruction.



2ND LIEUTENANT Mullins (right) studies cutaway of J-48 jet engine. Above, the Navy's Wings of Gold are pinned on him.



TWO AVIATION CADETS, one a Navy man and the other a Marine, marked a milestone in Naval Aviation history March 22 when they received their Navy Wings of Gold at NAS CORPUS CHRISTI.

Ens. Gene L. Porter and 2nd Lt. Harry D. Mullins were the last pilot trainees to graduate from the Naval and Marine Aviation Cadet Program.

Rear Admiral Roy M. Isaman, a former NavCad who is now director of the Strike Warfare Division, CNO, pinned on Ens. Porter's wings at special ceremonies. Brigadier General William G. Johnson, USMC, Assistant Deputy Chief of Staff for Air, HQMC, also a former cadet, did the honors for Lieutenant Mullins.

The Naval Aviation Cadet, or NavCad, program was inaugurated in 1935 and halted in May 1966. In these programs, young men without a college degree could earn commissions as officers and become aviators in either the Navy or Marine Corps. Since the 1966 cut-off, only college graduates have been accepted.

Since 1935, the NavCad program has produced over 62,000 aviation cadets. In the late 1950's, a gradual decline in the Marine Corps output from the NavCad program prompted the Marines to initiate their own cadet program in 1959. Output of the MarCad program since that year has totaled 1,296 Marine Aviators.

With the increasing importance

placed on recruiting college graduates for the aviation programs, Navy and Marine authorities decided to terminate the aviation cadet programs. A young man who enters flight training for a service career without a college education is at a distinct disadvantage.

Vice Admiral A. S. Heyward, Jr., Chief of Naval Air Training, says, "No matter how expert and motivated as pilots these men from the NavCad program may have been, they still had to fight their way through many difficulties in qualifying for promotion as all-around naval officers. If all young officers start out on generally the same educational basis . . . the end result should be a relatively higher quality officer corps."

INTELLIGENCE FACILITY CITED FOR 7TH FLEET SUPPORT



OFFICERS and men at the Fleet Intelligence Center, Pacific Facility (FICPacFac), NAS CUBI POINT, R. P., have been awarded the Meritorious Unit Commendation ribbon for their service, described in the citation as "a major factor in the success of naval combat operations in Southeast Asia."

Rear Admiral Ralph W. Cousins, Commander of Task Force 77, representing Vice Admiral William F. Bringle, Seventh Fleet Commander, stressed the significance of the work done at the center. "Your work and ours go hand in glove. You are highly

By JO3 Kenneth B. Dalecki

trained specialists in a highly specialized field."

He pointed out that in three years the facility had grown from what he jokingly called "Fibber McGee's closet" to a sophisticated center for processing and interpreting aerial photographs of North Vietnam.

The commendation, covering the period from October 1, 1966, to October 1, 1967, cited the center for its outstanding intelligence and analytical support of U.S. naval forces.

Some 17 officers and 150 men work

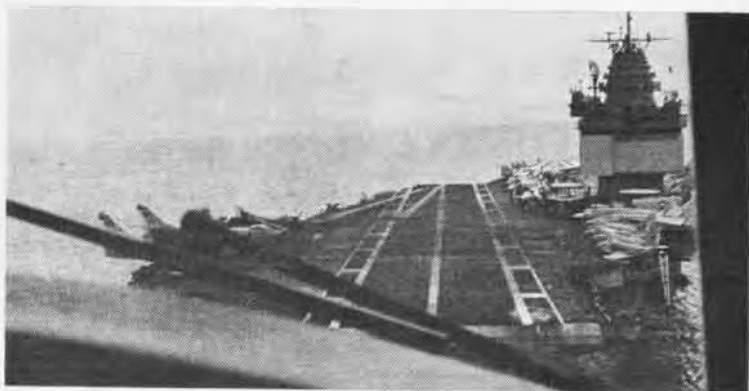
at FICPacFac. In the past year, they processed more than six million feet of aerial film, produced about half a million target graphics, identified several hundred enemy targets and interpreted more than 2.5 million individual frames of aerial photography in support of fleet, theater and national requirements.

FICPacFac officers are primarily air intelligence and photo interpretation specialists; enlisted men are photo interpreters and photographer's mates.

Commander C. Potter, officer in charge, received the Legion of Merit recently for his direction of the center.

RADM. COUSINS (above), C.O. of Task Force 77, presents the Meritorious Unit Commendation Medal to Fleet Intelligence Center personnel. At right, PHAN Gary H. MacDonald looks for defect in aerial film and PT1 A. L. Hill (far right) studies other North Vietnam films. PH1 R. L. Salyer (below) makes miniature transparencies in photo department.





Lt. Gilbert A. Baker (top) of VRC-50, a regular pilot of a C-2A Greyhound COD plane, heads for the USS Enterprise. An F-4 Phantom jet engine (center, left) is guided into a C-2A for CVAN-65. At right is a pilot's view of Enterprise as the COD plane approaches the nuclear-powered carrier in the Gulf of Tonkin. Lower right, a Grumman C-2A Greyhound is positioned on the catapult, ready for a return flight to Cubi Point, R.P. Near it is an Enterprise-based C-1A Trader, smaller predecessor of the Greyhound.



ALMOST EVERY DAY a fleet of pot-bellied, turbo-prop cargo carriers lift off into the sky above NAS CUBI POINT, Bataan, R. P., to fly high-priority cargo to the steaming aircraft carriers of the U.S. Seventh Fleet, thereby providing direct logistic support to naval forces on combat station in the Gulf of Tonkin.

The carrier-on-board delivery (COD) planes fly as much as 10,000 pounds of vital cargo some 950 miles to the edge of war. The Grumman bubble-nosed C-2A *Greyhound* cargo planes of Fleet Tactical Support Squadron 50 (VRC-50) are in the air almost constantly from Cubi Point.

Flying 15 *Greyhounds* and four C-1 twin-engine, piston aircraft, VRC-50 has had its aircraft aboard CVA's off Vietnam constantly since August 1964. Each day the squadron sends at least one plane to each carrier on Yankee Station. Only the severest weather interrupts the schedule.

Most flights start in the pre-dawn hours on the flight line when loadmasters at Cubi pack the rear-loading *Greyhounds* with everything from mail to bulky jet engines repaired by the station.

The freight planes fly over the mouth of Subic Bay and head northwest toward Tonkin Gulf. Four electronic navigation systems help pilots keep on tight courses during the three-hour flight.

As Lt. Richard B. Bakewell begins his landing approach in his *Enterprise*-bound C-2, he says, "It's real touchy. Things happen fast." A few seconds later, the plane's arresting hook snags the steel deck cable.

An hour later, the pilot and copilot are back in the cockpit waiting for the launch officer to signal the catapult launch. And then the plane is airborne.

In the afternoon, Bakewell makes his rendezvous with a sister C-2 which has delivered mail to the *Enterprise*. In a few hours, they are back in Cubi, and the planes are being prepared for the next flight.

VRC-50 is under the administrative control of Commander Fleet Air Western Pacific and under the operation control of Commander Seventh Fleet and Commander Attack Carrier Strike Force 77. The Strike Force 77 commander sets passenger and cargo priorities and may request COD's for carriers on a day-to-day basis, fitting them in with his attack operations.

VRC-50, commanded by Commander Benjamin B. Fowke, also flies *Sabreliners* to shuttle high-ranking officers and civilians to bases throughout Southeast Asia.



Enterprise crewmen (above) carry mail to a C-2A for return flight to Cubi Point. Below, classified material for Fleet Intelligence Center, Pacific Facility, NAS Cubi Point, is logged aboard a VRC-50 COD plane.



Cargo Aircraft Aid the Seventh Fleet

From Cubi Point, VRC-50 maintains a tight schedule to provide air logistic support to carriers in Tonkin Gulf.

Story and Photos by JO3 Kenneth B. Dalecki



IN AN OPERATIONAL environment, VX-5 carries out its evaluation missions. Above (top), an A-4C, loaded with Mk. 82 500-lb. bombs, prepares to enter one of the instrumented bombing ranges for a drop. Above, Cdr. J. S. Clauzel, projects director, Cdr. D. L. Johnson, maintenance officer, and Maj. J. O'Brien, USAF, review their brief before launching for shipboard carquals. At right, Capt. W. B. Muncie, VX-5 C.O., prepares to man an A-7A for an evaluation flight.

TESTING, TESTING...



At the Naval Weapons Center, China Lake, Calif., Air Development Squadron Five evaluates new carrier aircraft to determine service suitability, detect deficiencies, make recommendations for their correction and determine maintenance and training requirements. The center also develops tactics for day, night and all-weather operations.



THE A-7A is carrying 18 Mk. 82 500-lb. bombs with Snakeye fins and the Phantom (left) is loaded with Mk. 82 low-drag bombs. The picture at right shows a VX-5 ordnance crew loading a Walleye in preparation for a live drop on the range. Below, an A-6A carries a buddy store in an evaluation flight.





THE NAME SPERRY is inseparably linked with the word gyroscope. Above, Elmer A. Sperry, inventor in the field of stabilization and radio control, holds a model. At left is his son, Lawrence, who worked with his father as an engineer and test pilot for the flying bomb in WW I.

Naval Aviation in World War I

DEVELOPING THE FLYING BOMB

One of the antecedents of the guided missile, generally considered a WW II development, was the flying bomb of WW I. In 1936, over a decade after the WW I efforts lapsed, LCdr. D. S. Fahrney (now Rear Admiral, USN, Ret.) was assigned the task of developing radio-controlled target aircraft. Out of this effort emerged the assault drone of WW II, a forerunner of the modern missile. In developing radio-controlled target aircraft, Fahrney first reviewed at the Naval Research Laboratory the radio aspects of the flying bomb of WW I days and the early 1920's. Thus, the work done in WW I, as well as the experience acquired by NRL and the Sperry Gyroscope Co., contributed to the development of guided missiles. This article is based on RAdm. Fahrney's 'History of Radio-Controlled Aircraft and Guided Missiles.'

THE DEVELOPMENT of guided missiles was one of the more obscure and interesting areas of endeavor during World War I. Marconi's first successful wireless transmission in 1896 and the invention of the airplane less than a decade later opened the technological field of electronics and aviation. Of the many areas of utilization in which these two fields have merged, none is more obvious nor more complex than that of the guided missile.

Before WW I, the possibility of using radio to control aircraft intrigued many an able man. One of these, Elmer Sperry, succeeded in arousing the Navy's interest. Although his efforts were visionary, they also had a serendipitous effect and made contributions to such fields as automatic pilots, gyro-stabilized bombsights, flight instruments and catapults.

By Lee Pearson, Historian
Naval Air Systems Command

Sperry was, in many ways, the epitome of the Yankee inventor—with a college education added. His varied and widespread interests included mining machinery, automotive and street railways and electro-chemistry. By 1896, he had added to these an interest in gyroscopes which, during the next 15 years, he adapted to naval use—gyro-compasses for battleships and gyro-stabilizers for destroyers. In 1911, the application of radio control to aircraft intrigued him.

He realized at once that for radio control to be effective, automatic stabilization would be essential, so he again turned to the gyroscope as a promising device. Two years later, in the summer of 1913, the Navy provided assistance in the form of a flying

boat, piloted by Lt. P. N. L. Bellinger, which was used to test and evaluate the gyroscopic stabilizer or autopilot. Elmer Sperry's son, Lawrence, served as engineer during these trials.

The next year, using an improved autopilot, Lawrence won a French prize of 15,000 gold francs. The instrument, though placed in production, proved to be too crude for operational use. On a second trip to Europe, Lawrence, observing the developing techniques of aerial warfare, became convinced that the gyroscope had many applications in military aircraft. Acting upon this recommendation, the Navy Department awarded contracts for the development of such diverse devices as a bombsight, a stable reference line (called a "base line indicator," but the forerunner of the turn and bank indicator) and a gyro-com-

pass. By 1916, the Sperrys had not only had five years of experience in attempting to develop aeronautical uses for gyroscopes but also had achieved some degree of success with their gyro-stabilizers.

At this time, they temporarily joined Peter Cooper Hewitt to develop an aerial torpedo or explosive-laden, pilotless aircraft. Hewitt, best known as the inventor of the mercury vapor lamp, worked on other electrical and radio devices and contributed to the development of the vacuum tube. Thus by combining the ability of Hewitt in radio with that of the Sperrys in gyroscopes, early success was anticipated.

Hewitt and Elmer Sperry were both members of various committees of the Naval Consulting Board which Secretary Josephus Daniels had established in 1915 to provide "machinery and facilities for utilizing the natural inventive genius of Americans to meet the new conditions of warfare." Sperry belonged to four committees; Hewitt to three. They were both members of the Committee on Aeronautics and Aeronautical Motors, Elmer Sperry eventually succeeding to its chairmanship.

In the summer of 1916, Hewitt and Sperry arranged for a representative of the Navy's Bureau of Ordnance, Lt. T. S. Wilkinson, to examine their aerial torpedo. This torpedo consisted of a gyroscopic stabilizer, a directive gyroscope, an aneroid barometer to regulate height, servo-motors for control of rudders and ailerons, and a device for distance gearing. These were installed in an airplane which could be catapulted or flown from the water and would mount to a predetermined altitude, fly a pre-set course, and, after traveling a pre-set distance, drop its bombs or dive to the ground. Wilkinson reported that the aerial torpedo did not possess a degree of accuracy sufficient to hit a ship, but, because of its range of 50 to 100 miles, it might be of interest to the Army.

Immediately after the declaration of war upon Germany, Sperry began urging the Navy to embark on the development of an aerial torpedo. In this he was supported by the Naval Consulting Board which requested that SecNav apportion \$50,000 to carry out experimental work with aerial torpedoes in the form of automatically controlled machines capable of carry-

ing explosives. With this recommendation, the government included development of a flying bomb, or aerial torpedo, in its war preparations. Elmer Sperry later recalled, "It was settled in the [Senate] that the torpedo should be of two classes," one of which would be completely automatic and the other rigged for wireless control.

The details were settled by May 17 when Elmer and Lawrence Sperry met with the Secretary and other Navy officials. The Navy would furnish five N-9 seaplanes and purchase six sets of Sperry automatic control gear. Sperry would construct hangars, furnish testing grounds and secure a staff. Secretary Daniels approved spending \$200,000 on this project, half to be administered by the Bureau of Ordnance and half by the Bureau of Construction and Repair and the Bureau of Engineering.

Once a course of action had been determined, the Sperrys went to work. As they got underway, seven large planes were turned over to them and a flying field at Copiague, Long Island, was obtained. A number of hangars were established there with a Marine guard for security. Aerial torpedoes were tried out in well over a hundred shots before the Armistice was signed November 11, 1918.

OBTAINING a field, erecting hangars, obtaining aircraft and constructing the control gears took time. In the interim, Sperry proceeded upon the second phase, development of radio control gear. He employed a radio engineer to design some of the necessary apparatus. The fact that Western Electric was working on audion amplifiers and other radio devices led Sperry to believe that the solution to the "wireless end of the aerial torpedo" was in sight. Thus encouraged, he purchased rights to other radio inventions.

(To look ahead, these radio control systems were not tried out in the Navy's aerial torpedo. However, under the auspices of the Naval Consulting Board, the Sperrys applied radio control to a conventional bomb by which a parachute, or "black umbrella," was attached to the bomb and marked with a big aluminum arrow. Thus the aircraft crew could observe the trajectory of the falling bomb and send out corrections via radio. A receiver in the bomb set a mechanism in motion

to adjust the trajectory. In tests, this mechanism was controlled from a distance of four miles.

(Later, in 1922, the Sperrys constructed "messenger" planes to A. V. Verville's design for the Army and fitted some of them with aerial torpedo gear and a radio control system developed by the Army Air Services engineering division. These craft "hit" targets at 30, 60 and 90 miles from the point of takeoff.)

To return to the 1917 flying bomb, aside from the development of radio, Sperry's initial work dealt with testing and perfecting mechanisms for maintaining course and measuring distance.

Test flights in which the pilot took the Navy-furnished N-9 off and then turned control over to the automatic gear commenced in mid-September. This gear, it was reported, would fly the plane to the designated target and drop a bag of sand on command from the distance gear. By mid-November, 30-mile test flights were being made regularly with an error in range of about two miles.

During this phase, Rear Admiral Ralph Earle, Chief of the Bureau of Ordnance, submitted his ideas on the best ways to win the war quickly. Most important was nullification of the submarine menace by destroying these vessels and their home bases. One of his suggestions was that vessels carrying flying bombs could take station off shore from the German submarine bases of Wilhelmshaven, Cuxhaven and Helgoland. The flying bombs, which were little more expensive than water torpedoes and could carry one-and-a-half times their explosive load, would then be launched. RAdm. Earle described these bombs as capable of destroying docks, submarines, destroyers, floating docks, gun factories and so on. (This suggestion contained an element of prophecy: In September 1944, a B-24 drone attacked the WW II submarine installations at Helgoland after an earlier attempt had resulted in the death of Lt. Joseph P. Kennedy, Jr., and Lt. Willford J. Willy when their explosive-laden plane exploded in mid-air before they could set the controls and parachute to the ground.)

Despite the Chief of BuOrd's recommendation and the early tests, the Chief of Naval Operations laid down this policy: While the flying bomb was to be developed to the point of complete readiness for production, no

facilities were to be obligated in order to manufacture it for the Navy. BUORD therefore sought by some means to obtain airframes and engines in large quantity without interfering with scheduled aircraft production. In addition, the Navy invited Major General George O. Squier, Chief Signal Officer of the Army, to witness a demonstration of the flying bomb. Squier caused a somewhat parallel project to be set up by the Army at McCook Field, Dayton, Ohio, although with much greater emphasis upon producibility and low cost.

Development of the flying bomb involved solution of several serious problems. It was necessary to obtain a practicable airframe, find means of launching a pilotless vehicle and make sure that the control mechanism would operate effectively after a pilotless launch. Since these problems were interrelated, difficulties with the launching device obscured the aerodynamic inadequacies of the airframe, and both served to blur short-comings of the control mechanism.

With regard to the airframe, little was done to obtain a more efficient machine until Sperry began demonstrations with the N-9 in September 1917. Then, in October, a rush order was sent to the Curtiss Aeroplane and Motor Company for six planes of special design with an empty weight of 500 pounds, a top speed of 90 miles per hour, a range of 50 miles and the capability of carrying an explosive load

of 1,000 pounds. The engine was to be as light as possible and the plane was to be fitted for special control equipment.

The first of these planes (hereinafter identified as the Curtiss or the Curtiss-Sperry flying bomb) was delivered on November 10, just within the 30-day deadline specified in the contract. It had never been flown as a piloted craft nor checked in a wind tunnel. Even had the flying bomb been based upon a proven design, it would still have constituted a radical departure and required additional testing.

A couple of abortive attempts to launch the craft as a flying bomb led to the realization that some knowledge had to be obtained of the craft's flying characteristics. One of the planes was then fitted with a ski-type landing gear and taxied over the ice for the purpose of adjusting the ailerons and elevators. Lawrence Sperry, rashly deciding he would be the test pilot, had the plane fitted with a seat and standard stick control. While taxiing for his first takeoff, the plane struck a bank of slushy snow, turned two somersaults and was completely wrecked. Sperry walked away unhurt. Undaunted he tried again and this time got plane #2 into the air. When he cut in his automatic controls, they wrested the plane away from him and turned it over laterally twice. Fortunately, he succeeded in righting it and in landing safely.

Clearly something more was re-

quired than flight test of the airplane. With true Yankee ingenuity, Lawrence Sperry and his assistant, N. W. Dalton, fitted a Marmon automobile with an airplane motor and attached to it a frame on which they could fasten the flying bomb. With this rig, they drove over the Long Island Motor Parkway at 80 miles per hour to make a kind of open-air wind tunnel test. Finally, they succeeded in getting what they considered to be satisfactory adjustments to the plane's control surfaces and automatic gear. This led to two launching attempts, one successful and one unsuccessful.

In August and September 1918, two tests of the Curtiss flying bomb were made; two flights of 100 yards were achieved before the planes crashed to the ground. Of these, only one was blamed upon the flimsy aircraft structure, but disgust was complete. The Curtiss flying bomb was abandoned in favor of a return to the N-9. In the meantime, the Sperrys had built a model for wind tunnel tests and these were eventually carried out at the Washington Navy Yard, but not until after cessation of work with the Curtiss flying bomb.

THE PROBLEM of launching a pilotless aircraft or flying bomb was as complex as that of determining the flight characteristics of the airframe. The initial Hewitt-Sperry concept—Wilkinson examined their aerial torpedo in September 1916—was that the device would be launched by catapult or from the surface of the water. In any event, when the Sperrys made the first pilotless tests of the flying bomb late in 1917, they launched it by sliding it down a wire cable. In this launch, a wing was damaged. On the second trial, the plane arose from the wire but immediately plunged to the ground.

These failures led to the abandonment of the wire-launching apparatus in favor of a more conventional catapult consisting of a 150-foot track. Power was obtained by dropping a three-ton weight from a height of 30 feet. Troubles continued. On the first attempt to use this device, the flying bomb lagged the car, damaged its propeller and then the plane turned over on its nose. A month later the catapult worked satisfactorily and the plane seemed to respond to its automatic controls, but proved to be tail-



A CURTISS-SPERRY FLYING BOMB IS SHOWN HERE MOUNTED FOR A CATAPULT LAUNCH

heavy when it took to the air, stalled, side-slipped and fell to the ground.

These failures were followed by the already recounted hair-raising experiences when the flying bomb was put on sled runners. Then came the trials with the Marmon automobile. After the controls were satisfactorily adjusted, a launch was actually made from the car on March 6, 1918. The machine left the car cleanly and flew the thousand yards for which the distance gear had been set, descended and struck the water with only moderate damage. This was epoch-making in that for the first time in history an unmanned plane had made a smooth, stabilized flight in response to automatic control. The feat could not be duplicated on a second attempt, so a decision was made to use a smoother roadway.

The Marmon was fitted with railroad wheels and an idle spur of the Long Island Railroad, four miles east of Farmingdale, was brought into service. A run was made down the track but, before flying speed was obtained, the plane developed sufficient lift to raise the front railroad wheels of the car so that they came free and another crash resulted.

The deficiencies of these three methods of launching led the Sperrys to try a new type of catapult in which a heavy flywheel was spun at high speed. Through a clutch and drum arrangement, the flywheel imparted a constant acceleration to the car carrying the flying bomb. (To perform the detailed design work, the Sperry Company employed a young consulting engineer, Carl L. Norden.) This device was not completed until August when its first test ended in failure. Two more trials the next month were only partially successful. After this the N-9 returned to favor. Preparations were finally completed in mid-October and on the 17th a launch was made. The plane was catapulted cleanly. It climbed steadily, flying in a perfectly straight line at an angle of about two degrees to the proposed line of flight. The distance gear had been set for eight miles, but it failed to function, so the plane continued on course and was last seen over Bayshore air station heading east at a height of about 4,000 feet.

The third area of problems connected with the flying bomb was the stabilization system. In the various

unsuccessful attempts to launch the craft, behavior of this gear could not be checked. It had misbehaved during Lawrence Sperry's piloted test flight. One of the purposes of the tests on the Marmon automobile had been to observe its functioning at flight speed. Satisfactory settings were made for the one successful flight. The acceleration imparted to the plane by the flywheel catapult would have caused the gyroscope to precess. To prevent this—at least for the last flight—the gyroscopes were not released until the launch was completed. At the same time, additional batteries were provided to insure adequate power for the gyroscopes.

In the last launch, on September 26, 1918, the flying bomb made a straight climbing flight of about 100 yards, spiraled and crashed. Either the stabilization system or the airframe was at fault and changes were made to both. The stabilization gear which had been used for all work with the flying bomb was abandoned in favor of the four-gyroscope unit tested earlier in the N-9. The single gyroscope system adapted from the underwater torpedo gear was retained for course, or azimuth, control in order to operate the vertical rudder. For the successful flight of the N-9 on October 17, this course and stabilization gear functioned satisfactorily. Even so, the Navy requested Carl Norden to examine the various Sperry devices and to recommend improvement.

The Navy continued to press its view on how to proceed and was actually contemplating purchase of new flying-bomb airplanes on its own, rather than through the Sperrys. The flight with the N-9 may have been an effort in part to restore Navy confidence; if so, it was to no avail. Sperry made various attempts to stir up additional enthusiasm by calling the flying bomb "the gun of the future" and an important step towards "making war so extremely hazardous and expensive no nation will dare go into it." Despite this, at war's end, the Navy took over from Sperry complete control of the flying bomb development.

DURING the early post-war years, the Navy sponsored similar projects. For the first of these, Witteman-Lewis aircraft and Norden-designed gyro-stabilizers were used. Demonstrations at Dahlgren were no more successful than those achieved by the Sperrys. In 1921, the project was again reoriented to emphasize the radio control aspect. The control gear was developed at the Radio Laboratory at NAS ANACOSTIA (later the Naval Research Laboratory). Aircraft installations were made, beginning in 1923, and, despite relatively successful demonstrations of technical features, interest waned and the project lapsed in 1925. Over a decade was to pass before the Navy seriously undertook the development of target drones and military versions of pilotless aircraft.



AN AUTOMOBILE IS SUBSTITUTED FOR A WIND TUNNEL IN A TEST OF A FLYING BOMB

CARRIER FLAGMAN



LAUNCHING an aircraft from a carrier is exciting—and its recovery is equally so.

Aboard USS *Kitty Hawk* (CVA-63) on station in the Gulf of Tonkin, one of the men responsible for bringing the planes "home" is Lt. Donald A. Gerrish, an A-4 *Skyhawk* pilot attached to Carrier Air Wing Eleven. He alternates his strike missions with his LSO duties.

Standing on a small platform, Lt. Gerrish and two airmen stay in direct voice communication with the pilot, the air boss in Pri-Fly and the crew manning the arresting gear. An assistant LSO stands by, logging each recovery and providing a backup.

One by one, the returning planes are cleared to land. Now Gerrish and his crew "take the helm" of each approaching aircraft and talk each pilot down.

"There is always the human element," says Lt. Gerrish. "Someone has to keep an eye on each plane, keep it in the groove and ensure a correct approach."

When weather reduces visibility, an approaching plane depends on radar and other navigational instruments; the LSO depends on the plane's lights. Neither pilot nor LSO can see each other until the plane is nearly aboard.

As he braces himself against the 35-mph wind and the jet blast of each landing, Lt. Gerrish holds a "pickle" switch in his hand. One touch of that switch and a string of red lights flash on and off, warning the pilot to wave off. The final decision on landing an aircraft is made by the LSO.

In days to come, when all carriers are equipped with automatic landing aids, Lt. Gerrish—and his fellow LSO's—will still be the "flagman at the finish line."

Story and Photos by
Warrant Photographer Rodney C. Moen



WITH ONE HAND on the pickle switch and the other on the phone, Lt. Gerrish maintains contact with returning pilots (top). An F-4 Phantom catches a wire just before touchdown on board *Kitty Hawk* (center). And we provide you a close-up look at the tools of an LSO (above). At right, Lt. Gerrish keeps an A-6A Intruder in the groove as he talks him in for an arrested landing aboard CVA-63.



Historical Prints Available Twelve Lithographs in Full Color

Twelve color prints depicting some of the highlights of U.S. naval history from the Revolutionary War through WW I are now available.

Each print contains a descriptive caption and pertinent quotation. The pictures are suitable for display in crew's spaces, mess rooms, recreation spaces and offices.

The 12 prints, each 16 by 20 inches, are available only as a set. The Navy Cognizance "OI" stock number is 0584-900-0025.

The series is stocked as a publication at the Naval Supply Depot, Philadelphia, Pa., and can be ordered on Mil-strip format DD 1348. All issues for official use are without charge.

Individuals may purchase the series for \$2.50 directly from the Superintendent of Documents, GPO, Washington, D.C. 20402.

Marines Get GB-1A Units Produce Both Oxygen and Nitrogen

Wing Equipment and Repair Squadron 27, MCAS CHERRY POINT, N. C., recently received four of the new GB-1A liquid oxygen/liquid nitrogen



A MEMBER of VF-24 and a veteran of aerial combat over North Vietnam, LCdr. C. F. Blaker, inspects supersonic Firebee II aerial target following roll-out ceremonies at the Naval Missile Command, Point Mugu, Calif. Firebee II, developed by Ryan Aeronautical Company, can maneuver at greater speeds and altitudes than the standard target now in use.

generating plants, valued in the neighborhood of one million dollars.

First of their kind, the Marine Corps-developed units weigh 15,000 lbs., are about half the size of the ones now in use and produce three times the oxy-

gen and nitrogen. They manufacture oxygen and nitrogen simultaneously.

Oxygen manufactured by the unit is liquefied at -297° F. and stored in 500-gallon tanks where it is kept at a low temperature by a vacuum created around an inner tank. Nitrogen is liquefied at -320° F. and pumped into a second tank which can be towed wherever it is needed.

The liquid oxygen-producing mechanisms now in use are housed in 18-ton trailers and produce either one ton of oxygen or one ton of nitrogen per day.

Fiesta Time at Pensacola 250 Silver Eagles Plan to Attend

About 250 members of the Silver Eagles with their families are expected to arrive in Pensacola for the 19th celebration of the Fiesta of Five Flags which begins June 8.

The Silver Eagles are retired enlisted pilots of the Navy. Membership in the group dates back to pre-WW I days.

More than 60 events are planned for this year's Fiesta. Two new ones are scheduled: a fish net casting contest and a photography contest. Events will continue through October.

NAVY MAN RECEIVES PHOTO AWARD

First Annual NANEWS Contest Won by PH3 Sellas



CAPTAIN T. P. Dankworth, C.O. of the USS Bon Homme Richard, congratulates PH3 Darryl Sellas on his winning the first annual Best Single Photograph Contest published in Naval Aviation News. "I was really shook up," the prizewinner said later. "I've won some awards before, but I just wasn't expecting this one at all."





SELECTED

Recruiting Awards

On behalf of Rear Admiral W. S. Guest, CNAResTra, Rear Admiral D. H. Guinn, CNABaTra, presented two national recruiting awards to NARTU JACKSONVILLE during the unit's annual military personnel inspection. Captain Carl D. Simonsen, C.O. of the unit, accepted the awards.

The Ling-Temco-Vought and Bear Trap Trophies are awarded each year to the unit in CNAResTra achieving the highest attainment, and showing the greatest improvement, in officer procurement.

In forwarding the awards, Admiral Guest said, "The devotion to duty and sincerity of purpose carried out by the officers and men in the recruiting department of NARTU JACKSONVILLE are commendable."

Refresher Course

Recently, over 100 chiefs attended a refresher course held at NAS GROSSE ILE. The five-day meeting offered eligible E-7 and E-8 personnel an opportunity to increase their knowledge so they can compete in the E-8 and E-9 rating examinations. Classes offered included physics, military principles, leadership, math and basic machines.

Previously, the refresher classes were offered only to active and reserve chiefs at NAS GROSSE ILE. But the results were so successful that AGC K. D. Evens and BMCS R. O. Knop sent letters inviting chiefs from other stations to attend. The response was so overwhelming that personnel from five stations had to be turned away for lack of accommodations.

Alpha Qualified

During a recent ASW exercise in the Gulf of Mexico, a ten-man patrol squadron crew from NAS NEW ORLEANS became the 12th crew in the Naval Air Reserves to be Alpha-qualified.

The elite crew, all members of VP-822, are LCDrs. Kenneth I. Condra and David E. Harman, Lt. William G.

Koonce, ADC Fabian Greenwell, AT1 Robert O. Huffman, AM1 Mack O'Connor Riley, AM2 John H. Hight, AS2 William G. Brown and AX3's Nathan S. Hebert and Ted H. Chapman.

Naval Air Reserve units participating in the training exercise commanded by Rear Admiral Pierre N. Charbonnet, Jr., Com8ND, came from Memphis, Tenn., Dallas, Texas, and New Orleans, La.

Commuting Problems?

Consider the case of Commander Wallace H. Peterson, commanding officer of VR-813, NAS TWIN CITIES. Since 1960, he has commuted nearly 300,000 miles to attend weekend drills with his unit.

Cdr. Peterson, a DC-9 captain for Eastern Airlines, has been given civilian assignments that made it necessary for him to commute to Minneapolis from Miami, Chicago and New York.

Assigned to flights out of Miami from 1960 to 1966, he flew 4,000 miles a month to attend drills. Then

he was transferred to Chicago, continued his commuting, and last year was assigned to New York from where he estimates the round trip to be 2,000 miles.

By the time Cdr. Peterson completes his 20 years, he expects to commute approximately 304,000 miles.

New York C.O. Honored

Captain David S. Stear, commanding officer of NAS NEW YORK, was recently presented the B'nai B'rith Brotherhood Award of the Equality Lodge of Belle Harbor, N.Y. Mr. Mel Klarfeld awarded the plaque.

The plaque expressed "appreciation for his splendid cooperation in encouraging religious observances of all faiths at Floyd Bennett Field."

Community Service

Captain J. R. Rohleder, Naval Air Reserve Staff 86, NARTU NORFOLK, presented a demonstration of the optical maser to 65 members of the Cox High School Industrial Arts Club in Norfolk recently.



CAPTAIN E. E. KERR, C.O. of Fleet Intelligence Center, Pacific, Pearl Harbor (at left in both photos), has cited NAIRU-771, Los Alamitos, and NAIRU-891, Seattle, for "outstanding support to the Fleet Intelligence Center, Pacific, during 1967." Captain L. E. Hatfield, C.O. of NAIRU-771 (photo at left), and Captain Hugh A. Robertson, NAIRU-891, accepted plaques.



AIR RESERVE

Capt. Rohleder showed the students how the coherent beam of light generated by the maser can carry conversation over great distances, theoretically vaporize objects in space, remove tumors and even perform the delicate operation of repairing a detached retina.

"The maser's beam," he told the class, "is capable of carrying one billion telephone circuits and one million television channels, as well as radio and data processing material."

The optical maser, which can produce a beam of light a million times brighter than the sun, is expected to revolutionize communications, medicine, industry and the military.

Capt. Rohleder, a supervisor of customer information for the Bell Telephone Co., gives these demonstrations to local groups during his weekend drills with the Norfolk unit.

The Eyes Have It

The officers and men of VR-742, NARTU JACKSONVILLE, recently turned out en masse and pledged their

eyes to the Florida Lion's Eye Bank for future eye restoration.

This was the end of a chain of events which began a year ago when the wife of the squadron's commanding officer, Commander E. E. Grant, had an accident which left her totally blind in one eye. Ten weeks ago a corneal transplant restored her sight and inspired squadron members to pledge their eyes for the same purpose.

Management Seminars

Commander Spencer L. Truex, public affairs officer of Naval Air Reserve Staff 86 at NARTU NORFOLK and an industrial engineer in civilian life, is conducting a management seminar for key officers of the unit.

The monthly seminar updates management concepts and methods and promotes sound management practices and procedures. This unique approach, utilizing the civilian talents and training of Reservists, has been so successful that plans are underway to provide a similar type of training for the enlisted supervisory personnel.



CAPTAIN STEAR receives the B'nai B'rith award from Mr. Klayfeld as Mrs. Stear looks on (left). Retiring Commander H. B. Davis, C.O. of VA-772, got an unexpected assist from LCDrs. R. E. Ervin (left in top photo) and S. D. Barling, Jr., when he made his final flight as a Weekend Warrior at Los Alamitos. Above, Cdr. Truex conducts management seminar at Norfolk.



ON PATROL

with the Fleet Air Wings

Under SecNav on ASW Flight

In January, Under Secretary of the Navy Charles W. Baird was given a realistic demonstration of air ASW by Crew Six of VP-24 and Crew 11 of VP-44, the Patuxent River-based squadrons.

While flying in an *Orion* aircraft from Washington, D.C., to Florida via the Atlantic Ocean, Under Secretary Baird was shown the various duties performed by an antisub crew. VP-24's PPC, LCdr. E. A. Wilkinson, Jr., was on hand, as was TACCO, Ltjg. C. L. Wicker, who was prepared to answer questions during the simulated ASW exercise.

VP-44's Crew 11, led by Commander Tommy H. Warren, demonstrated its latest equipment and tacti-

cal procedures while flying out of Patrick AFB, Fla. The USS *Argonaut* played the role of enemy sub.

Americans in Ireland

Earlier this year, VP-44's Crew Three, led by LCdr. Craig Campbell, departed NAS PATUXENT RIVER and headed toward the land of the leprechaun; their destination was an RAF station at Bally Kelly in Northern Ireland. Here they took a course at the Joint Antisubmarine School with other forces of NATO, attending three weeks of lectures and exercises together with British, Canadian, Australian, Norwegian and Dutch aircrews, submariners and sailors.

Highlighting the lectures was a presentation given by Dr. J. Dean, pro-

fessor of oceanography at the University of Paris. With slides and films he illustrated the various uses of the oceans and their importance to the future of mankind.

Another lecture covered the capabilities of the ASW British aircraft *Nimrod*, a totally new jet-powered maritime patrol aircraft, similar in capability to our P-3C.

The second and third weeks of the course were primarily ocean-going exercises, the aerial forces being coordinated with ships in the pursuit of a simulated enemy submarine force, represented by British submarines.

Another group of 18 officers and men from VP-4, led by the C.O., Commander W. P. Vosseler, Barber's Point, and two other officers—one the C.O. of VS-33, the other from FAW-2 staff—also visited Northern Ireland for a three weeks' course.

The "Blarney" crew, as they were dubbed, attended the Joint Antisubmarine School at Londonderry. The course, which consisted of two weeks of class time and one of flight, included training with flight crews of various NATO nations, trips aboard foreign ships and flights in the British ASW aircraft, the *Shackleton*.

If one of the Blarney crewmen, AO2 Jimmy D. Autrand, wants to spread an unusual sea story later on in his naval career, he can say, "I just happened to be passing by London on my way from Hawaii to Ireland—so I said to this four-star admiral, 'How about re-enlisting me for another four?'"

Well, it didn't happen quite that way, but this version of the incident isn't too far out.

This is the way it really happened: Autrand stopped over in London on the very day he had to re-enlist after four years in the Navy. On learning of the planned re-enlistment, Admiral John S. McCain, Jr., immediately volunteered to do the honors—and within the hour Autrand became one of the



UNDER SECNAV Charles W. Baird tries on his VP-44 ball cap as Commander Tommy H. Warren, Col. W. H. Campbell of Patrick AFB, Fla., and Ltjg. Fred Sitton, TACCO of Crew 11, look on. The Secretary reads a brochure on the P-3 Orion. The USS *Argonaut* "subs" for enemy sub.

few enlisted men to be "shipped over" by a four-star admiral.

While in Ireland, the Blarney crew had an opportunity to visit local families. One crew member, when asked if he would like to return to Londonderry sometime in the future, replied, "How about tomorrow?"

"There's not a stranger in Ireland," said another of the crewmen, on his return to Barber's Point. Three of the returning men, Ltjg. Philip J. Hardy, AE1 Roger L. Moore and ADJ1 H. R. Lincoln, agreed that the trip was one of the highlights of their careers.

VP-22 Gets Navy Commendation

The Secretary of the Navy has awarded the Navy Unit Commendation to VP-22, based at NAS BARBER'S POINT.

VP-22 was cited for "exceptionally meritorious service from February 22 to March 22, 1967, during antisubmarine warfare operations in the north Pacific Ocean. In the face of extremely harsh climatic conditions and round-the-clock operating schedules, the flight crews and ground support personnel of VP-22 carried out their highly important and most sensitive mission with outstanding skill and dedication."

Commander John T. Coughlin, VP-22's C.O. during this period, was awarded the Legion of Merit.

Japanese Admiral Flies P-3A

Rear Admiral N. Ando, a member of the Japanese Maritime Self Defense Force, flew in one of VP-22's *Orions* as part of his recent tour of major Navy installations in Hawaii.

During the orientation flight with Commander James M. Barron, C.O. of VP-22, RAdm. Ando flew the aircraft for a short period of time. He was given an extensive briefing of the ASW gear by Lt. R. A. Capwell, TACCO of the squadron's Crew Four.

The admiral was a guest of the Chief of Naval Operations, who conducts a yearly training program with the Japanese Maritime Self Defense Force. RAdm. Ando's position is the equivalent of VCNO.

What is a P-3 Orion?

For those individuals who are not familiar with such things as horsepower, gross weight, nautical miles and other terms often associated with aircraft and aviators, VP-9, NAS



ADMIRAL McCain, CtnC, United States Naval Forces, Europe, congratulates Anstrand.

MOFFETT FIELD, led by Commander Gordon J. Schuller, releases the following:

The *Orion* is a sophisticated anti-submarine warfare patrol plane powered by four turboprop engines each of which develops horsepower equivalent to approximately 330 Volkswagens or 73,600 washing machines.

Any engine that develops that much power requires tremendous quantities of fuel. A juvenile delinquent who wished to steal enough gasoline to fill the wings of the *Orion* would have to siphon the tanks of 1,000 Volkswagens, which, at a flow rate of one

gallon per minute, would take him 166 hours, or enough time to fly the same aircraft around the world three times with a slight tail wind.

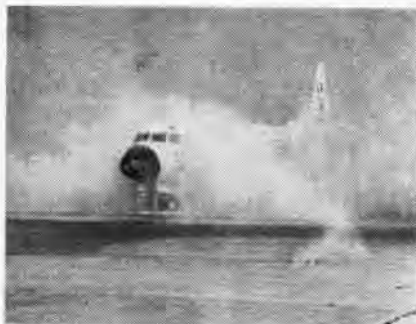
Rinse Down Facility at Jax

A new \$25,000, aircraft rinse-down facility, capable of thoroughly washing down an airplane in less than five minutes, is now in operation at NAS JACKSONVILLE.

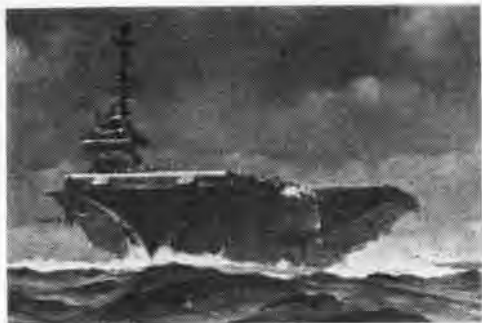
With 60 nozzles spraying 1,000 gallons of fresh water a minute, the new unit rinses corrosion-causing salt water from returning patrol aircraft stationed there. Fully automatic, the spray begins when an airplane taxis over the grid while moving from north to south.

A member of the station's air operations, Lt. W. E. Schultz, says, "Even though aircraft will still have to be put on the racks and washed by hand periodically, the automatic facility will keep corrosion down to a minimum and will certainly prove to be a considerable saving to the Navy."

Pilots from other military installations may use the spray equipment by radioing the air operations tower at Jacksonville before landing.



ORION TRIPS the shower mechanism, taxis through spray-down unit and comes out clean. There are 60 nozzles spraying 1,000 gallons of fresh water a minute; the operation is fully automatic. The new \$25,000, aircraft rinse-down facility has been installed at Jacksonville.



at-Sea With the Carriers

PACIFIC FLEET

Ticonderoga (CVA-14)

A letter to the families and friends of 3,367 men aboard the veteran carrier, signed by Capt. Norman K. McInnis, C.O., went out after the ship reached the Gulf of Tonkin. The letter gave an interesting account of the ship and its trip across the Pacific, the storm encountered, the inspections held, and the situation *Tico* faces in Vietnam. A picture enclosure added spice to the letter which must have been welcomed by the recipients.

During the course of one day's strikes, three milestones were reached: LCdr. Donald Ward of VAH-4, piloting an A-3B tanker, made the 100,000th catapult launch since *Tico* was recommissioned in 1954. Capt. McInnis personally served as the catapult officer for the launch. He himself was an A-3B pilot and is a former C.O. of VAH-3 and VAH-123.

The same day, LCdr. Jack Nichols, also of VAH-4, made *Tico's* 106,000th

arrested landing since 1954. To complete the day, Ltjg. E. F. Armstrong made the 3,000th recovery of the current WestPac cruise.

Enterprise (CVAN-65)

Landing an airplane on a carrier is never a simple task, especially when it's the large, multi-million dollar, twin-engine E-2A *Hawkeye*.

In one week, three E-2A pilots of VAW-112 became Centurians when they made their 100th landings aboard *Enterprise*: Commander Forrest D. Goetschius, VAW-112 skipper, Lt. Frank A. Miley and Lt. Daniel E. Bienlien. All are on their second deployment to WestPac.

The *Silverkings* of VF-92 gained a new skipper when Commander Schenk Remsen relieved Commander Jimmie L. Rough during ceremonies aboard *Enterprise*. Cdr. Rough is due to report to the Naval Air Systems Command.

Constellation (CVA-64)

Not often does an attack aircraft carrier participate in an amphibious operation, but *Constellation* did it

while being tied up at North Island.

The ship was host to 18 high-ranking military officers from nine different countries, who were attending an amphibious warfare course conducted by the Naval Amphibious School in nearby Coronado, Calif.

The three-month course which ends this month instructed the officers in current amphibious doctrine and provided them with the knowledge with which to develop an amphibious capability in their own countries. The countries represented were Brazil, Chile, Mexico, Republic of China, Republic of the Philippines, Thailand, Spain and Venezuela.

Hancock (CVA-19)

The USS *Hancock* has been awarded the Meritorious Unit Commendation for combat service in Vietnam. Squadrons in Attack Carrier Air Wing Five, which were embarked in the ship during the cruise, shared in the honor.

The citation, signed by Admiral Thomas H. Moorer, CNO, reads in part: "As a member of the Yankee Station forces, *Hancock* contributed



CAPTAIN N. K. McInnis (seated), C.O. of *Ticonderoga*, discusses job of carrier skipper with Captain J.S. Kenyon, the prospective *Oriskany* C.O.



LCDR. K. D. Wiecking explains bridge to Major General Yang Yu-San, Republic of China Marine Corps, during visit to the USS *Constellation*.

significantly to the combat mission of the United States Seventh Fleet by conducting numerous successful missions against heavily defended enemy military and logistic installations and lines of communication." The citation praised the professionalism, determination and resourcefulness of the officers and men of the *Hancock* and her embarked air wing. Rear Admiral F. A. Bardshar, ComCarDiv Seven, made the presentation.

The *Fighting Hannah* is undergoing an eight-month overhaul period at the San Francisco Bay Naval Shipyard at Hunter's Point. Her present C.O. is Captain Howard E. Greer.

Work has been progressing well. In March, berthing compartments below the main deck were being turned over to the ship on schedule and the crew was beginning to move back aboard.

Coral Sea (CVA-43)

Captain James Ferris relieved Captain William H. Shawcross as commanding officer at ceremonies aboard the ship at Sasebo, Japan. Rear Admiral Horace H. Epes, ComCarDiv One, was the guest speaker.

Captain Ferris has commanded VF-33, Attack Carrier Air Wing Eight, CRAW-4 and an oil supply ship.

Kearsarge (CVS-33)

While operating in the Gulf of Tonkin, the 116,000th arrested recovery was made on the carrier's deck. Lt. C. Q. Bowlin of VS-21 was qualifying in the S-2E *Tracker*. Flying with him was LCdr. Dale E. Westbrook.

Bon Homme Richard (CVA-31)

Carrier Air Wing Five, commanded by Commander D. B. Miller, celebrated an anniversary aboard CVA-31 en route to the Gulf of Tonkin.

The wing served initially in USS *Yorktown* (CV-5) as Carrier Air Group *Yorktown* from 1938 to 1942. The wing declares that this was the first group to receive the Douglas SBD *Dauntless* dive-bomber and the first to accomplish aircraft launchings from flush-deck catapults.

The outfit had an outstanding combat career in WW II, serving in the new *Yorktown* (CV-10) after the old *Yorktown* was lost in the Battle of Midway. It also served in the USS *Franklin* (CV-13).

CVG-5 was the first carrier unit to go into action in Korea in 1950, flying the F9F jet fighter and the AD *Skyraider*.

On July 13, 1964, the air wing, then embarked in USS *Ticonderoga* (CVA-14), assumed duties on Yankee Station. It was CVW-5's aircraft that repulsed the initial North Vietnamese PT boat attacks on the USS *Maddox* and the USS *Turner Joy*.

The wing has begun its fourth combat cruise off North Vietnam.

Hornet (CVS-12)

During their seven-month WestPac deployment in USS *Hornet*, two squadrons, VS-35 and VS-37, flew in excess of 8,000 hours and logged more than 2,100 landings each. Each squadron exceeded 10,000 accident-free

carrier landings during calendar 1967.

Carrier Air Group 57 is commanded by Commander R. J. Harlow, and Commander E. J. Klapka and Commander R. A. Costigan are the skippers of VS-35 and VS-37, respectively.

Captain Jackson A. Stockton has relieved Captain Gordon H. Robertson as commanding officer in ceremonies aboard ship at Long Beach, Calif.

Kitty Hawk (CVA-63)

Capt. John C. Price, USAF, a former F-100 pilot with the Third Tactical Fighter Wing at Bien Hoa, South Vietnam, has been flying the Navy's F-4B *Phantom* with VF-213 since July 1967 from the decks of CVA-63.

"There's nothing in the Air Force that compares to the tempo of carrier operations," Price says. "To launch and land on 700 feet of moving steel is a far cry from having a mile of solid ground to play with."

The 31-year-old aviator is a part of the Armed Forces exchange program which is designed to afford flight officers a better understanding and appreciation of the operational problems of other services.

Capt. Price has logged over 300 air hours and flown 35 combat missions with the Navy. His radar intercept officer, Lt. Roger B. Woodbury, says of him, "Price is a pro by every stretch of the meaning, but he can't help getting ribbed for his choice of service. We call him 'Air Force One.'"

The 75,000th arrested landing was made by Ltjg. Joseph L. Croteau of VA-112 in his A-4C *Skyhawk*. Later,



KITTY HAWK'S Lt. James E. Holian, VA-75 pilot, explains the carrier's air operations to his father, a submariner, Cdr. J. J. Holian (left).



IN OCTOBER 1967, *Hornet* returned from a seven-month deployment to WestPac where the veteran spent as many as 43 consecutive days at sea.



in another *Skyhawk*, LCdr. Robert Saavedra of VA-144, made the 76,000th landing.

A happy reunion took place aboard *Kitty Hawk* when Lt. James E. Holian met his father, Commander J. J. Holian, as he flew aboard the *Hawk*.

Lt. Holian flies an A-6A *Intruder* for VA-75 and was aboard *Kitty Hawk* for its WestPac cruise. His father was in the area on official business when he came to the carrier to spend the night with his son. Commander Holian is a submariner.

Teamwork, determination and skill were combined on *Kitty Hawk* when it was necessary to complete at sea a Fresnel lens installation. A C-1A had crashed into the lens, knocking it into the sea.

To remedy this, a civilian technical adviser, Dell Lingen, and four men of the carrier's E division, IC1 J. V. Moore, IC3 James Woodside, IC3 B. M. Stanley and ICFN F. B. Dill, began working on the assembly of a new lens, the parts for which had been flown in from Subic Bay.

The men worked an average of 18 hours a day with occasional breaks during flight operations. They cleared off what was left of the old lens and

completely remounted a new assembly. The equipment was realigned and stabilization checks were made. Within a week, the new lens was ready.

While work was being performed on the Fresnel lens, CVW-11 pilots used the manual visual landing system.

Early in March, *Kitty Hawk* departed the Gulf of Tonkin. She was commended by General William C. Westmoreland: "Sixty-one successive days on the line is a record for the Vietnam conflict. My congratulations to all of you."

During this period, *Kitty Hawk's* pilots averaged 48 missions apiece as the carrier chalked up 5,546 arrested landings on her flight deck. The ship engaged in 49 underway replenishments with 7th Fleet support ships.

ATLANTIC FLEET

Intrepid (CVS-11)

The 25-year-old aircraft carrier left the Norfolk Naval Shipyard early in March after a month and a half of minor overhaul work.

A veteran of two Vietnam cruises in the last 21 months, she was headed for sea trials off the Virginia Capes.

Work done on the 42,000-ton flattop included general maintenance repairs and improvements in working and living conditions. Elevators, catapults and arresting gear were torn down, inspected, repaired and rebuilt. Boilers were overhauled, flushed and rebricked. Parts of the flight-deck planking were torn out and new sections installed.

The commanding officer of the *Fighting I*, Captain William J. McVey, has been awarded the Legion of Merit. The citation praised his performance while directing *Intrepid's* combat operations over North Vietnam.

Three platoons of *Intrepid* men completed training at the U.S. Naval Amphibious Base, Little Creek, Va., while the ship was at Portsmouth, in order to join *Intrepid's* landing party.

Each platoon completed classroom and field training in the one week allotted them. Weapons indoctrination covered the M-1 rifle, the Browning automatic rifle, the .45 caliber pistol and the .30 caliber machine gun.

The course of instruction was prepared by Capt. D. M. Dicke, Capt. P. G. Ostrom and SSgt. James T. Bryant of the ship's Marine detachment.

At Norfolk, Vice Admiral Charles T. Booth, ComNavAirLant, presented

awards to 71 *Intrepid* men—bronze stars, commendation medals, letters of commendation, etc. Capt. McVey's Legion of Merit honored his performance during the carrier's operations in the Gulf of Tonkin.

Forrestal (CVA-59)

Indiana University football coach, John Pont, the unanimous choice for college football's Coach of the Year for 1967, recently visited the big carrier.

For one so famous as Pont, the sight of a thousand-foot ship might not ordinarily compare with the sight of the Rose Bowl where 100,000 people saw his team play on New Year's Day, but when Pont crossed the brow of the *Forrestal*, a look of wonderment was on his face.

Pont was given a tour of the ship

An F-4B Phantom of VF-213 (opposite page) drops ordnance on a target in North Vietnam. Below is a view of Kitty Hawk on patrol a short while before she left the Tonkin Gulf.

accompanied by Captain R. B. Baldwin, the carrier's C.O., and Cdr. B. R. Lindsay, ship supply officer.

Essex (CVS-9)

The USS *Essex*, commanded by Captain John A. Harkins, with Carrier Antisubmarine Air Group 60 embarked, is on a four-month training and good will deployment to the Mediterranean and northern Europe.

The veteran ship, which is the flagship of Task Group 83.4 commanded by Rear Admiral Thomas D. Davies, serves as headquarters, mobile air base and logistic support ship for the ASW carrier group.

CVSG-60 consists of VS-39, VS-34, HS-9 and VAW-121. *Trackers*, *Tracers* and *Sea Kings* make up the nearly 40 aircraft of *Essex*' air group.

Ships accompanying the *Essex* include the destroyers, USS *Keppeler* (DD-765), USS *Dixon* (DD-708) and USS *Warrington* (DD-843), and destroyer escorts USS *Lester* (DE-1022), USS *Hartley* (DE-1029), USS *John Willis* (DE-1027) and USS *Courtney*

(DE-1021). The USS *Scorpion* (SSN-589) also participated in transit exercises.

Essex' most recent "Sailor of the Month" is SM3 Salvador Corbo, attached to the communications department. The letter nominating him stressed his "can do" attitude. His resourcefulness was demonstrated when he skillfully fashioned badly needed signal flags out of parts of worn-out or surplus flags of other kinds.

America (CVA-66)

Captain Charles E. Tedholm, the carrier's engineering officer, and SKC Howard C. Mayfield, Jr., materials chief, were presented the third annual Catherine T. McDonald Award for contributing "most to morale, operating efficiency and material readiness."

The award is named for and given to *America* by the ship's sponsor, the wife of former CNO, Admiral David L. McDonald. For the first time since she made the gift, Mrs. McDonald was able to be present for the award ceremony. *America* was deployed to the





The very picture of action, Lt. Robert C. Leslie, bow catapult officer, signals launch of an A-7A from USS America. Below, with CVW-6 aircraft spotted on the catapult, USS America turns into the wind to launch her aircraft during a period of refresher training in the Caribbean.

Med on the two earlier occasions.

"I am glad that Admiral McDonald and I live in the Jacksonville area," Mrs. McDonald said, "so that we can attend this presentation. From the time I christened this ship and the ship and the sea came together, *America* has compiled an enviable record."

The winners are both senior in terms of service. Chief Mayfield completes 20 years of service this month and plans to transfer to the Fleet Reserve.

Captain Tedholm credits his award to the "efforts made and the reputation earned by the six to seven hundred people in my department." *America's* engineering department has won the efficiency E the only time it was eligible to compete for the award.

Just before leaving USS *America*, Lt. David A. Hubbs flew his UH-2A *Seasprite* helicopter from the flight deck for the 700th time to set his record of landings and takeoffs from CVA-66. Just how extensive the record is on a comparative basis is not known, but it is the first for *America*, commissioned January 23, 1965.

Lt. Hubbs compiled his record number of landings since first reporting to *America* with Det 66 of HC-2 soon after the ship's initial shakedown cruise, the last of August 1965. Since that time, Hubbs has made seven cruises aboard *America*, two of them to the Mediterranean.





THREE TICONDEROGA *skippers tour the flight deck of "their" ship. Rear Admiral John P. Weinel, who once commanded Tico, is now ComCardiv Three (center); Tico is his flagship. His chief of staff, another former Tico C.O., Captain Martin G. O'Neill (left), accompanies the admiral as the present skipper, Captain McInnis, acts as guide. Pictures show the waves Tico battled.*

A Veteran on the Line

THE VETERAN ship, USS *Ticonderoga* (CVA-14), the oldest attack carrier assigned to the Seventh Fleet, is now on her fourth tour of combat duty in Vietnamese waters. She is commanded by Captain Norman K. McInnis.

En route to WestPac, *Tico* encountered 35-foot waves and high winds gusting up to 90 miles per hour about 400 miles east of Japan.

Nor was the weather favorable when she reached Vietnam, but in spite of that, *Ticonderoga's* A-4 *Skyhawk* pilots pounded the enemy with tons of bombs, flying as many as 50 sorties a day in their first weeks on Yankee Station.

The pilots are working with the Air Force forward air controllers in South Vietnam. One of the pilots of VA-195, commenting on these controllers, said, "They are doing an outstanding job. They are eager to get us on targets as soon as possible. They say they like to work with the Navy because of our dive-bombing accuracy."



WESTPAC Typhoons

WESTPAC TYPHOONS OCCUR THROUGHOUT THE YEAR, BUT ARE MOST PLENTIFUL DURING THE SUMMER MONTHS. AN AVERAGE OF TWENTY STORMS ARE OBSERVED EACH YEAR, WITH AT LEAST FOUR OCCURRING IN AUGUST, AND THREE IN SEPTEMBER.



THE SPAWNING REGION OF WESTPAC TYPHOONS COVERS AN AREA APPROXIMATELY SIX MILLION SQUARE MILES, RANGING FROM THE EQUATOR TO 25°N AND 110°E TO 180°E. ABOUT 35% OF THE TYPHOONS ORIGINATE WITHIN FIVE HUNDRED MILES OF GUAM.



THERE ARE NO TWO TYPHOONS THAT ARE EXACTLY ALIKE, AS THERE IS CONSIDERABLE VARIATION IN TRACK, INTENSITY, AND SIZE. SOME MAY EXTEND OVER 100,000 SQUARE MILES, WHILE OTHERS COVER A FRACTION OF THAT AREA.



WHEN A TYPHOON DEVELOPS, IT GENERALLY MOVES IN A WESTWARD DIRECTION AT A SPEED OF 8 TO 12 KNOTS. USUALLY IN THE VICINITY OF THE PHILIPPINES, THE STORM WILL CURVE NORTHWARD, AND WILL GRADUALLY PICK UP FORWARD SPEED.



THE EYE IS THE MOST TYPICAL FEATURE OF A TYPHOON, VARYING IN SHAPE FROM ROUND TO OVAL. CHARACTERIZED BY VFR CONDITIONS OF CLEARING SKIES AND LIGHT WINDS, THEY AVERAGE ABOUT 14 MILES IN DIAMETER. HOWEVER, IN TYPHOON "CARMEN" OF AUGUST 1960, THE EYE WAS OBSERVED TO BE 200 MILES IN DIAMETER BY A CPS-9 WEATHER RADAR ON OKINAWA.

Continued on Page 39



THE HIGHEST WIND EVER RECORDED OFFICIALLY AT A LAND STATION IN WESTPAC WAS A GUST OF 207 MPH. THIS WAS RECORDED AT THE JAPANESE WEATHER STATION ATOP FAMED MT. FUJI DURING TYPHOON IDA IN SEPTEMBER 1966.

anniversary of the Naval Schools of Photography.

The photographic school owes its origin to a particular circumstance. The newly established flight school at NAS MIAMI began supplementing lengthy progress reports with photographs taken by Ship's Cook Third Class Walter L. Richardson as part of his hobby. The photographs proved so useful that Richardson was commissioned an ensign and put in charge of a new school for photographic instruction. This was in April 1918.

The school was closed in November 1918 at the end of WW I, but was reopened in Washington, D.C., in 1920.

In 1923, the school moved to NAS PENSACOLA as part of the NAS photo lab and in 1943 it became a separate unit of the Naval Air Technical Training Command.

It remained the basic school of photography until 1944 when the Motion Picture and Camera Repair "C" Schools were moved from Wash-



PHOTOGRAPHERS GO TO SCHOOL HERE

ington, D.C. Then the command was officially commissioned a Naval Air Technical Training Unit.

The Photographic Reconnaissance School moved from NAAS WHITING FIELD in 1947 to become a part of the Naval Schools of Photography. The Photographer's Mate "B" School was added in 1950.

Today the school trains not only Navy and Marine Corps photographers but also members of the Army, Air Force, Coast Guard, Allied Forces and civil service.

Information on the Roundup is available by writing to: Secretary-Treasurer, Seventh Annual Chief Photographer's Mate Roundup, PHCS Kenneth E. Bumpus, NATTU PH(B) Ground, Box 56, Naval Air Station, Pensacola, Florida 32508.

Record Claimed in Intruder 1,000th Hour Flown at NAS Oceana

Two members of VA-65, NAS OCEANA, claimed a record—a "first" in A-6A history—when they completed 1,000 hours of flight time simultaneously in the *Intruder*. Lt. Roland J. Zlatoper was the pilot and Lt. Cecil C. Anderson was the bombardier/navigator during the flight.

In addition, Lts. Zlatoper and Anderson achieved outstanding combat records while the squadron was deployed in Southeast Asia. Between them they received two Distinguished

Flying Crosses, 20 Air Medals and six Navy Commendation Medals, flying more than 200 combat missions totaling over 400 flight hours.

PHC's to Hold '68 Roundup Will Mark Photo School's 50th Year

The seventh annual Chief Photographer's Mate Roundup will be held June 22 at the Naval Air Technical Training Unit, NAS PENSACOLA, Fla. Navy and Marine Corps photographers, active and retired, E-7 and above, are invited to attend the Roundup which this year will celebrate the 50th

Editor's Corner

THE BIG PICTURE. The announcement on the opposite page concerning the forthcoming PHC's Roundup in June contains a reference to W. L. Richardson, a cook whose hobby earned him a commission. LCdr. Jack Arthur, USNR(Ret.), provides interesting details in his book, "Contact," reviewed in *Naval Aviation News*, February issue, p. 3.

Walter "Dick" Richardson enlisted as a ship's cook fourth class in November 1911. He shot pictures aboard the USS *Birmingham* at Vera Cruz during the Mexican crisis in 1914. He later became a chief machinist's mate and, in January 1918, was commissioned an ensign and enrolled in the Naval Reserve Flying Corps. Designated Naval Aviator #582 in April of that year, he became the first head of what is now the Naval Schools of Photography.

Dick Richardson's hobby and his love of Naval Aviation made a great combination, a combination that nearly cost him his life. As a photographer, he was riding in the tail section of the USS *Shenandoah* in 1925 when the airship was torn apart, the aft section plummeting to the ground.

Lt. Richardson left Naval Aviation in 1922 but continued to work for the Navy as a civilian. During his lifetime, this man, who had been taking pictures almost since birth, established photographic schools at various naval air stations and organized the photographic section in BUAER. He invented the first hand-held oblique camera for aerial photography and earned the title "Daddy of all Naval Aerial Photographers." At the time of his death in 1945, he was a Senior Scientist, Photographic Inspector, in BUAER.

According to his sister, Mrs. A. G. Auren, "He was always taking pictures with a little #600 Brownie camera, and throughout his life worked for Naval Aviation with great enthusiasm."

Consumer Report. DC1 Fred "Pop" Swayze retired in March, completing a military career spanning four wars. The spry, 69-year-old Swayze was piped over the side from VF-21 at NAS MIRAMAR following a hectic but satisfying week during which he became the oldest military man to get his first airplane ride in a jet fighter.



DC1 SWAYZE, upon his retirement, was "piped over" the side of one of VF-21's Phantoms.

"It was great," he told his pilot of the F-4 *Phantom*. "When do I go up again?" Men in the squadron fashioned special wings for him, combining a DC's hammers with the aviator's wings.

In his honor, an official "Pop Swayze Night" was held at the PO club.

Joining the Navy originally in 1917, Pop got out after the war but then enlisted again for World War II. After returning to civilian life a second time, he signed up once more for the Korean conflict. Recently he requested duty in Vietnam. "I've served in every American war in this century," he explained, "and I don't want to miss this one."

But Pop Swayze had done his share. His retirement climaxed 23 years active duty and five years in the Fleet Reserve. He had served on ten ships, two squadrons and numerous stations. "If I had it to do over again," he said, "I'd have stayed in instead of getting out after each war."

SAME NAME. When VS-33's commanding officer talks about a Johnson being aboard a carrier off the coast of southern California, the public affairs officer can never be sure whether it's the President of the United States or one of the squadron officers: in February, the fourth one named Johnson reported aboard the North Island unit.

Which reminds us of the three Buc brothers. All are Lieutenant Commanders and all are Naval Aviators; William J. flies out of NAF China Lake while Gerald G. and Robert L. are flight instructors at Chase Field.



IN THIS 1915 photo, Richardson, with his Graflex-type camera, prepares to go on an aerial photo mission. Pilot of AH-14 is Lt. E. F. Johnson, Naval Aviator #25, who is still living.

LETTERS

Remember 'Stripes'

SIRS: As Navy representative on the staff of the *Stars and Stripes*, European edition, I'm writing to request your assistance in getting the word to carriers deploying to the Sixth Fleet in the Mediterranean that "Stripes" is most interested in hearing from them.

Any time a ship as large as a carrier joins the Sixth Fleet, it's news—but it seems this fact has escaped the PAO's of several of our East Coast carriers. We can give carriers plenty of publicity if they will only send us releases telling what they will be doing and where they will be visiting.

In fact, we can assist these ships in their public affairs efforts if they will provide us a complete press kit even before they join the Sixth Fleet. A good time to send us a press kit would be the day they deploy.

We are also in need of good photos of Naval Aviation activities, and I would like to emphasize this to carrier PAO's. We need shots of flight operations, air-to-air refueling, fixed-wing and helicopter recoveries, men working on jets, etc.

JOC BILL NEAL, USN
Navy Representative
The Stars and Stripes
APO New York 09175

Black Widow

SIRS: I am a member of the American Aviation Historical Society and as their specialist on the Northrop P-61 *Black Widow*, including USN/USMC F2T-1, I am researching its development and operational history.

If any of your readers who flew or have information on the F2T-1 (P-61B) would contact me, I would appreciate it very much.

GARRY R. PAPE
AAHS P-61 Specialist
5748 Intercceptor Street
Los Angeles, Calif. 90045

NANews Takes a Bow

SIRS: Your magazine (to which I have been subscribing for eight years) remains one of the most interesting and informative aviation periodicals and, for the enthusiast, the photo quality and coverage is unsurpassed. Keep up with the historical articles. They're excellent!

DAVID MORRIS
14 Holmwood Avenue
Shenfield, Essex
England

VA-215 Insignia

SIRS: I am seeking an explanation of the badge of Attack Squadron 215 for accurate description in my history of naval insignia, *Eagle at Sea, Emblems of the U. S. Navy*. The badge of VA-215 was a green and white circular checkerboard surrounding a winged device, the wings flanking what appears to be a plumed helmet. Any exact description of this badge will be gratefully appreciated. The *Barn Owls* were decommissioned at Alameda in 1967.

THOMAS F. GATES
25 Sunset Drive
Kensington, Calif. 94707



MCAF NEW RIVER marked the end of an era in March when the last UH-34's departed Marine Air Group 26 after 11 years of continuous service. The splendid record the Sea Horses compiled while serving with MAG-26 squadrons included astronaut and space vehicle recoveries, hurricane disaster operations, and action during the Cuban crisis and the revolt in the Dominican Republic. Above, a formation flies over the facility during a change-of-command ceremony.

VA-215 is Recommissioned Fifth Squadron to Fly the Corsair II

VA-215 was recommissioned March 1 at NAS LEMOORE. It is the fifth squadron to fly the A-7A *Corsair II*, newest of the Navy jets.

Originally an A-1 squadron, VA-215 was first commissioned in June 1955 at NAS MOFFETT FIELD; it was decommissioned in August 1967 at NAS ALAMEDA.

Commander Georges E. LeBlanc is the newly recommissioned squadron's C.O.; Commander Donald L. McConnell is X.O.

Milestone CH-53A Delivered HMH-461 Gets 100th Sea Stallion

In February, Sikorsky Aircraft, Stratford, Conn., delivered its 100th *Sea Stallion* to Marine Heavy Helicopter Squadron 461, MCAS NEW RIVER, N.C.

The Naval Air Systems Command has signed a new order for additional CH-53A's to be delivered in 1969-1970.

Norway Orders P-3 Orions Will Replace the HU-16B Albatross

The Norwegian Department of Defense recently announced it was purchasing P-3 *Orion* aircraft for its ASW and maritime patrol forces.

The Royal Norwegian Air Force will replace its present HU-16B amphibians with the *Orions*.

Norway joins the Royal New Zealand Air Force and the Royal Australian Air Force in the use of the P-3, the U.S. Navy's principal land-based patrol aircraft.

Test Pilot School Annual Meeting

The 20th annual reunion and symposium of the Naval Test Pilot School, NATC PATUXENT RIVER, Md., will be held May 25 at the Cedar Point Officers Club.

Admiral Thomas H. Moorer, CNO, will be the guest speaker at the 1215 luncheon.

Scheduled presentations for the morning are: TPS, Present and Future; Flight Testing the SST/C-4 Flight Simulator; and Heads-Up Displays.

Human Factors Relating to Performance Evaluation and *Huey Cobra* in Combat will be featured at the afternoon session.

Back Cover

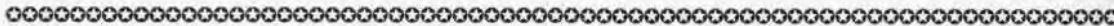
In the picture on the back cover of this issue are the senior enlisted men of each of the four U.S. Military Services: Left to right: Sergeant Major of the Army William O. Wooldridge; Sergeant Major of the Marine Corps Herbert J. Sweet; Master Chief Petty Officer of the Navy D. D. Black; Chief Master Sergeant of the Air Force Paul W. Airey.



HS-5, led by Commander Edward A. Skube, is homeported at NAS Quonset Point, R. I. In 1967, the squadron received the Battle E, the Arnold J. Isbell Trophy and the CNO Aviation Safety Award. HS-5 flew a record 1,800.2 hours in SH-3A's last August.

NAVAL AVIATION

NEWS



FORCES FOR FREEDOM

ARMED FORCES DAY

MAY 18, 1968