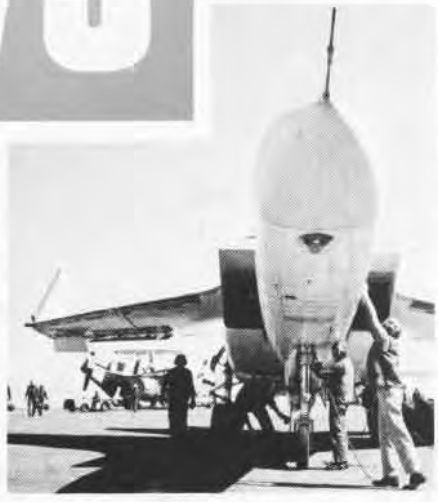
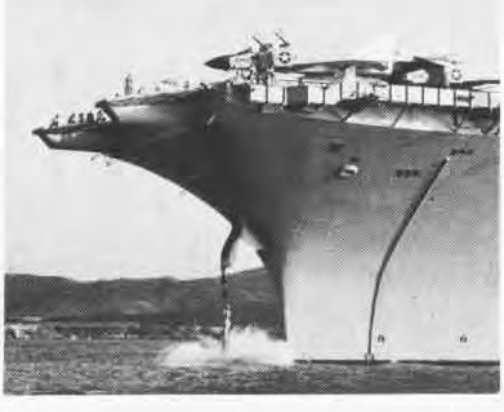
NAVAL AVIATION NEWS





AUGUST 1971

NAVAL AVIATION NEWS

FIFTY-SECOND YEAR OF PUBLICATION

FEATURES

THE STAFF

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EDITOR'S CORNER

There has been and continues to be considerable concern these days about morale, retention rates and esprit de corps . . . and no doubt with good reason. Trained personnel are leaving the armed forces at a higher rate than they have previously, influenced, perhaps, by a public attitude which is considerably more critical than it has been in the past.

Still, there is continuing evidence that within the Naval Aviation community enthusiasm and professional pride continue at their traditional high level. One of the most evident expressions of this enthusiasm appears in that ubiquitous location for expressing one's opinions — the automobile bumper. Just take note of the number of Fly Navy decals encountered while commuting to and from NAS Whatsit. In some areas, they seem almost as prevalent as along the 05 corridors in the Pentagon.

Naval Aviation personnel, having naturally a somewhat more enterprising turn of mind, have always sought new and more unique ways of showing pride in their organization. One of the more dramatic methods has been to paint the C.O.'s car to match the paint scheme of the squadron's aircraft. While this tradition dates back at least to the 1930's, innovations still appear. The most recent to come to our attention being a VW used by VT-27's skipper which not only carries the squadron's colors, markings and appropriate maintenance labeling, but also sports a tail hook.

Not to be outdone, an enterprising officer from neighboring VT-29 found his own way to display his keenness for his profession. Inspired by the example of France at the America's Cup trials, Lt. Art Babine has sewn a huge set of NFO wings on the spinnaker of his sailboat. Perhaps a more visible selection of location than that of a commanding officer we know who keeps a four-foot set of Naval Aviator wings above his conjugal bed. Nevertheless, all of us involved in maintaining seapower through Naval Aviation have our own ways of showing our dedication and pride. Whether bumper stickers or mementos hung on the den wall, Naval Aviation personnel proudly exhibit their association with the most effective seaborne aerial force in existence, in their own meaningful ways.

NAVAL AVIATION NEWS

1911 1971

Change of Command for ComNavAirPac

NAS NORTH ISLAND, Calif. – Vice Admiral William F. Bringle was relieved as Commander, Naval Air Forces Pacific Fleet in May during ceremonies aboard USS *Constellation* (CVA-64). He was relieved by Vice Admiral Thomas J. Walker, former Commander of the Naval Air Systems Command. VAdm. Bringle will assume command of U.S. Naval Forces, Europe with headquarters in London, England. He held his former position from March of last year, when he was assigned to head the San Diego-based staff after commanding the 7th Fleet.

CarDiv-9 Decommissioned

NAS NORTH ISLAND, Calif. – Carrier Division Nine was decommissioned July 1 – a result of the Navy's vertical reduction of fleet staffs which began earlier this year.

The seven-year-old staff was commissioned in January 1964 by Rear Admiral William S. Guest aboard NAS North Island.

Approximately 50 percent of the 21 officers and 46 enlisted personnel formerly on the staff were assigned to other units in the San Diego area.

When deployed to WestPac, the staff embarked in the carriers *Constellation, Hancock* or *Ranger*.

Harpoon Contractor Named

WASHINGTON, D.C. – Secretary of the Navy John H. Chafee recently announced that the McDonnell-Douglas Corporation has been selected as prime contractor for development of the Navy's new all-weather, anti-ship missile system, *Harpoon*. The initial contract is for approximately $60 million for development and demonstration of engineering models during the next two years.

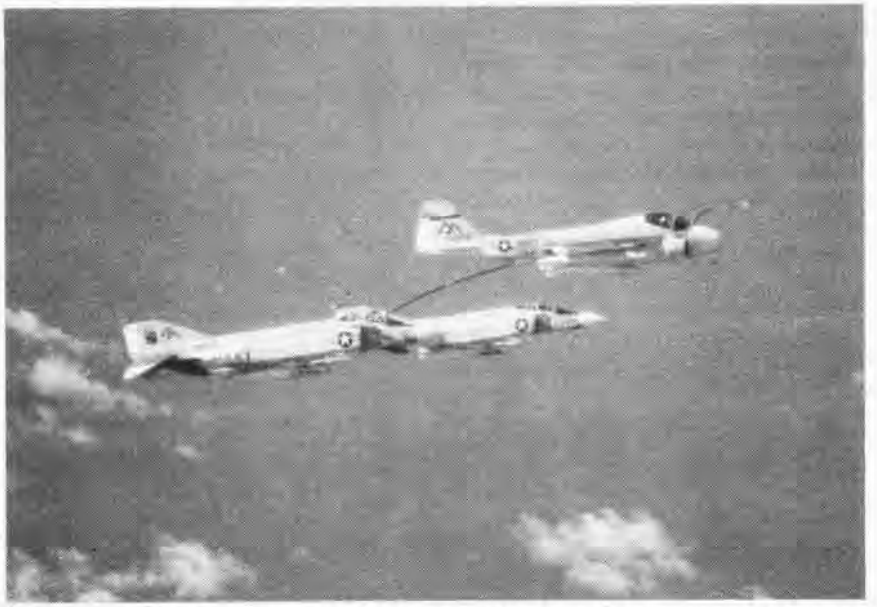
Capable of being launched either from ships or aircraft, the new missile will be designed for attacking enemy shipping from extended stand-off ranges.

The *Harpoon* program will be managed by the Naval Air Systems Command with major support from the Naval Ordnance Systems Command. Work will be performed at St. Louis, Mo., and Dallas, Texas.

Mack Relieves Weisner

YOKOSUKA, Japan – On June 18, the U.S. Seventh Fleet welcomed a new commander when Vice Admiral William P. Mack relieved Vice Admiral Maurice F. Weisner in ceremonies aboard USS *Midway*. Adm. Mack took command after serving as Deputy Assistant Secretary of Defense for Manpower and Reserve Affairs. Adm. Weisner left for Washington, D.C., where he will assume the post of Deputy Chief of Naval Operations (Air Warfare).

A number of naval and foreign dignitaries and diplomats boarded *Midway* for the ceremonies which marked the 7th Fleet's 26th command change.



High above the Mediterranean, a KA-6D refuels two Phantoms. Navy's newest aerial gas station is deployed with VA-85 aboard Forrestal and VA-176 aboard Roosevelt. The tanker Intruder, scheduled to replace the KA-3 Skywarrior, retains all the flight characteristics of the A-6 and can transfer about 350 gallons per minute at speeds ranging from 220 to 320 knots.

HC-4 LAMPS Det. Returns From Sea Trials

NAS LAKEHURST, N.J. – The first HC-4 Light Airborne Multi-Purpose System (LAMPS) detachment to operate with the Atlantic Fleet recently returned to this air station after a three-week period of at-sea trials aboard USS *Belknap* (DLG-26).

Det. 26 was tasked with proving the LAMPS theory of ASW tactics. The 19-man, 2-plane detachment, led by OinC Lt. Dave Sage, did just that. Flying the HH-2D both day and night, Det. 26 paved the way for future LAMPS deployment. Assisting detachment personnel were engineers from NADC Warminster, Pa., a technical representative from Kaman and representatives from several electronic companies.

Introduced to the fleet last fall, the Det. 26 twin-engine *Seasprites* were equipped with ASW gear. The ASW configuration will expand the localization, classification and destruction capabilities of the parent ship.

Hancock Wins Trophy

PEARL HARBOR, Hawaii – USS *Hancock* (CVA-19) has been awarded the Arleigh Burke Fleet Trophy for battle efficiency and operational readiness.

The award is given annually to a ship in each fleet which shows the greatest improvement in battle efficiency and readiness.

Vice Admiral D. C. Richardson, Deputy Commander of the Pacific Fleet, presented the award to Captain T. L. Johnson, *Hancock*'s commanding officer, in ceremonies held on board the ship.

Hancock won the Battle E earlier this year. She was selected for the Burke award by CinCPacFlt. The award is named after Admiral Arleigh A. Burke, former CNO.

Latest Tracker Arrives

NATC PATUXENT RIVER, Md. – The YS-2G, the latest and last of the S-2 *Tracker* series, has arrived here for modified board of inspection and survey acceptance trials.

This Skyraider, outnumbered by the sleek jets on the flight line, was the next to last A-1E in the Navy inventory. Used as a test vehicle at the Naval Aerospace Medical Research Laboratory, Pensacola, Fla., it is now on display at the Marine Corps Museum. The last A-1E in the Navy inventory is scheduled to leave Patuxent River, Md., for storage at Davis-Monthan AFB.

The YS-2G's will lose their Y prototype designation before joining the fleet later this year. The new *Trackers* will replace the S-2E's currently performing ASW missions from CVS's. Eventually, they will be replaced by the S-3A.

VX-1, NAS Key West, Fla., will conduct the operational evaluation following completion of the BIS trials.

According to Commander Vaughn Wilson, program manager for the YS-2G, the external configuration of the aircraft is the same. Internal changes include the addition of a directional low frequency analyzer and ranging system to an improved avionics system.

Orientation for a Prince

ROTA, Spain – The oldest aviator in Spain, a Spanish Civil War hero, was a recent guest of the U.S. Air Force and Navy aboard a C-141 *Starlifter* training and orientation flight.

Don Alfonso de Orleans y Borbon, an 84-year-old Spanish prince, was briefed by Captain W. R. McQuilkin, Commander, Naval Activities Spain, who accompanied him on the flight.

A frequent visitor to the Rota Naval Base, the prince was the first pilot to land an aircraft on the Rota runway after it was constructed in 1957. Still active in aviation circles, he pilots an aircraft three times a week.

New Titles

As part of the reorganization of OpNav, three Deputy Chiefs of Naval Operations acquired new titles July 15.

In an effort to better reflect the Deputies' assigned tasks and functions, DCNO (Air) became DCNO (Air Warfare), DCNO (Submarines) is now DCNO (Submarine Warfare), and DCNO (Surface) is DCNO (Surface Warfare).

Medical Papers Presented

PENSACOLA, Fla. – The Naval Aerospace Medical Center was represented at the NATO meeting of the Advisory Group for Aerospace Research and Development in Portugal at the end of June, when the papers of three of the Center's physicians were presented at the meeting.

Captain Marvin D. Courtney, commanding officer of the Naval Aerospace Medical Institute, discussed in his paper the Navy's Special Board of Flight Surgeons which convenes almost every week to recommend whether or not referred personnel are physically qualified and aeronautically adapted for actual control of aircraft. During the period June 1957 to December 1970, 720 cases were evaluated. Out of 200 different diagnoses, defects of the cardiovascular system outnumbered any other condition.

Captain Channing L. Ewing, Officer in Charge of the Naval Aerospace Medical Research Laboratory Detachment at New Orleans, and Dr. Daniel J. Thomas, head of the Human Research Branch at the detachment, discussed their research work which they hope will ultimately reduce fatalities in aircraft accidents. Both presented papers on various aspects of human response to impact acceleration.

Marines Use Radar Trainer

MCAS IWAKUNI, Japan – Pilots and RIO's for F-4J's and F-4B's now have a radar training device which simulates actual air-to-air combat situations and eliminates the need for an actual training flight.

Known as the 15C4-E Radarscope Interpretation Trainer, the device, built by the Aerospace Division of Goodyear Tire and Rubber Company is one of four trainers in use by VMFA's 232 and 115.

According to GySgt. B. C. Rhoady of the special devices department which operates the trainer, it acts as a refresher course for operations and tactics learned in flight school and represents a self-teaching type of instruction for the squadrons. An experienced pilot or RIO in the pilot seat coaches the RIO trainee on how to cope with many different flight situations.

SSgt. W. J. Kuha, also of special devices, explains that the control console is equipped with the basic flight instrument group from which the settings for all phases of a mission are made. The pilot has the control and radar sticks, while the RIO has only the radar stick. The pilot can override the RIO's radar stick and show him exactly how he should operate it.

Flight Officer Award

WASHINGTON, D.C. – The Marine Corps has announced plans to present a Marine Flight Officer of the Year Award to that flight officer who has made the most outstanding contribution to Marine Aviation.

Grumman Aerospace Corporation donated the trophy, the Robert Guy Robinson Award, named in honor of 1st. Lt. Robert G. Robinson, a WW I Medal of Honor recipient.

Full information on the award is contained in Marine Corps Order 1650.26.

FAA Procedures Announced

WASHINGTON, D.C. – Tests conducted by the Federal Aviation Administration with heavy jet aircraft such as the Boeing 747 and C-5A have revealed that the severe wake turbulence generated by these aircraft requires application of special control procedures in the terminal area. As a result, FAA has developed procedures and separation minima for use by FAA traffic control facilities serving terminal areas where heavy jet aircraft operate. The increasing use of naval airfields by heavy jets requires application of these special FAA procedures at naval air traffic control facilities.

CNO, by OpNavNote 3722 of April 20, 1971, has promulgated FAA Order 7110.29, *Procedures for Control of Aircraft Following Heavy Jet Aircraft*, and directed commanding officers of naval aviation shore activities to apply the procedures at air traffic control facilities under their command.

FAA Order 7110.29 supplements arrival and departure procedures and separation minima contained in the FAA Handbook 7110.8B, *Terminal Air Traffic Control*.

One Millionth Student Graduates at NATTC

NAS MEMPHIS, Tenn. – Marine LCpl. Richard D. Rice is one in a million – the millionth student to graduate from the Naval Air Technical Training Command.

Rice recently graduated from the Aviation Ordnanceman School at NATTC Jacksonville, Fla., as an academic honorman for the 18-member, 12-week course. The 18-year-old Marine flew from NATTC Jacksonville to NAS Memphis to receive a plaque from Rear Admiral V. G. Lambert, CNATechTra.

Master Chief Hugh T. Vick, senior enlisted advisor to CNATechTra, talks with LCpl. Rice.

Jacksonville is one of six centers which make up the Naval Air Technical Training Command, responsible for all Navy and Marine Corps enlisted aviation training. Training facilities housing 101 schools are also located at Memphis, Lakehurst, N.J., Glynco, Ga., Denver, Colo., and Pensacola.

A Sea Knight picks up and transfers a Mojave at Camp Pendleton. The pickup was made to provide tactical aircraft recovery training for Santa Ana-based helicopter pilots. The unique training program was initiated by members of HMH-363, MCAS Santa Ana, Calif.

GRAMPAW PETTIBONE

Box Canyon

Two junior birdmen, diverted ignominiously to an overseas naval air station for duty while trained for and en route to a jet carrier squadron, were out one day along with an airman plane captain looking for some excitement in a C-45 *Navigator*. The aircraft, considerably older than either of the pilots, was still doing its duty as a general utility and proficiency plane whenever called upon.

After performing some high work (stalls, turns, simulated engine failures, etc.) and completing several touch and go landings, they decided to go sightseeing in the mountains and fly over a high-altitude resort city.

Both pilots had been there several times before and felt sure they knew the way. Entering a mountain pass at about the 3,000-foot elevation, they noted unfamiliar terrain and what began to appear to be a box canyon. Instead of reversing course and departing the area, they applied climb power and forged ahead. As the airspeed began to drop, they added full power but the terrain still seemed to be climbing to meet them. The airspeed continued

to drop and soon they noted a zero rate of climb. At this point, the pilots felt what they thought was a "vicious downdraft" and the venerable *Bug Smasher* seemed to "fall out of the sky." When a crash seemed inevitable, shoulder harnesses were tightened and full flaps lowered. They hit the trees at the bottom of a ravine at about 60 knots. The *Beech* tumbled over onto its back, and smoke and flames filled the cockpit.

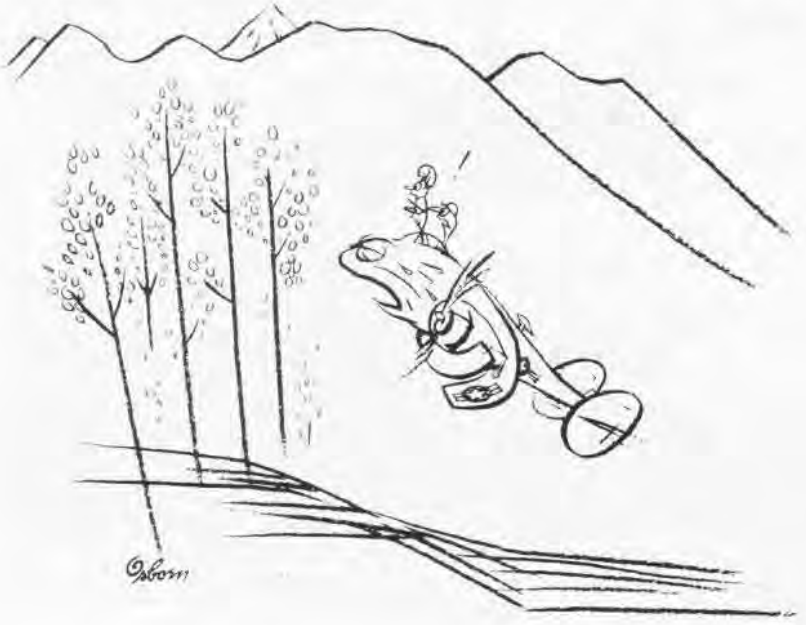
The pilot felt something under him which turned out to be the airman who had not been strapped in in the back. All three flyers were conscious and began wildly fumbling their way out through the smoke and fire to the cabin door. Emerging, they quickly retreated some 30 yards and watched as the wreck exploded into a final ball of fire.

Grampaw Pettibone says:

Great thunderin' herds of buffalo! Why in tarnation must all our junior aviators be destined to make the same mistakes as their elders, all over again? Don't they ever learn any lessons from the older generation? This is the third box canyon loss this year. One took four lives.

This is one for the books. The sheer luck involved in such a successful ditching, escape and uneventful recovery is staggering. Their nomex flight suits undoubtedly saved them from disabling burns. Additional protective equipment which would have been worn in most other type aircraft would probably have prevented other injuries and been most helpful.

These guys had no business being in this mountainous jungle area in the first place. It had been designated a "special area" and required authorization to fly over it. The spot where the plane crashed was completely inaccessible even by helicopter, and the wreckage was impossible to see from the air. The crew almost had to walk all the way out but were spotted by air late that evening as they were being nursed by friendly local nationals who had helped them to their village.



Too Many Cooks

One day last winter, two Marine first lieutenants launched at 0750 in an F-4J as the number two plane in a ground controlled, intercept training

ILLUSTRATED BY Osborn

flight. After the training flight was completed, fuel remained for a GCA practice approach at a nearby air force base and a tail chase on the way home. The tail chase terminated when the wingman lost sight of his leader. Almost immediately the first lieutenant realized he was unable to retard the throttles below 95 percent rpm.

After cycling the throttles in and out of the afterburner detent several times and still not being able to retard them, he notified his flight leader and declared an emergency with the tower and base radio.

On the way back to the Marine Corps air station, the pilot and his NFO went over the NATOPS checklists carefully for "runaway engine" and "single engine landing" procedures. They discussed with their flight leader various ways to handle the emergency and, when they arrived overhead, they had already extended the speed brakes and ram air turbine, dropped ½ flaps and secured the port engine. They planned to make a spiraling approach using G forces to slow the aircraft and to secure the starboard engine on touchdown. They would use the drag chute after touchdown and drop the hook to engage the second arresting gear.

Meanwhile the squadron operations officer and the landing signal officer were informed of the emergency by the operations duty officer. They tried unsuccessfully to reach the pilot of the ailing *Phantom II* by radio from the hangar; therefore, they proceeded by vehicle to the approach end of the duty runway where eventually they were able to communicate with the *Phantom* on the tower frequency. At this time a lot of discussion began about just exactly what to do. Items such as shutting down the engines, ½ flaps vs. full flaps, approach end engagement vs. mid-field, deployment of the chute, etc., were rehashed. On advice of the LSO, the flaps were put to full down and the landing gear was lowered during the spiral descent.

The lieutenant started toward the initial point, making S turns to keep the airspeed down. At about one mile, the *Phantom* was down to 1,000 feet altitude, but the pilot couldn't get the airspeed below 200 knots. They circled left at 800 feet, keeping a tight turn, and tried again. He was still unable to get the plane down and to stay below 200 knots, so he made another 360° port turn. The LSO and operations officer then advised him that he should drop the hook for an approach and engagement, and that they would call for the drag chute prior to touchdown.

The third approach was lined up good, although still high and fast. The LSO called for the drag chute at one mile from the runway, which initially dropped the airspeed to 180 knots. The craft was still airborne over the first arresting gear and touched down briefly about 3,000 feet down the runway. Immediately, the pilot secured the master switch as briefed, but someone transmitted on the radio, "take it around – you missed the wire." Someone else yelled "shut it down." The pilot tried to keep the *Phantom* on the ground but soon realized that he couldn't. The drag chute then collapsed and the starboard engine still had not begun to unwind. He turned the master switch back on and tried to light the afterburner. The nose was rotated for takeoff. After gaining 30 to 40 feet of altitude, the F-4 settled to the runway but was pulled off again with a higher nose attitude. It still wouldn't stay in the air, and the pilot, believing that the afterburner had not lit, tried to place it on and keep it on the deck without success.

As they crossed the center of the field, the NFO asked the pilot about the possibility of ejecting, to which he agreed. As the NFO ejected, the pilot made one last attempt to get it on the deck, and then he punched out. Both crew members landed safely on the runway as the doomed *Phantom* crashed and slid down the parallel taxiway, coming to rest in a ditch.

Grampaw Pettibone says:

Great gallopin' ghosts! Let's convene the accident board 'n make the decisions by committee. That way nobody can be blamed. Everyone involved here made a few discoveries that day.

NATOPS did not cover proper procedures in case of a stuck throttle. The pilot never did check to see if he could possibly move either throttle independently of the other.

The "accident board" in the ground just ended up confusing the issue by planning to set up an approach end arrestment for the F-4 contrary to the flight leader's and pilot's agreed and briefed procedure. Either might have worked if executed correctly. As it was, after debating the pros and cons of each procedure over the radio, the first lieutenant was so confused it's a wonder he could follow directions at all. Possible action in case of a missed arresting gear was not discussed, and the fact that the engine doesn't quit immediately when the master switch is actuated wasn't mentioned either. Just goes to show you that even the better than average jock can be led down the primrose path.

Photos by JOC J. J. Gravat

A CH-53A Sea Stallion lifts the Mk 105 magnetic sweep to an LPD anchored off the South Carolina coast for at-sea tests.

A new squadron - a new mission

AIRBORNE MINE SWEEPING

By JOC Dick Benjamin
JOC J. J. Gravat

Mine sweeping has gone airborne. Although U.S. mine countermeasure (MCM) experiments with helicopters date back to 1952, Naval Aviation officially got into the business April 1 when Helicopter Mine Countermeasure Squadron Twelve (HM-12) was commissioned at NAS Norfolk, Virginia.

HM-12, under the administrative control of Commander Naval Air Force, Atlantic Fleet, is assigned operationally to Commander Mine Warfare Force, in Charleston, S.C. The squadron will function in support of MineLant's mission of clearing enemy mines from amphibious objective areas, U.S. ports and harbors, and strategic sea lanes.

Secretary of Defense Melvin Laird previously announced that 15 mine sweepers would be retired by FY 72. This announcement was not meant to indicate there would be a de-emphasis of mine warfare. Instead, the action was partly a result of fiscal restraints, with the loss being more than offset with the introduction of helicopters into MCM.

The big push from research and development to reality for airborne MCM, came from Chief of Naval Operations Admiral Elmo R. Zumwalt, Jr.

During his first 60 days in office, Adm. Zumwalt looked at the overall naval structure with an eye toward a more modern and cost effective Navy. One of the systems he decided should be put into immediate operation was airborne mine sweeping. He was convinced that changing from a mine force structured solely on ships to one structured on a proper mix of ships and helos would produce an effective mine force that would fill the bill in both areas.

HM-12 was staffed by combining all present airborne MCM billets with billets transferred from the retired mine sweepers. With less fuel to purchase, fewer crew members assigned and no expensive ship upkeep and overhaul, an annual saving of $22 million a year can be realized with the mine sweeper/helo combination.

In his speech at the commissioning of HM-12, Rear Admiral James Dare, CoMineWarFor, likened aerial mine sweeping to an incursion into an enemy area saying, "The effort to sweep a mine field is almost exactly equivalent to a raid into enemy held territory.

"The enemy is invisible, tricky, and dangerous. It is, therefore, of great advantage to have freedom of movement and the greatest invulnerability to the dangers.

"Comparing the airborne MCM team to the ocean mine sweeper, which we still employ, the number of men per sweep is reduced sixteen-fold. The sweep is tripled and the vehicle which does the job can fly freely over the hazards."

At present, HM-12's arsenal consists of nine CH-53A *Sea Stallions* on

Flight deck crewmen aboard USS Raleigh hoist the Mk 105 sweep onto a cradle for preflight. When in the water, the 105's hydrofoils are lowered for greater speed.

loan from the Marine Corps. Plans call for six more of the Sikorsky twin-turbine cargo helos to be borrowed in the near future to bring the complement to 15. These helos will be returned to the Marines when the new Sikorsky RH-53D mine-sweeping helicopters are received to replace them. Present plans call for 74 officers and 372 enlisted men to man, maintain, operate and administer the 21-helicopter squadron.

Sea Stallions, which have six-man crews, were chosen for the mine-countermeasure role because of their rugged construction, powerful engines and existing secondary mine-sweeping capability. Shortly after the H-53 was introduced into the Marine Corps in 1965, its towing capability was recognized as useful in mine-countermeasure operations. All but the first 34 of the *Sea Stallions* were configured for the secondary MCM capability. This was primarily to enable the Marines to clear mines from an amphibious objective area on an emergency mission; however, the Corps has not yet used the capability.

The RH-53D's will have newer, more powerful engines for greater lift and safety. They will also be fitted with Doppler radar for all-weather sweeping capabilities.

HM-12 pilots, aircrews and maintenance personnel are being trained in the *Sea Stallions* by the Marine Corps at MCAS Santa Ana, Calif., and MCAS New River, N.C. It is expected that all mine-countermeasure training will eventually be done within the squadron, once enough qualified personnel are assigned.

This self-training can be accomplished because the squadron's concept of operation is by mobile detachments.

HM-12 headquarters will remain in the U.S. but detachments, with all the necessary mine-sweeping equipment, will be capable of operating from ships and shore bases throughout the world.

If a quick reaction force is needed, the MCM helos can be loaded into a large cargo plane with a minimum of disassembly and flown wherever they are needed. Support equipment and personnel can also be deployed rapidly in transport aircraft to give the detachment self-support capabilities. This method can put an airborne MCM force on the scene days or weeks before a mine sweeper can arrive, providing even more cost effectiveness.

Training in moored and acoustic mine-sweeping operations for squadron personnel initially took place at the Naval Ship Research and Development Laboratory in Panama City, Fla., and is now being done at the squadron headquarters by NSRDL personnel. Training for magnetic mine sweeping is being provided by the ETO Corporation, manufacturer of the latest magnetic equipment in use today.

The *Sea Stallion* is large enough to carry moored and acoustic sweeping equipment within the aircraft. When the helo nears the area to be swept, the crew uses a hoist to lower the equipment into the water while the helo hovers about 60 feet above. A tow cable, with one end attached to the mine-sweeping gear and the other to a tow bar at the rear of the cargo ramp, is payed out to the desired length for towing the gear through the water.

The larger magnetic sweeping gear, however, is usually transported to the sweeping area by a ship. Any ship with a platform big enough to accommodate the H-53 may be used, but an LPD or LPH is preferred. In most cases, mag-

The Mk 105 is loaded into the well deck of the amphibious transport dock Raleigh. The magnetic sweep can also be lifted to and from the LPD's flight deck by helo.

netic sweeping equipment will be carried on the flight deck of the ship, lifted off by the helo, lowered into the water and pulled to where the sweeping will be done. The magnetic gear can also be launched from an amphibious ship's well deck, but sea conditions are the biggest factor in these operations.

Mine-sweeping equipment used by the helos and their crews includes Mark 103, 104 and 105 gear.

The Mk 103 is similar in operation to the Oraspesa sweep which has been around since World War I. It is fitted with explosive cutters mounted at intervals along sweep wires diverted outwards astern of the helo. The cutters sever the wire or chain cables of moored mines, letting them rise to the surface where they can be destroyed by gunfire.

The Mk 104 acoustic device is a lightweight, water-actuated venturi tube that produces a signature through cavitation, at various frequencies. The signature resembles that of a ship and explodes acoustic mines in its range.

Latest in the inventory is the Mk 105 magnetic sweep. This sled-on-hydrofoils is fitted with a turbo-generator and a magnetic conductor cable which simulates the magnetic field of a ship, with electrical pulses, actuating the firing mechanisms of magnetic mines.

If an acoustic device is included in the Mk 105's system, a combined influence is achieved and the sweep is then known as an Mk 106 system.

The world's first sea mine was probably a pile of rocks dumped into the harbor entrance of the ancient city of Tyre by the Phoenicians in 55 B.C.

Alexander the Great's navy, facing this threat during an amphibious assault on the city, hung cables between pairs of ships to clear away the rocks and open the way for the attack.

As crude as the Phoenician "mines" were, they served the same purpose as today's sophisticated weapons, and the principle behind Alexander's "mine sweepers" is identical to that of modern MCM vehicles.

Other examples of mine warfare are evident in the history of war at sea. A bridge over the River Scheldt, which flows from Northern France through Belgium and the Netherlands to the North Sea, was destroyed by a drifting mine in 1585 and, in 1775, David Bushnell constructed a number of "keg" mines which were floated down the Delaware into the British fleet at anchor off Philadelphia.

First use of moored mines as a defensive measure was by the Russians in the Crimean War of 1854-56.

Similar types of mines were used by the Confederates during the Civil War. Thirty-two Union ships were mined between 1861 and 1866; 27 of them sank. The torpedoes that Admiral David Glasgow Farragut "damned" were really mines, "spar torpedoes" as they were called at the time.

Further use of defensive mining was made in the Austro-Prussian, Franco-Prussian, Russo-Turkish, Spanish-American and Russo-Japanese Wars. Both sides utilized mine warfare in World War I. In 1917, a field of over 70,000 mines extending 240 miles, called the North Sea Barrage, effectively closed the German navy's exit to the North Atlantic. During that war, 44 Allied and 102 German warships were sunk by mines.

Mines designed to be actuated by the influences provided by a ship were introduced in World War II. Nearly 600 Allied and over 1,000 Axis ships

were sunk in the European Theatre alone. It was during this period that aircraft joined surface ships and submarines as minelaying platforms.

Mine warfare played an equally important role in the Pacific where Allied mines sank or damaged two million tons of Japanese shipping. In 1945 the U.S. effectively mounted Operation *Starvation* off Japan applying a stranglehold on coastal shipping routes.

Five years later the effectiveness of mine warfare, even by technologically under-developed nations, was made evident at Wonsan, Korea.

As the First Marine Division was preparing to assault the beach, it was discovered that the harbor area had been saturated with old contact mines. Two mine sweepers, *Pirate* and *Pledge*, were lost within minutes, and the entire task force had to steam for eight days while an approach was cleared to the beachhead.

More recently, North Vietnamese and Viet Cong troops have made extensive use of command detonated mines in the rivers and ports of South Vietnam.

It was the Wonsan operation, however, that paved the path for airborne mine countermeasures when helicopters were used to spot mines from the air. Personnel in the Bureau of Aeronautics' armament division were only too aware that the mine-spotting helo did not or could not prevent the destruction of the mine sweepers. These men asked why helicopters couldn't tow mine-sweeping gear and become the lead sweep, protecting the following surface mine sweeper.

This concept led to the development of the airborne MCM program. Three major hazards to military and merchant shipping in wartime are air and submarine attack and enemy mines, which are probably the hardest to combat.

Mines are designed with ships' characteristics in mind. Mines either float near the surface while moored to an anchor or rest on the sea bottom. Moored mines are normally of the contact type. Direct physical contact between the mine case, or its attachments, and the target is needed to set it off. Bottom — magnetic and acoustic — mines require an influence from a passing ship to trigger their firing mechanisms.

To understand the way these influences work, it is necessary to first consider the basic composition of the ship.

A ship is a large, steel object with a magnetic signature which varies in intensity and shape with ship type. It also emits varying amounts of acoustic "noise," from about one cycle per second up to several thousand, because of its machinery and its movement in the water.

As a ship moves through the water, she also creates an increased pressure ahead of her and a subsequent decrease directly below and to the sides. Influence mines can be set to react to the change in the earth's magnetic field caused by the presence of a ship, to the acoustic noise she generates, or to the pressure increase and subsequent decrease caused by her passage.

As if this isn't enough, modern mine-firing devices may require that two or three of these influences be present. They also can be designed to react only to a ship of a certain size and speed, and may be fitted with ship counters which will allow a certain number of targets to pass safely overhead before the charge is detonated. If a channel happens to be mined with such devices, a carrier's destroyer escort might make it through, but as for the carrier . . . . .

Mine sweepers are built to prevent such a thing from happening. But mine sweepers, too, need some protection. They are designed and built in such a way as not to appear as ships to the mines — at least as much as is possible. This substantially increases the construction, maintenance and operating costs of mine sweepers; yet, it cannot totally eliminate the dangers they face.

At this point, the advantage of using helicopters should be obvious.

Helos operate in a different medium and by exploiting this advantage, Naval Aviation is augmenting the mine countermeasure surface forces and increasing efficiency while reducing inherent vulnerability. This means that because helos move over the ocean rather than in it, they are less likely to activate a mine unintentionally.

The idea of using helicopters as lead sweeps received backing in BuAer after the Wonsan landing. Air Development Squadron One and Mine Evaluation Detachment Seven at Key West, Fla., were tasked with evaluating this idea.

Testing of the concept began in 1952, and the first demonstrations of a helo used for mine sweeping were made in the Piasecki HRP-1. A draw-

HM-12 pilot readies for at-sea tests, above. CH-53A tows Mk 105 magnetic sweep during trials, right. Sea Stallion power is demonstrated as the helo pulls an LPD through the water, far right.

bar pull of 7,000 pounds, in excess of the helo's gross weight, proved the HRP-1 to be an efficient tug.

Other possibilities appeared as these tests continued. By extending the tow boom and hook, the helo not only could pick up and take over a tow from a surface vessel, it could also do so from another helicopter. Continuous sweep operations were possible by alternating helicopters, and the swept path could be extended by using several helos in echelon.

These first tests were so successful that the program was enlarged. A VX-1 detachment and the HRP-1 helos were relocated at the Navy Mine Defense Laboratory where the unit could receive expert MCM technical guidance. The unit grew and in August 1956 was named the Naval Air Mine Defense Development Unit, a name it carried until the unit was disestablished in 1968.

Despite the progress made by the unit, there were some problems to overcome. One of these was to find another helicopter to use in the tests, because, although the HRP-1 had proven the operation's feasibility, it was otherwise obsolete.

Several types of helicopters were evaluated, but most of them either could not cope with the required 7,000 to 10,000 pounds of tow cable tensions or they were deficient in other capacities. (The maximum tension for the RH-53D is set at 15,000 pounds.) The test helo finally decided upon was the Bell HSL-1, designed originally as an antisubmarine helo. After the ASW testing program was completed, the Sikorsky HSS-1 *Seabat* was selected as the fleet's ASW rotorcraft. But because there were sufficient HSL-1's that could be made available for research and development, the decision was made to use them for MCM.

Six of the HSL-1's were almost immediately modified by Bell for their new role. They became the first copters to undergo complete evaluation as airborne, mine-sweeping vehicles and were used until April 1960.

As good as the HSL-1 was, it was still not the ideal visualized by mine defense experts. As the 1950's passed, fewer of the type were available for use. This created a shortage of support parts, and modification costs increased. These were the contributing factors in the shift from the HSL-1 to the *Seabat*, which was then in wide use.

During this period the Navy was contracting with Sikorsky for a helo larger than the *Seabat* — one that would have a combined hunter/killer capability. Fleet delivery of the HSS-2 *Sea King* began in September 1961, with the designation changed to SH-3 a year later when U.S. aircraft designations were standardized.

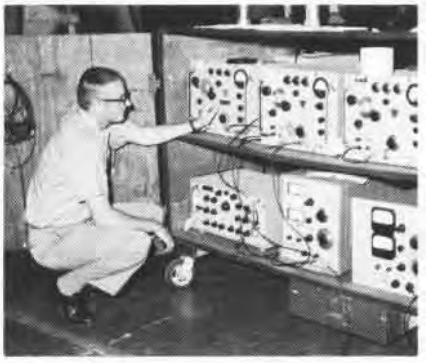
In 1965, nine SH-3A's were converted to RH-3D's and research and development gave way to operational reality.

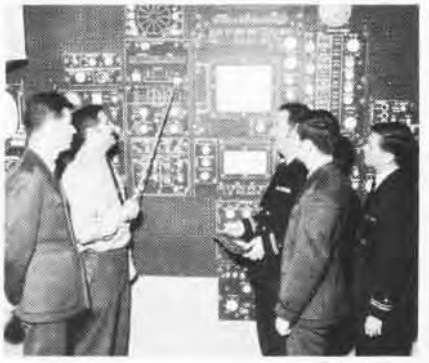
The MCM helos were assigned to utility squadrons (and later to helicopter combat support squadrons) in the Pacific and Atlantic; their mission — to conduct normal mine-sweeping operations with the MCM ships *Catskill* (MCS-1) and *Ozark* (MCS-2). This they did for more than five years.

Still, a larger, more powerful helicopter was needed if airborne mine countermeasures were to reach their full potential, and the decision was made to go with the Marine Corps' *Sea Stallion*, with Sikorsky ultimately building the RH-53D's.

With the commissioning of HM-12, mine sweeping truly went airborne.

CRAMMING FOR JAMMING





By Michael G. McDonell

Photos by R. G. Hendersen

Getting ready for the EA-6B takes a great deal of time, education and manpower, above. Opposite, the end result — a trained crew.

Whales are scarce these days. At NAS Whidbey Island, Wash., they are extinct. For over ten years the A-3 *Skywarriors*, *Whales* in popular jargon, operated out of Whidbey. But on January 29, 1971, the last of the old breed of Whidbey's West Coast fleet A-3's left the station forever.

During its tour, the A-3 aged; following its initial role as the Navy's primary radar bomber during the 50's, it was assigned the mission of providing airborne refueling services to carrier-embarked air wings. Modifications gave it an electronic warfare role.

As the *Skywarrior's* star began to fade, another star appeared on the horizon, that of the EA-6B — an electronic warfare version of the A-6 *Intruder* — which was destined to replace the *Skywarrior*.

The end came for the Whidbey *Whales* when the station's last A-3 squadron, VAH-10, was redesignated Tactical Electronic Warfare Squadron 129 (VAQ-129) on September 1, 1970. Along with the new designation, the squadron received a new aircraft and mission. As the first squadron under Tactical Electronic Warfare Wing 13 (VAQW-13) — which moved from NAS Alameda to Whidbey in October 1970 — VAQ-129 became the West Coast VAQ community's training squadron, instructing flight and ground support replacement personnel for the EA-6B squadrons.

With a projected total of nine VAQ's ultimately operating from Whidbey, VAQ-129 has its work cut out for it.

The latest in the *Intruder* line, the EA-6B combines a fully integrated electronic system with a long-range, all-weather capability and advanced electronic countermeasures systems. Designed for carrier and forward base operations, it is a modification of the basic two-place A-6 airframe, but with further modifications. The addition of a forward cockpit increases the crew to four — the two tandem cockpits with side-by-side seating accommodate a pilot and three electronic countermeasures operators (ECMO's).

The primary avionics system of the aircraft is the tactical jamming system (TJS) which consists of the onboard electronic system and externally mounted jamming pods. Operated by two ECMO's, the TJS is used to intercept, analyze, evaluate and jam "threat" radar; the third ECMO operates the communications' jamming equipment.

Because the EA-6B is designed to support strike aircraft, ships and ground forces by negating the effectiveness of enemy electronic weapons systems, its highly sophisticated electronic equipment must be operated and maintained by skilled experts if it is to operate effectively and efficiently. VAQ-129 makes certain that the experts are provided. The new squadron was formed from a nucleus of experienced officers and enlisted men skilled in the art of electronic warfare, men who had experience with EA-3B, EA-1F, RA-3B and EC-121 aircraft.

The task that the squadron faced was formidable; plans called for the training of aircrews and maintenance personnel to begin in December 1970.

Because the EA-6B was a complete-

ly new aircraft, none of the squadron's personnel had any experience with its sophisticated tactical jamming system. Instructor candidates attended training conducted by the Grumman Aerospace Corporation, manufacturer of the A-6. Returning to Whidbey with their newly acquired knowledge, the instructors set up the classrooms, developed training aids, planned schedules and wrote the syllabus. Classes began on time – when the first groups of students arrived in December.

When the first EA-6B, dubbed *Red One*, was delivered and accepted by VAQW-13 and VAQ-129 in late January 1971, it was immediately used for fleet training with 200 flight training hours logged in the first 30-day period. Soon after delivery of *Red One*, a preproduction model used in flight tests by Grumman and the Naval Air Test Center, Patuxent River, Md., was delivered to VAQ-129. The squadron's training department devised a method of utilizing this aircraft as a ground trainer for both flight crews and maintenance personnel. Signal generators were designed and built by squadron personnel. The training aircraft is also equipped with an onboard computer through which signals to be jammed may be simulated. The training sessions allow the ECMO to function as if actually flying in a hostile environment. A complete mission can be simulated without the aircraft leaving the hangar. *Red One* is being used as a substitute for the team tactics trainer.

The flight officers receive training in navigation, electronic warfare theory and airmanship, all of which qualifies them to become command ECMO's. They are eventually joined by the pilot, after he completes training with Whidbey's VA-128, the West Coast A-6 training squadron.

Like the flight officer training, enlisted training for the EA-6B in the AE and AT ratings also utilizes *Red One*. An 80-hour course for aviation electrician's mates includes the study of power supplies, flight and engine instruments, navigation and flight control systems, and computers. In a 160-hour course, aviation electronics technicians are taught communications, navigation and identification systems, as well as the intricacies of the aircraft's tactical jamming system.

Walk through VAQ-129's spaces and you will notice a seemingly inordinate amount of civilians. Because the newest *Intruder* is a highly sophisticated aircraft, the squadron tasked with providing trained personnel to fly it must have skilled and proficient advisers in the initial stages. The 23 Grumman representatives working with the EA-6B program at Whidbey Island are ample proof that the contractor is not through with the job the day that the first aircraft is delivered to the Navy. The services rendered range from actual maintenance on the aircraft to instructing the potential flight crew instructors.

Grumman is also in the process of constructing the team tactics trainer which will be used to train the ECMO's. The trainer will consist of a simulated cockpit which will enable the three ECMO's being traned simultaneously to learn to work together under realistic conditions. The training device is similar to the flight simulator used by potential *Intruder* pilots.

A portion of the maintenance training for squadron personnel is currently being conducted at Grumman's Cal-

PH2 MacAlister

On the opposite page, ECMO and instructor discuss flight procedures. ADJAN Bill Diggs, left, works on the new Intruder's engine. Below left, SecNav Chafee receives a briefing by VAQ-129 staff. A student ECMO on a simulated hop, below. Bottom, crash crew members inspect a safety device on the airframe.

verton, N.Y., facility. While undergoing training in maintenance troubleshooting, the students use the system integrated test station (SITS), consisting in part of a computer which simulates maintenance problems and which requires the students to discover what portion of the system needs repair.

While at Calverton, the EA-6B crew members also attend a familiarization course on the aircraft's general characteristics. They then return to Whidbey for additional aircraft familiarization at VA-128.

VAQ squadrons are now being trained one at a time. When all of the squadrons are fully manned, VAQ-129 will train replacement aircrews and maintenance personnel for the EA-6B fleet squadrons.

Thus far, VAQ's 131 and 132 have become fleet squadrons. They will soon be followed by 133 and 134. When the operational evaluation of the new *Intruders* is completed at the Naval Weapons Evaluation Facility, China Lake, more EA-6B's will appear in the skies over Whidbey as the new aircraft assumes its place in the airspace once dominated by the *Whales*.

By Michael G. McDonell

SUPER

A wing is a lifting structure. A supercritical wing is also. Under transonic conditions it lifts better than conventional wings, in theory, and, now, in the process of testing, it may be confirmed in fact.

The term won't be found in Webster's but it is common in the lexicon of aeronautics and will become even more common in everyday language if current tests fully support the theory that it can substantially improve the performance and efficiency of future aircraft.

The words denote a new airfoil shape that was developed at NASA's Langley Research Center, Hampton, Va., as a result of four years of wind-tunnel studies by Dr. Richard T. Whitcomb. The supercritical wing configuration is characterized by a flat-top to slow down the speed of airflow and a downward curved rear section as opposed to the curved top and sloped rear section of a conventional wing.

The theory goes like this: When the speed of an aircraft approaches the speed of sound, regions of high supersonic airflow develop about the aircraft. This supersonic flow develops particularly above the wings and can cause severe local disturbances such as shock waves and surface boundary layer flow separation. These disturbances can bring a substantial increase in drag, severe buffeting and adverse changes in the stability of the aircraft.

Normally, subsonic flight operations are kept below the speeds at which such effects occur. For present day subsonic jet transport-type aircraft, the adverse effects begin to occur at a speed of approximately Mach 0.8 (approximately 530 mph) and at a cruising altitude of 35,000 feet.

Wind tunnel and analytical studies conducted by NASA indicated that the supercritical wing had the potential of permitting subsonic speeds in excess of Mach 0.95 before such effects occurred.

The most widely used method to delay the rise of the drag force and onset of the buffet has been to angle the wings of the aircraft back toward the tail. However, excessive wing sweep increases the structural weight, creates problems relating to low speed flying qualities and possibly requires longer takeoff and landing distances.

The shape of the supercritical wing has been developed to substantially delay the onset of high speed effects. It is designed to reduce the intensity of the airflow disturbance at higher speeds by reducing curvature or, stated

As viewed from below, the supercritical wing in flight aboard a modified F-8, opposite. Left, the thin wing is installed aboard the Crusader. The two aircraft below are Navy T-2C's. The Buckeye on the right is equipped with a thick supercritical wing.

CRITICAL WING

quite simply, flattening the upper portion of the wing. This change, combined with the downward curvature at the rear portion of the wing, which supplies the lift lost by flattening the forward portion, increases the basic speed at which drag rise and buffet begin. The result is a more efficient wing in transonic flight. The benefits of the supercritical wing can be seen in a variety of ways and combinations. It can provide extension of the drag divergence Mach number, or higher buffet free lift, or increased wing thickness to allow a lighter aircraft to carry more fuel, or decreased wing speed.

Actual realization of a flyable supercritical wing first occurred on November 24, 1970, when a Navy T-2C *Buckeye*, using a "thick" supercritical wing, was successfully flown on its initial test at North American Rockwell's aviation facilities at Columbus, Ohio.

Built by North American under joint Navy-NASA sponsorship, the thick supercritical wing was constructed with fiberglass-covered balsa wood and fitted as a "glove" over the T-2C's original wing, adding a 40 percent increase in thickness.

Because so much data was available on the *Buckeye*, it was selected as the vehicle for the first test of an airfoil specifically designed to operate efficiently under transonic conditions. Evaluation of the thick wing's performance shows performance gains that can be applied to increased cruising speed or to increased internal fuel load and structural efficiency.

A "thin" version of the new airfoil, aimed at maximum speed performance, was also constructed by North American Rockwell for NASA. The supercritical wing replaced the basic wing and was mounted on a Navy F-8 *Crusader*, BuNo 141353, and first flew at NASA's Flight Research Center, Edwards AFB, Calif., on March 9, 1971. As of May 26, the aircraft had attained a top speed of approximately 725 mph at 35,000 feet, slightly in excess of the speed of sound.

A second F-8 may be modified in the future, utilizing a supercritical wing complete with high-lift devices for shorter takeoffs and landings. Modifications to the fuselage are also likely, to improve air flow characteristics at higher speeds.

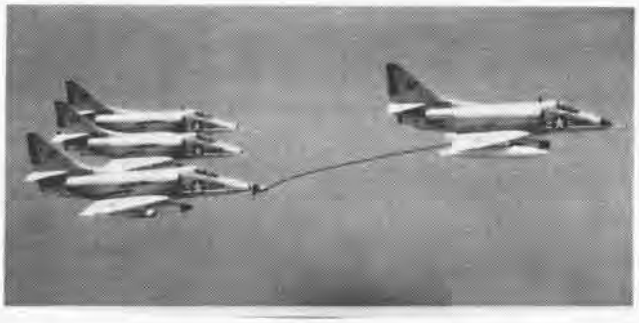
Don't look for production models of the T-2 or the F-8 complete with supercritical wings, but as the new wing's technological advantages are confirmed, it would be a safe bet to expect it in future Navy aircraft.

SK

The A-4 *Skyhawk* has proven to be a long lived workhorse of the Navy's attack squadrons. Designed in the 1950-52 period as a successor to the reliable but prop-driven *Skyraider,* the A-4 offered a gross weight of approximately half that proposed by Navy specifications. The initial prototype was ordered in June 1952 and made its first flight in February 1954. In October 1956, VA-72 was the first fleet squadron to receive the new aircraft, A4D-1's (A-4A's). Since then, five major attack models have been introduced, A-4B, A-4C, A-4E, A-4F and A-4M, as well as two trainer configurations, TA-4F and TA-4J.

Designed as a simple, low-cost, lightweight attack and ground support aircraft, the *Skyhawk* is also capable of delivering a nuclear weapon. The A-4 has a modified delta planform, low-aspect-ratio wing with a moderate wing loading which gives this tactical aircraft excellent low-altitude, high-speed flying qualities. Its design, in addition to providing for low-altitude operations, combines low unit cost and maintenance requirements with high combat survivability, long range and large payload. *Skyhawk* ordnance includes 20mm guns, rockets, missiles and a variety of bombs which can be delivered by lay-down, glide, loft, over-the-shoulder and ground-controlled modes. All ordnance stores are carried externally on pylons and racks under fuselage and wings.

The A-4M, the latest of the *Skyhawk* line, in addition to a 20 percent increase in thrust, has a redesigned canopy providing improved visibility and headroom. It also features a 100 percent increase in 20mm ammunition for its two Mk 12 guns and an improved lead computing sight.



YHAWK

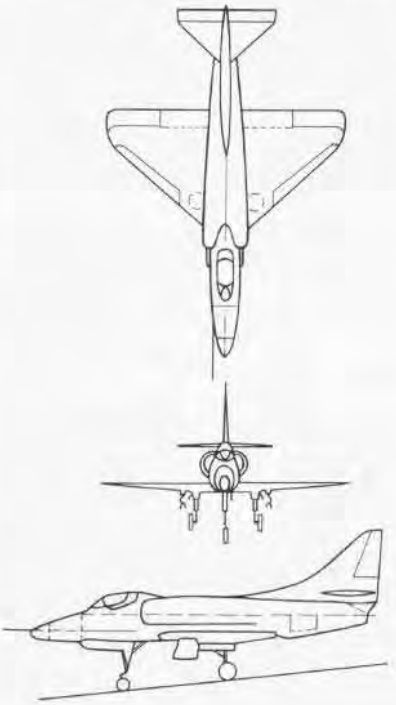
A-4B A-4C

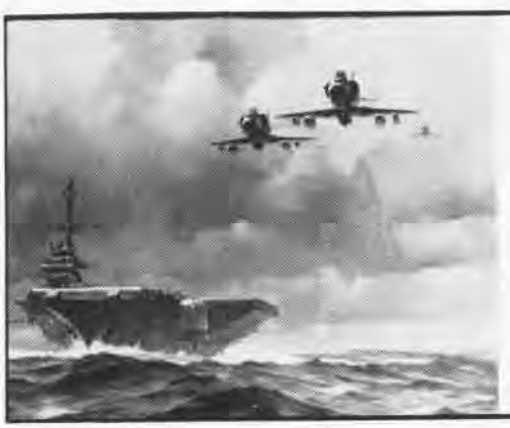
A-4E A-4F A-4M

Length		
A-4A/B/C		39'5"
A-4E/F/M		41'4"
Height		15'0"
Wing span		27'6"
Engine and thrust		
A-4B/C	J65-W-16A	7,700 lbs.
A-4E	J52-P-6A	8,500 lbs.
A-4F	J52-P-8A	9,300 lbs.
A-4M	J52-P-408	11,200 lbs.
Ordnance stations and capacity		
A-4B/C	3	8,055 lbs.
A-4E/F/M	5	9,155 lbs.
Cruise and maximum speeds		
A-4A	410 kts.	565 kts.
A-4B	432 kts.	563 kts.
A-4C	431 kts.	548 kts.
A-4E	433 kts.	552 kts.
A-4F	410 kts.	561 kts.
A-4M	420 kts.	578 kts.

Service ceiling 8 up to 40,450 feet in some models

Combat radius — up to 200 nm in some models





at Sea with the Carriers

ATLANTIC FLEET

John F. Kennedy (CVA-67)

Because of heavy training and operational commitments, an attack aircraft carrier does not often participate in the Open-House Ship Program at Norfolk. However, since *Kennedy's* commitment on Armed Forces Day was to be berthed at Pier 12 at Norfolk, the gangplank was down to welcome visitors aboard in honor of the day.

Her in-port period gave *JFK* another opportunity to play host – to 12 beauty contestants led by Miss Norfolk 1970, who came aboard as part of a "salute to the U.S. Navy in Norfolk."

Forrestal (CVA-59)

RVAH-7 flyers, Commander A. R. Skelly, squadron executive officer, and LCdr. C. D. Rowley, his reconnaissance attack navigator, recorded a first for themselves when they landed an RA-5C *Vigilante* aboard *Forrestal* in the Med, completing the 500th carrier arrested landing for each of them. Cdr. Rowley made almost all of his 500 landings in the *Vigilante*.

Wasp (CVS-18)

Five civilians from Michigan, New York and Kentucky were guests aboard *Wasp* for five days under the auspices of SecNav's Guest Cruise Program. This program allows naval districts to invite prominent community leaders aboard to observe how the Navy operates. The men embarked before *Wasp* left Quonset Point, R.I., on a two-week deployment off North Carolina for ASW exercises. They were catapulted off the ship five days later. During their time aboard, the guests spent as much as 16 hours a day getting to know the ship.

Aboard Ranger, Ltjg. S. E. Muzzo, left, Ens. S. J. Krug and Lt. Alan Frank, right, give Weathergirl instructions before a broadcast.

Lexington (CVT-16)

Lexington marked her 278,000th arrested landing when Ltjg. M. W. Graham of VT-4 based at Forrest Sherman Field, Pensacola, Fla., flew aboard on May 13.

Lex, now 28 years old, is the oldest operational carrier in the Navy.

PACIFIC FLEET

Kitty Hawk (CVA-63)

Long on the receiving end of vertical replenishment, *Kitty Hawk* recently did the supplying. While steaming into the wind for the launch and recovery of her aircraft, and then running downwind until the beginning of the following cycle, the carrier crossed paths with a small family-occupied, Vietnamese fishing craft several times. CVA-63's commanding officer, Captain Owen H. Oberg, decided that since the ship's aircraft was providing the air show for the fishermen, the ship's supply department could furnish the refreshments. The Vietnamese were visibly worried when they realized *Kitty Hawk* was approaching them. It was difficult to make them understand, but they finally got the idea. The cargo – a five-gallon container of orangeade, a box of fruit and 25 pounds of rice – was lowered by an HC-1 *Seasprite*. Grateful smiles and much waving expressed the recipients' appreciation.

The carrier's tenth anniversary celebration was another exercise in getting the refreshments delivered. The 6'x2' x2' cake masterpiece would not fit through a single hatch on the way up to the hangar deck. Finally, a sharp knife divided the cake, which was then carried in two sections and put together again with a quick patch job.

Ranger (CVA-61)

There were only a few handshakes and a "well done" when Commander Paul E. Bovey and his crew, LCdr. Bernard P. McSherry, Jr., and PO3 James MacDonald, flying an A-3 *Skywarrior*, made the 150,000th landing aboard *Ranger*. However, four days later, several thousand crewmen crowded the ship's hangar bay for an old-fashioned picnic and barbecue which celebrated both the landing and the 60th anniversary of Naval Aviation.

Mrs. Jane Lewis, otherwise known as Janie the Weathergirl, is a volunteer weatherman for the Armed Forces

Vietnam television network. While she was visiting ships on Yankee Station, Janie went aboard *Ranger* in May to fill in for LCdr. James Kerr, ship meteorologist, on an evening news weather forecast. She also made promotional spot fillers to be used later by KRAN (*Ranger's* closed circuit TV). For months to come, Janie will be announcing the evening movie, selling U.S. Savings Bonds and introducing regular radio and TV programs. Janie also made a five-part series about motorcycle safety.

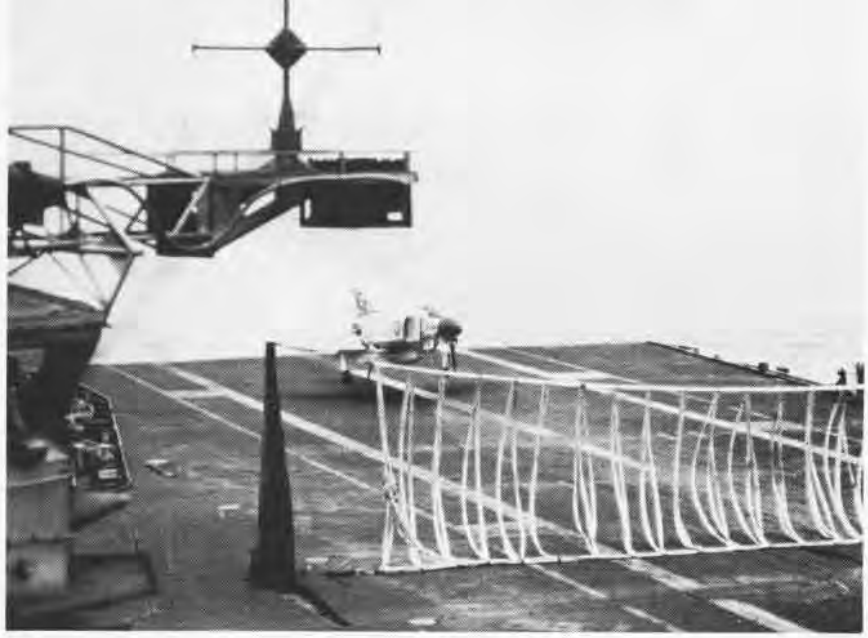
An F-4 *Phantom*, damaged during launch from *Ranger*, was successfully recovered during combat operations on Yankee Station. During takeoff, the *Phantom's* left main landing gear wheel broke off. The pilot, Lt. Jerry Pitchford, and his radar intercept officer, Ltjg. Chad Browne, were told the bad news and given emergency instructions. They unloaded the live ordnance in a safe area, burned off fuel during four practice approaches and then made an emergency landing back on *Ranger* with relative ease, engaging the net barricade before rolling to a stop 215 feet up the deck.

Franklin D. Roosevelt (CVA-42)

FDR and her embarked Attack Squadrons 15 and 87 were among the U.S. units which participated in NATO Exercise *Dawn Patrol 71*, simulating wartime air strikes and air defense, antisubmarine warfare, surveillance and amphibious operations.

Her deployment on the exercise followed a period of reunion for *Roosevelt* men and their wives, during which 388 wives arrived in Athens on chartered flights from Jacksonville and Oceana. At the same time, 435 sailors moved in the opposite direction, departing Athens for Jacksonville and Oceana – and their families.

Having taken part in the spot film *Flight Deck*, and a Belgian TV production, *FDR* was once again a "star" when camera crews came aboard to shoot scenes for several films – a NATO documentary showing a history of the struggle for power in the Medi-



In the first such emergency landing aboard Ranger in two years, Lt. Pitchford's F-4, minus a wheel, snares the nylon barrier.

terranean, a news extra and a short feature. The feature deals with the problems we are facing in the Med today and shows the cooperation existing between American, United Kingdom, Turkish and Italian forces. It highlights the presence of the Sixth Fleet in the Med and the role it plays in world affairs.

Coral Sea (CVA-43)

After a ten-month major overhaul, CVA-43 put to sea for a four-day test cruise. Off the coast of California, she spotted the famous rowboat *Brittania II* with British adventurer John Fairfax aboard.

During her sea trials, CVA-43's commanding officer, Captain Wesley McDonald, received a message of congratulations from Commander, Fleet Air Alameda on his selection for rear admiral.

Oriskany (CVA-34)

The *Barn Owls* of VA-215 and two other attack squadrons, VA's 153 and 155, homeported at NAS Lemoore, are embarked on *Oriskany* who is on her 12th WestPac cruise and sixth consecutive deployment to SEAsia. Two fighter squadrons from NAS Miramar, VF-191 and VF-194, are also aboard.

Food is sometimes hard to come by when 3,000 guys try to go through one chow line – all at once. And aboard *Oriskany* the problem was acute since space is at a premium on her mess decks. Long lines, long waits, accompanied by the usual complaints were a constant problem. However, among the complaints were a few good suggestions and from one of these came the *Oriskany* Barbecue. It is served daily on the fantail when there are no flight operations, the time when the problem was the worst. The cooks use charcoal grills and prepare hamburgers and hot dogs. The new "backyard" barbecue is serving its purpose – and then some.

Oriskany is under the command of Captain Frank S. Haak.

This was the view from the Seasprite as it approached the small fishing boat with Ranger's gift of fruit, rice and orangeade.

Ticonderoga (CVS-14)

The first U.S. carrier to operate in the Indian Ocean in several years, Tico recorded her 138,000th landing 1,000 miles south of the Equator. The landing was made by LCdr. Guy I. Wilcox of Antisubmarine Squadron 38 flying an S-2E *Tracker*.

When the exercise ended, Ticonderoga and her crew visited Singapore and then proceeded to Hong Kong where 200 wives were waiting for their husbands.

Midway (CVA-41)

After four years of brushing up on the latest advances in Naval Air technology, the 67,000-ton attack aircraft carrier *Midway* has returned to the Seventh Fleet for operations on Yankee Station. CVA-41 is operating with CVW-5 embarked and is the flagship for Commander, Carrier Division One, Rear Admiral John L. Butts, Jr.

Two days after her arrival on Yankee Station, an F-4B *Phantom II* with pilot Lt. William Ribble and RIO Lt. John Mochtak registered the 150,000th recovery on *Midway's* deck.

Chief of Naval Operations Admiral Elmo R. Zumwalt is emphasizing "people" programs in the Navy with the goal of making naval service more attractive to top quality young people. It was therefore quite appropriate that the Navy's number one "people" man, Adm. Zumwalt himself, should personally "ship over" 25 members of *Midway* and Carrier Air Wing Five during his visit to the 26-year-old carrier on Yankee Station.

Adm. Zumwalt re-enlisted men with a total of 112 years of experience for another 114 years. Sixteen of those re-enlisting were first termers and Adm. Zumwalt personally signed each of their discharges.

Guam (LPH-9)

When Maj. Harry H. Gast, Jr., USMC, landed a CH-46D on USS *Guam*, he marked the amphibious assault ship's 26,000th safe helicopter landing. The ship was riding at anchor in Timbakion, Crete, while performing operational readiness drills and supporting Marine field exercises.

Guam's commanding officer, Captain Kenneth B. Austin, was a passenger on the flight.

This 831-pound cake, the creation of CS1's Robert J. Bushey and Eddie Harris, right, had to be cut in half before it could be delivered to Kitty Hawk's hangar deck.

PEOPLE TO PEOPLE

Helping others help themselves is what *Ranger's* crewmen have done for the villagers in a rural community near NS Subic Bay. When the Luakan Elementary and Secondary School, heavily damaged by Typhoon *Patsy*, was condemned, crew members decided to rebuild the school, contributing time, money and hard work. They gave up liberty hours and $6,500 from their paychecks.

Whenever *Ranger* was in port, her crewmen worked side by side with Filipinos — who continued the work whenever the carrier was at sea.

When *Ranger* left the Far East, the volunteers, in a change-of-hands ceremony, turned the nearly finished school over to the Filipinos.

Luakan School rebuilding proceeds full speed ahead as Ranger men and Filipinos pitch in and prove that a cooperative effort gets the job done. School children and teachers alike also came to contribute their share.

Navy swimmers ride Apollo 12 spacecraft as the primary recovery ship Hornet approaches for pickup above. At right the seared capsule is lifted aboard the carrier for trip to Pearl Harbor and then Houston.

CATCH A FALLEN STAR

by JOC C. R. Elliott

Kunia Facility is known to relatively few people. What goes on inside this underground fortress on Hawaii's main island is even less known.

Located under the Wainae Mountains on the western end of Oahu, the facility houses operational control centers for many military commands on the island. From here, Captain Robert T. Tolleson and his staff of nearly three dozen Navy officers and enlisted technicians, plus several Air Force personnel, monitor America's manned space flights and direct the positioning of recovery forces in the Pacific.

Capt. Tolleson is recovery officer for Task Force 130 in the Pacific. As such he is responsible for planning, training for, and directing recovery, in the Pacific Ocean, of America's astronauts and their spacecraft.

The captain is a Naval Aviator and a veteran of 30 years' naval service. He went to Hawaii in August 1964 to direct Pacific area recovery operations and is one of few officers to spend more than a couple of years in any one job. His latest task is to bring home the astronauts and command module of *Apollo 15*.

Apollo 15, launched last month from Cape Kennedy, is the captain's 11th recovery operation. He supervised pickups of the crews and space vehicles of *Gemini 8*, *Apollo* flights *8*, *10*, *11*, *12*, *13* and *14*, and the unmanned spacecraft of *Apollo 2*, *4* and *6*.

Strange it is that Tolleson has never been able to watch recovery operations firsthand, from the deck of a ship. His job, instead, requires that he give his directions from Kunia, using a variety of electronic monitoring and communications equipment.

Memorabilia of the past decade adorn the captain's spacious office — maps, models of aircraft and space vehicles, photographs and a wood carving of a swayback horse.

The horse is a replica of the original mascot of the Navy Astronautics Group located at Point Mugu, Calif. The abbreviation NAG appropriately describes the animal which sits atop a coffee table. The captain explains that

the original NAG remains at Point Mugu where he was commanding officer before he went to Hawaii.

Putting the replica aside, Capt. Tolleson returns to the subject closest to him — U.S. space flight. He recalls that there has been for him no single, "most memorable" flight in his years as a direct participant; that each mission had its moments, good and bad.

"*Gemini 8* was the first 'crisis' flight after the *Mercury* program," he says. "*Gemini 8* was landed in the Western Pacific in an emergency situation when the mission was terminated early."

That mission ended March 16, 1966, with Astronauts Neil Armstrong and David Scott and their capsule being picked up by the destroyer *Leonard F. Mason*, 800 miles southwest of Japan. Armstrong became the first man to walk on the moon when he stepped onto the powdery surface July 21, 1969, and announced: "That's one small step for man, one giant leap for mankind."

From the standpoint of textbook-type operations, the captain cites *Apollos 12, 13* and *14*. "They were all as error-free as any we could have," he says.

Textbooks and planning notwithstanding, *Apollo 13* caused anxious moments around the world when James Lovell, John Swigert and Fred Haise ran into trouble.

The *Apollo 11* mission was generally proclaimed the most successful. "We had President Nixon aboard the primary recovery ship USS *Hornet*," adds Tolleson. "This threw a lot of extra requirements on us, primarily in plane-guard ships and aircraft, and in communications support and security."

As in past flights, Tolleson's primary task is to plan recovery operations, devise contingency plans and train the forces involved.

Selected as the primary recovery ship (PRS) for *Apollo 15* is the amphibious assault ship USS *Okinawa*, a veteran of the unmanned *Apollo 6* mission. The fleet oiler USS *Kawishiwi* will act as secondary recovery ship (SRS).

"The Navy is the largest part of the team," explains Capt. Tolleson. "However, we also have Air Force men. Para-rescuemen of the 41st Aerospace Rescue and Recovery Wing ride a C-130 *Hercules*. Their job is to parachute into the water if splashdown is outside the primary recovery zone."

Helicopter Composite Squadron One from Imperial Beach, Calif., and Underwater Demolition Team Eleven from Naval Amphibious Base, Coronado, Calif., comprise the primary pickup units.

Training for these men, recovery ships' crews and communications personnel begins months before the actual liftoff of a spacecraft. "We have our recovery forces practice simulated recoveries, and this includes our helicopter crews and swimmers," continues Tolleson.

Ships assigned to a recovery mission conduct training in port and at sea. Each ship's crew receives a minimum of three days intensive training at sea prior to taking up station.

"The ships, helicopters and UDT swimmers continue their training on a daily basis en route to their station," he adds.

A final rehearsal is held two days before the command module splashes down. "It involves the entire recovery force chain of command," says Tolleson, "from Mission Control in Houston, through our control center at Kunia to the task group commander on the PRS.

"This rehearsal is usually done at the actual target point and at the splashdown time of day."

Although the secondary recovery ships receive less recognition in a normal mission when the PRS makes the pickup, the crews are equally concerned and prepared to recover the men and machines. "Circumstances at the time," points out the captain, "determine whether a secondary recovery ship will make the pickup."

Tolleson explains that early termination of a flight — within the first three hours after launch (*NANews*, April 1971, pp. 22-23) — would result in a landing within 36 hours' steaming time of Pearl Harbor.

"The primary recovery ship could well be some six to eight days south of the islands, in the translunar abort recovery area," the captain continues. "In such a case a destroyer would be dispatched from Pearl Harbor to make the recovery."

Each of the secondary recovery ships is equipped with a specially designed crane provided by the National Aeronautics and Space Administration. In addition to a destroyer, a fleet oiler may be designated SRS.

"The oiler's primary task," explains Tolleson, "is to replenish the PRS. It is also prepared to make the pickup."

The Air Force C-130's, with embarked para-rescuemen, are positioned up and down range in the event of a long "overshoot" or "undershoot." The para-rescuemen are trained to jump into the water and put a flotation collar on the command module to keep it afloat until the recovery ship arrives.

"In the event of an emergency situation," he adds, "the first people at the splashdown site would probably be the para-rescuemen. They put the collar on, help the astronauts into their raft and tie the whole thing together to await pickup, just as our Navy UDT swimmers do."

The captain recalls that *Gemini 8* required para-rescuemen to take such action. "They waited three and one-half hours for the *Leonard F. Mason* to arrive."

There are no other military services directly involved in the recovery operations, but Army and Air Force communications support has been used in the past. "We have not had to use their facilities for any of the lunar landing missions," says Tolleson, "only in the earth-orbiting missions when we had recovery forces in the Western Pacific as well as the mid-Pacific."

Apollo 15's splashdown is scheduled for August 7 about 300 miles north of Oahu.

Tolleson says the Army previously provided some support at the launch site, principally amphibious vehicles for emergency use.

The Pacific Missile Range Facility at Barking Sands, on Kauai Island, keeps a watchful eye on weather conditions during space missions. PMRF uses sounding rockets to probe the atmosphere and send back reports on atmospheric conditions.

As to his own aspirations to explore space, Capt. Tolleson says that "twelve or 13 years ago I would have said yes to a flight in space." The captain began his naval career in March 1941 when he entered the Navy from the University of Arizona. Born in Phoenix, he was commisioned ensign on March 14, 1942.

He served his early years, after earning his aviator wings, as a flight instructor at several Florida bases. Later he piloted a patrol bomber on missions over the Atlantic. Subsequent assignments included duty with aviation commands on Guam and the U.S. mainland, and a two-year assignment as missile officer aboard USS *Norton Sound* in the early 1950's.

Capt. Tolleson, right, discusses Gemini 8's splashdown with, from left, Capt. C. Koenigsberger, RAdm. H. S. Persons, former CTF 130 commander, and Col. D. T. Smith, former 41st Aerospace Rescue and Recovery Wing commander, above. Sea King hovers over Apollo 14 as Iwo Jima stands by, right. Capt. Robert T. Tolleson, recovery officer for Task Force 130, below.

That initial, direct association with the Navy's missile programs set the course for Tolleson's future contributions to the missile and space fields.

From *Norton Sound*, Capt. Tolleson went to Washington, D.C., for duty in the Office of the Chief of Naval Operations. While there he worked in the guided missile division's planning and budgeting branch. He left there in January 1956 to spend the next four years as executive officer and commanding officer of VP-42, and as operations officer aboard USS *Pine Island*.

He returned to OpNav in mid-1960 as Navy Navigation Satellite Project Officer and, in August 1962, he became commanding officer of the Navy Astronautics Group.

Captain and Mrs. Tolleson plan to remain in Hawaii after he retires. Before that day comes, however, the captain will direct the recoveries of *Apollos 15* and *16*.

America's next space program – *Skylab* – is more distant in time, but not out of sight for Captain Robert T. Tolleson.

"I'll be a very interested spectator of our earth-orbiting space station mission," he concludes as he returns to the task of safely recovering *Apollo 15* from within the underground operational control center at Kunia Facility.

THE SELECTED AIR RESERVE

Community Service Awards

Two Naval Air Reserve units, NAS Glenview and NARTU Alameda, have received Department of Defense awards in recognition of their continuing efforts in support of community projects and domestic actions. The two were among 30 Reserve and National Guard organizations thus cited at ceremonies held at the Pentagon. Assistant Secretary of Defense Roger T. Kelley and Deputy Assistant Secretary Theodore C. Marrs presented the awards.

NAS Glenview received its award for a concerted domestic action program which included aviation workshops and seminars on drug abuse for the youth of the greater Chicago area. NARTU Alameda won its citation for assistance to local youth programs, job assistance to veterans and the promotion of local racial harmony.

Exercise Hickory Plain

Two Marine Reservists from H Company, 2nd Battalion, 24th Marines, from Waukegan, Ill., were captured by members of the Arsenalia armed forces near Joliet, Ill., recently.

The capture was only a small part of the action which occurred during the largest Reserve exercise to be conducted in the Midwest by Marine Reserves. Nearly 1,500 Marine Reservists from Glenview, Chicago, Waukegan, Rockford and Joliet participated.

The mythical country of Arsenalia is located near Joliet and is part of the Fifth Army's training area. The exercise began at 2 p.m. May 26 as two companies of Marines attacked an aggressor stronghold while another company, transported by Marine Medium Helicopter Squadron 776, executed a vertical assault.

The enemy was equipped with simulated ground-to-air missiles to use against the Marines' air support, but the Marines captured these missiles before they could be used.

The exercise was designed to emphasize small unit tactics and to provide training in staff planning. Helicopters from HMM-776 were constantly in the air delivering troops to the assault sites. The troops were on the move, taking aggressor positions and clearing enemy mine fields. Throughout the exercise, Marine Attack Squadron 543 provided close air support in the form of simulated bombing and strafing runs.

Participating in the exercise were companies of the 2nd Battalion, 24th Marines from Chicago, Forest Park and Waukegan, the 6th 155mm Howitzer Battery from Joliet, VMA-543, HMM-776, H&HS-48 from Glenview, MWCS-4 from Chicago, in addition to the aggressor troops, the 20th Rifle Company from Rockford.

Reserves Aid Fleet

The support Reserve activities receive from fleet units is well recognized. However, during the operational readiness inspection of USS *Saratoga* (CVA-60), Reserve personnel from TACRon 40S1 at NARTU Norfolk provided important close air support services to help Regular Navy attack pilots identify and destroy selected targets.

A tank moving through the underbrush is practically invisible to a pilot flying at 10,000 feet. How can a pilot hit a target he can't see? One way to get the bombs on target is to provide

UH-34 Seahorses of HMM-776 land Marine troops during Exercise Hickory Plain, near Joliet, Ill., left. Fort Hunt High Schools' fourth annual "wash in" was held at NARTU Washington, D.C., above.

Lt. T. A. Murphy of RTU-64, NAS Willow Grove, gets double recognition for his accomplishments by receiving his NFO wings and Master's Degree at the same time, from his C.O. and X.O., respectively. Right, RAdm. Michael Lorenzo assists NARTU Washington Sea Cadets cut their commissioning cake.

the attack pilot with another pair of eyes close to the target, and rapidly and accurately pass to the pilot all the information he needs to conduct a successful attack.

The officers of TACRon 40S1, flying low over the target area, selected specific targets, reported locations, marked the target with smoke, and called in the bombers. After the strike, the controllers recorded the results of the mission. What were the results of this team effort? The selected targets were neutralized, the performance of the pilots was observed, and most important, Tactical Air Control Squadron 40S1 pilots received experience in close air support operations as they are now conducted.

Wash In

Forty-five students from Ft. Hunt High School, Alexandria, Va., held a different type of demonstration in Washington, D.C., at NARTU Washington. At a time when anti-war demonstrations seem to occur regularly, this group demonstrated their support of the Navy by holding their fourth annual "Wash In."

The group arrived early in the morning, checked out their cleaning gear and proceeded to "attack" two F-8 *Crusaders* of the Marine Air Reserve Training Detachment and an RF-8G of a Reserve light photo squadron.

Shortly, three gleaming jets stood on the flight line next to the proud students responsible for their appearance.

Afterwards, the youths saw a film depicting the type of operations these jets are involved in aboard aircraft carriers and then went to the mess hall for a well earned meal.

The students are members of the Hi-Y and Tri-Hi-Y organizations, affiliates of the local YMCA.

Sea Cadets

Two Naval Air Reserve Training Units are acting as hosts for Naval Sea Cadet squadrons which were commissioned on the same day on opposite sides of the country. On June 5, NARTU Washington provided facilities and assistance for the establishment of a Sea Cadet squadron numbering 40 young men and eleven officers. Two Sea Cadet units from the District of Columbia and drilling Naval Air Reservists attended the ceremonies. A few hours later, NARTU North Island's hangar was the scene of the commissioning of another Sea Cadet squadron.

Each of the newly formed units will drill one weekend a month and conduct a two-weeks' training period each year, using Naval Air Reserve facilities. Instruction includes classroom and practical training for advancement in rate through the Navy's first three paygrades. The training covers such subjects as water safety, personal hygiene, military bearing, moral guidance, naval history and the Navy's customs and traditions.

The Sea Cadet program is sponsored jointly by the Navy and the Navy League and now has more than 5,000 young men between the ages of 14 and 17 enrolled in its membership.

Texas to Maryland

When the Navy's Flight Test Center at Patuxent River, Md., lost some of its personnel due to recent reductions in manpower, it sent a call for help to the Chief of Naval Air Reserve Training to augment the labor force.

Three Reservists from Naval Air Reserve Division X2, Houston, Tex., responded and performed their two weeks' active duty at the test center. The three were ADJ2 R. M. Eaves, ADJ2 J. H. Reed and ADJ3 E. A. Rogers.

Captain Jack Chalbeck, commanding officer of the center, said, "The trio of Houstonians must have been handpicked." He cited the three for successfully completing engine changes on three different types of aircraft during their cruise. "We're looking forward to the services of more Reservists," he added, "particularly men of the caliber of those from Naval Air Reserve Division X2 in Houston."

Journey's End

On June 25 this WW II Kingfisher was dedicated aboard USS North Carolina at Wilmington, N.C. The journey to its final resting place took it from the wilds of British Columbia via LTV (NANews, June 1970, page 29).

New Mission

This U-2 is one of two recently acquired by NASA. It will be used to support earth resources survey programs and to conduct observations in astronomy and atmospheric physics and geophysics.

Thirsty?

During water shortage crisis, NAF Naha provided 100 unique water containers for 43 villages.

Simple and Complex

At NAS Chase Field, a home-built "Breezy" of the Confederate Air Force comes in behind an F-4.

ON PATROL

with the Fleet Air Wings

This Is a First

Patrol squadrons of NAS Barbers Point, flying P-3 *Orions*, have assumed patrol duties over the entire Western Pacific. According to the release, this is the first time that one wing, Fleet Air Wing Two, has been tasked with all of the Western Pacific, an area which covers over 18,000,000 square miles of ocean and islands.

The final Barbers Point squadron, VP-1, led by Commander H. C. Freund, relieved VP-50 in the Philippines. This completed the circle of Barbers Point squadrons extending from Hawaii to Japan by way of the Philippines, Okinawa and Guam. The circle consists of VP-4, under Commander E. J. Vaughan, operating from Japan; VP-22, commanded by Commander R. W. Case, from Okinawa; VP-17, under Commander J. M. Quin, from the Philippines; VP-6, under the command of Commander R. H. Botts, guarding the home base by maintaining surveillance of the Hawaiian Sea Frontier; and VP-1.

In covering this vast expanse, the squadrons fly long and tiring hours to keep track of ships — friend and foe alike. They also perform the vital function of search and rescue.

VP-10 CPO Flies a Milestone

AWCM Paul F. Gustwick logged his 10,000th hour in a Navy aircraft as he flew with VP-10's Crew 2. With all but three years of his career in VP squadrons, Chief Gustwick is presently the leading chief petty officer for the Commander, Antisubmarine Warfare Forces, Sixth Fleet, Det. Sigonella.

VP-4 Fathers

During their current deployment to MCAS Iwakuni, VP-4's *Dragons* have adopted approximately 60 Japanese orphans of the Yahata Orphanage, just south of Hiroshima. Squadron members take food, toys, candy — and companionship — to the children.

Under the command of Commander Evan J. Vaughan, Jr., VP-4 compiled nearly 3,600 flight hours in the first three months of its deployment.

VP-22 Rates 12 Alpha Crews

Precise teamwork is the key to an ASW Alpha crew and the Navy's patrol plane crews are tested and retested before achieving this status. VP-22 boasts 12 Alpha crews which demonstrated ASW proficiency in all prescribed exercises less than three months after deploying to NAF Naha, Okinawa.

Commander R. W. Case, C.O. of VP-22, credits the achievement to hard work and a vigorous training program within the squadron, and to squadron-wide effort and support.

A new challenge faces the flight crew — to match the double Alpha status held by Crew 12. Each member has completed all requirements for designation as an aircrewman.

MUC's

VP-45 received the Meritorious Unit Commendation for its participation in contingency operations in the Eastern Mediterranean while deployed to NAF Sigonella, Sicily. VP-45 provided antisubmarine screening and protection for Sixth Fleet units when operations were at their peak.

Shortly after the squadron received the commendation, Commander Charles F. Cook relieved Commander S. J. McArdle, Jr., as commanding officer.

The Meritorious Unit Commendation was also awarded to VP-23 "For meritorious service while participating in contingency operations in the Eastern Mediterranean from September 9 to October 31, 1970. As an element of the United States Sixth Fleet, Patrol Squadron Twenty-Three contributed significantly to the effectiveness, mobility and success of fleet operations which were vital toward maintaining peace in the Mediterranean area."

VP-23, which celebrated its 25th birthday in May, flies an advanced version of the P3B *Orion*, maintaining the capability to conduct all-weather antisubmarine warfare anywhere in the world. The squadron is commanded by Commander R. J. Campbell.

First NUC to P-3C Squadron

VP-49 became the first P-3C squadron to receive the Navy Unit Commendation when Rear Admiral Mayo A. Hadden, Commander, Fleet Air Wings, Atlantic Fleet, presented the award to the squadron's commander, Cdr. E. A. Tansey on June 1. The citation read "for exceptionally meritorious service from 14 September 1970 to 25 September 1970 during ASW operations in the North Atlantic Ocean. In the face of extremely harsh climatic conditions and round-the-clock operating schedules, the flight crews and ground support personnel of Patrol Squadron Forty-Nine carried out their highly important and most sensitive missions with outstanding skill and dedication."

RAdm. Hadden noted that the deployment had proved the capabilities and potential of the P-3C ASW system.

VP-6 Does Its Thing

Barbers Point's VP-6 has a newly created Ecology Action Task Force which has embarked on Project Abandoned Vehicle Pickup. A volunteer task force is attacking pollution on many fronts — open burning, oil and litter disposal, aircraft noise, and the recycling of many items. They hope that their action will encourage other groups to set up similar programs.

Commander William B. Castro recently relieved Commander Ronald H. Botts as squadron C.O.

ABOVE AND BEYOND

The President of the United States in the name of The Congress takes pleasure in presenting the MEDAL OF HONOR *to*

PRIVATE FIRST CLASS RAYMOND M. CLAUSEN, JR.
UNITED STATES MARINE CORPS

for service as set forth in the following
CITATION:

For conspicuous gallantry and intrepidity at the risk of his life above and beyond the call of duty while serving with Marine Medium Helicopter Squadron 263, Marine Aircraft Group 16, First Marine Aircraft Wing, during operations against enemy forces in the Republic of Vietnam on 31 January 1970. Participating in a helicopter rescue mission to extract elements of a platoon which had inadvertently entered a minefield while attacking enemy positions, Private First Class Clausen skillfully guided the helicopter pilot to a landing in an area cleared by one of several mine explosions. With eleven Marines wounded, one dead, and the remaining eight Marines holding their positions for fear of detonating other mines, Private First Class Clausen quickly leaped from the helicopter and, in the face of enemy fire, moved across the extremely hazardous, mine-laden area to assist in carrying casualties to the waiting helicopter and in placing them aboard. Despite the ever-present threat of further mine explosions, he continued his valiant efforts, leaving the comparatively safe area of the helicopter on six separate occasions to carry out his rescue efforts. On one occasion while he was carrying one of the wounded, another mine detonated, killing a corpsman and wounding three other men. Only when he was certain that all Marines were safely aboard did he signal the pilot to lift the helicopter. By his courageous, determined and inspiring efforts in the face of the utmost danger, Private First Class Clausen upheld the highest traditions of the Marine Corps and of the United States Naval Service.

Marine reservist, Private Raymond M. Clausen, Jr., was awarded the nation's highest combat decoration June 15 by President Richard M. Nixon at the White House.

The 23-year-old Medal of Honor recipient, a native of New Orleans, enlisted in the Marine Corps Reserve in March 1966 and was discharged to enlist in the regular Marine Corps in May. He took his recruit training at San Diego, followed by infantry training at Camp Pendleton and aviation schooling at Memphis which included the Mechanical Fundamentals School and the basic helicopter schools.

In December 1967, he was ordered overseas where he served as a jet helicopter mechanic with H&MS-36 and HMM-364 until August 1969.

Following a short period in the United States, Clausen began his second tour of duty in Vietnam in November 1969, with HMM-263. He was released from active duty upon his return to the United States in August 1970.

His list of medals includes the Air Medal, Combat Action Ribbon and the Purple Heart.

Raymond M. Clausen, Jr., is the 49th Marine to be awarded the Medal of Honor for heroic actions in the Republic of Vietnam.

Iron Ring Gunnery

By Rear Admiral J. R. Tate, USN (Ret.)

After World War I, Admiral William S. Sims reorganized fleet gunnery and target practice which were in a sad state. He put them on a sound basis and from this developed the orders for gunnery exercises (OGE's). This was a book put out each year by CNO which delineated the practices to be fired by each ship and squadron and the precise rules for each practice. When aircraft entered the picture, they were included. In the very early days, with only two fighter squadrons, VF-1 and VF-2, the practices were fairly simple.

Each squadron fired individual battle practice (IBP), the big one; then squadron battle practice (SBP); individual camera practice (ICP); and, finally, squadron camera practice (SCP). In 1924-25, the rules for IBP called for the towplane to tow the target at 65 knots and for each plane to make a high side and low side run from both right and left, an overhead and an underneath run. On each run the plane fired ten rounds. The rules precisely limited the angle of fire towards the towplane.

The only two VF squadrons in the Navy were at North Island. VF-1's gunnery range was from Point Loma to the border, two miles offshore, and from 2,000 to 3,000 feet. VF-2 had a similar range from Point Loma north of La Jolla, two miles offshore — also between 2,000 and 3,000 feet. Runs were made daily with one towplane and four to five firing planes. Aircraft fired in rotation, following the leader — high side, low side and overhead on the outbound leg and then high side, low side and underneath on the return leg. The VE-7SF, the first plane Chance Vought delivered to the Navy, mounted two .30 cal. Marlin machine guns on top of the cowling in front of the pilot with an optical sight mounted between them. The guns were synchronized to fire through the prop. This quite often worked but more than four bullets through the wooden prop was an excellent excuse for pilot complaint — more than five holes in any one blade called for a prop change. Those pilots who synchronized about two inches up on the trailing edge of the blade had the least trouble. Actually, very few props were shot off.

There was plenty of .30 cal. ammunition left over from WW I, and we were allowed unlimited *expired* ammunition from that source for practice. When shooting for the record, we were allowed to use current ammunition. Each pilot carried a rawhide mallet in the cockpit and standard practice when a jam occurred was to rock the wings (gun trouble), pull clear of the formation, point the plane seaward, release the seat belt, bear forward over the windshield, and beat the guns with the rawhide mallet. This often worked.

The ten shots per run taught pilots to get in close before opening fire. Shooting the towline was OK even if the target was lost, but it was something of a disgrace to bring it home on your wing after diving through it. Qualifications for an E varied from year to year but 80 percent to 90 percent hits was the usual requirement. To count hits, each pilot dipped the points of his bullets in wet paint — each pilot used a different color. On return, the targets were marked and each hole, as it was counted, was circled with a crayon. Two holes counted as one hit and a streak counted as one hit.

Each squadron umpired the other for record firing. The ammunition in the belts was carefully counted to assure no extra rounds were carried. The umpire pilot flew alongside the tow pilot to assure exact tow speed and to observe each approach. On return, the sleeve was dropped on the field, the squadron retrieved it and delivered it to the umpires for counting. There was a great stink one year when a pan of red paint and a pair of spiked track shoes were discovered in the retrieving truck. The skipper was a notoriously lousy shot and fired red tipped ammo. His crew was going to give him a good target or else.

In camera gun practice the target plane (umpire) went to 10,000 feet and the firing plane passed over in the opposite direction with a 1,000-foot altitude advantage. At the moment of pass-over, the exercise started. It lasted five minutes. After the dogfight, the photos were examined for hits and checked against a time clock appearing on the films. However, if the target plane scored hits on the attacking aircraft, the attacker's hits were cancelled.

The first year, one squadron trained three pilots who were "hot" targets. They were so good that they shot down practically the whole firing squadron. This was protested and the rules changed so that each pilot was to fight his opposite number in the other squadron. Next, the umpiring squadron protested that the target plane assigned it was a dog and claimed the throttle was backed off as it turned 200 rpm less than standard. (The rumor that it carried 50 pounds of sheet lead under the seat was never proven.) The rules were changed again. This time the target pilot was given his choice of the squadron planes, excepting the firing pilot's plane. The battle of wits continued and, the next year, the gunnery officer who was the first pilot to act as a target picked the plane of the firing squadron skipper as his. When he landed, after the firing plane had shot a full magazine of pictures of him, he said his target plane was the worst dog he had ever flown. It ran out of gas taxiing to the line, and the firing squadron said there was nothing in the rules about how much gas was to be in the planes – again, a change in next year's rules.

Langley-based F4B-4's of VF-3B carried two fixed, forward-firing .30 caliber guns, had a service ceiling of 27,000 feet and a maximum speed of 188 mph. The F4B's remained in fleet service from 1929 to 1938 and were assigned to shore stations as late as 1941.

Pilot's eye view of forward-firing .30 caliber machine gun and optical sight on a VE-7 fighter illustrates the uncomplicated state of early naval gunnery. Below, F3B-1's of VF-2 line the parking apron at NAS North Island. This was the Navy's first enlisted pilot squadron.

Torpedo-laden R6L begins its takeoff run. Below, BM-1 dive bomber of VB-1B, assigned to USS Lexington, could carry a 1,000-lb. bomb or a torpedo. One fixed-forward and one rear flexible mounted .30 caliber gun completed the armament.

First of a long line of Grumman fighters, the FF-1, below, carried one forward-firing and two rear-mounted Browning .30 caliber machine guns. Nicknamed "Fifi," this particular plane was assigned to the VF-5B Red Rippers, also attached to Lexington.

In the early days, free-gun firing was almost as ridiculous. The towplane towed the target at 60 knots. The firing plane came up abeam and fired the Lewis gun. Scores that year were based on hits per gun per minute — the writer had high score that year in the Navy. It was done this way: The pilot flew up on the target and held formation about five feet out. The gas post on the Lewis gun had been filed out for maximum speed of firing and the whole 97 rounds were fired in one long burst. What a score! Next year the rules were rewritten so that firing was done from 100 feet with a passing speed of ten knots.

Horizontal bombing was also a bit crude. Passes were made at 1,000 and 3,000 feet, up, down and cross wind. The bombardier directed the pilot onto target by pointing with his hands. The old MK 1 sight with a bubble in the center was used, altitude was set on the sighting post and the drift ring was set by guess. Ground observers were safely placed a mile clear of the targets.

Early torpedo work was done in R6L's in Norfolk. They took off with an 18" ex-submarine torpedo (which was modified for seaplane use) from Willoughby Bay, flew to the target off the ripraps and hoped to get back around Willoughby Spit before running out of gas. Time of flight — 15 minutes.

In 1929 the picture changed. *Lex* and *Sara* arrived on the West Coast. There were six VF squadrons at North Island, each with 18 planes instead of the previous 12. Dive bombing as started by Spig Wead was not a part of the role of VF squadrons and rules for competition were written.

By 1934, *Ranger* had been commissioned and *Yorktown* and *Enterprise* squadrons were still a dream. Dive bombers were now recognized as a type, and one squadron was equipped with the BM-1, which could dive with a thousand pounder (the VF type aircraft were restricted to 500 pounds).

The boys back in the Bureau were having a time each year writing up the OGE and setting rules. Each year when the OGE came out, the gunnery officers had a ball interpreting the rules to achieve the highest score. Some examples come to mind.

The tow speed of the target was kept low to conserve targets. For IBP one year, two approaches were called for, firing 50 rounds each time. One smart gunnery officer found that by making

an approach under the target and flying a close formation on the forward end, it was possible to pull up in a very nose-high sideslip and hang under the target about five feet away, and get off a full 50 rounds. On record firing, all sorts of E's were made and the type of approach was within the rules. Next year the rules, in addition to prohibiting this type of approach, stated that targets with powder stains were disqualified.

One day before camera gun practice, the umpiring squadron saw VF-5 mounting a fixed camera gun on the top wing of one of their FF-1's, pointing *aft*. An immediate protest went up — all the way to staff. The VF-5 gunnery officer said the rules merely called for the fixed gun to be bore-sighted in the line of flight — and they were in the line of flight (fixed-gun hits counted double free-gun hits). When *Yorktown* and *Enterprise* arrived in 1938, North Island was really loaded. Gunnery ranges ran all the way up the coast and out to San Clemente and down the Mexican coast — bombing targets were all over the place. The OGE now called for .50 and .30 cal. firing, and we now had inter-squadron camera gunnery practices which were wild affairs. VF-4 was the first squadron to have both gunnery and bombing E's on every plane in the squadron. The *Red Rippers* were red hot.

VF-1 got into a serious jam. Six planes making firing runs on a target above a low cloud layer drifted over La Jolla and someone fired a belt of .50 cal. into the main street. No one was hit but the resulting investigation lasted a month, and the skipper was relieved. Previously, on a torpedo battle practice, VT-1 became confused in the haze and dropped 18 torpedoes toward its own battle line — that skipper was also relieved.

The *Yorktown* and *Enterprise* air groups, at sea on a special exercise, received orders from the chief of staff at North Island to "attack the most northern group of battleships." The home fleet had just completed crossing the "J" and had become the northern group. When the senior squadron commander arrived on the scene, he queried North Island with "interrogatory most northern group." (All this coded and sent by key.) The senior squadron commander dumped both groups on his own battle line but held his squadron off and returned to North Island. The CinC blew up and demanded to know why he was being attacked by his own planes. In the resulting investigation, the senior squadron commander stated, "I received the order to attack my own ships and questioned it. On repeat of the order, I passed the word on to the other squadron commanders and let them do as they pleased. I disobeyed the order and brought my squadron home. I accept the responsibility for my squadron for refusing to obey a damn fool order given a hundred miles away from the action."

The chief of staff was not relieved but the office of CAG was set up and the role of the senior squadron commander was abolished.

Twin Lewis guns mounted in the rear cockpit of XF8C-2 give formidable appearing sting to this prototype fighter developed in 1929. Below, a large number of aircraft crowd North Island's ramp in 1932. Identifiable squadrons include VF-2, VF-3, VF-6, VS-1, VS-2 and VT-2.

Letters

Hookup

In the June 1971 edition of *Naval Aviation News* there was an interesting article titled "Vertrep" by PHC B. M. Andersen.

My concern deals with the photograph on page 12 showing an HC-6 crewman preparing for a cargo hookup. If that helo encountered turbulence or an unusual attitude (which in itself is not unusual for a hovering helicopter), then that crewman might become part of the cargo to be picked up. The cushion upon which he is lying is obviously not an anti-skid device, and a safety harness is not in evidence.

Basically, two hands are normally required for a hookup. What is preventing this man from being launched during an inadvertent (however slight) pitchup?

M. G. Kelly, Lt., USNR
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Grampaw Pettibone says: You're right, son! All you helo "Load-Hookers" take heed and wear your safety harness lest you make your first unscheduled free fall!

41-42

The May issue of *NANews* had a picture of a P2V being launched from the deck of an aircraft carrier. The caption gave the name of the carrier as *Midway*. The number of the ship in the picture is "42" which indicates that the carrier is USS *Franklin D. Roosevelt* (CVA-42), one of the three *Midway*-class carriers, but, not USS *Midway* (CVA-41).

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Nostalgia

Since I retired in 1969, I have had little or no occasion to pick up one of your fine magazines and read it from cover to cover, as I once did. In May, I suffered one of my terrible and frequent fits of post-retirement nostalgia, took the customary two aspirin, and paid a visit to the air operations office at NALF Monterey, Calif. An understanding airman promptly thrust a cup of hot, black coffee into my trembling hand and offered me his August 1970 issue of *NANews*.

To make a short story long and unnecessarily lengthen my usual prompt rate of recovery, I noticed on page 32 your caption, "An unidentified pilot with his nicknamed FM-2 aboard USS *Gambier Bay*."

You must have had some reason to have this pilot's picture in your archives because he was quite a character. He is my former roommate in operational training, D. C. "Smokey" Bennett. Shortly after this picture was taken, *Gambier Bay* was sunk. In the same battle, USS *Saint Lo*, another CVE of Task Unit 77.4.3, was sunk. Bennett's brother was on the *Saint Lo*. Both Smokey and his brother survived the double sinkings.

Well, it's time to turn the lights on in the chicken coops. My kindest regards to your staff and all my old (sob) shipmates.

W. D. McDaniel, Capt., USNR (Ret.)
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Oops

First I would like to thank you for the fine magazine you print every month. Being here in Newburgh, N.Y., on recruiting duty is a far cry from Naval Aviation, and your magazine is the only contact I have with Navy Air. Well done!

Now that the "attaboys" are out of the way, how about a "boo boo?" I would like to see the size of the arresting gear that stopped that F-4 in 60 feet (page 5 of your June 1971 edition). I think that 260 feet is a little more like it.

I imagine that ACLS is the best thing for carrier pilots since the Mirror Landing System, but, "wow"! Those pilots must have sore shoulders and laps.

I am sure it was only a typographical error, and it will be corrected.

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Fighter Aces Rendezvous

The Tenth Anniversary and Fourth Annual American Fighter Aces Rendezvous and Invitational Golf Tournament will be held at NAS Miramar, Calif., August 12-15.

Joining in the festivities will be distinguished aces and guests from the German Fighter Aces Association. Members of the newly-formed Japanese Zero Fighter Pilots Association, headed by Saburo Sakai, top living Japanese ace, will also attend.

No Offense Intended

Your description of the instrument panel in the VE-7 (*NANews*, June 1971) in such a patronizing way leaves me and, I suspect, others of my time somewhat taken aback. We who learned to fly instruments using only a bubble, a magnetic compass, airspeed meter and altimeter, and did reasonably well at it, at least knew our airplanes and what made them fly. We knew what a bubble was and that it was, in no sense, a turn and bank indicator. I have nothing but admiration for the kind of flying our pilots do these days, but we had our moments, too. As a matter of interest, I learned to fly instruments in 1929 in Panama near the magnetic equator. Hence, the dip error was quite small making the magnetic compass almost the equivalent of a gyrocompass. The advent of the gyrocompass was a great help in instrument flying in those days when flying very far from the magnetic equator. Incidentally, it was his interest in the magnetic compass and its errors that started Doctor Starke Draper of MIT on the course which led to the inertial platform.

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We have the greatest admiration for the Navy's early aviators who, while flying less sophisticated machines, led the way to the complex operations of contemporary Naval Aviation. — Editor

Capt. John Orill, chief staff officer of FAW-3, based at NAS Brunswick, Maine, presents a WW I wooden propeller to Capt. Grover Walker, officer in charge of the Naval Aviation Museum in Pensacola. The propeller was donated by Golden Eagle Paul E. Burbank, who explained that it had been made for the military by the W. H. Gunlocke Chair Company because of its knowledge of fabricating wood and its reputation for quality. Can any of our readers identify it?

VP-44 was commissioned in January 1951 at NAS Norfolk, Va., and first flew the PBM Mariner. One year later, the squadron received the P5M-1 Mariner which it flew until 1960 when it transitioned to the P2V Neptune. In 1962, the Pelicans moved to NAS Patuxent River, Md., where they began transitioning to the latest in flying ASW platforms, the P-3A Orion. During 1962, the squadron performed valuable reconnaissance missions during the Cuban missile crisis. Today, led by Commander Felix P. Gigliotti, VP-44 operates from NAS Brunswick, Maine.

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