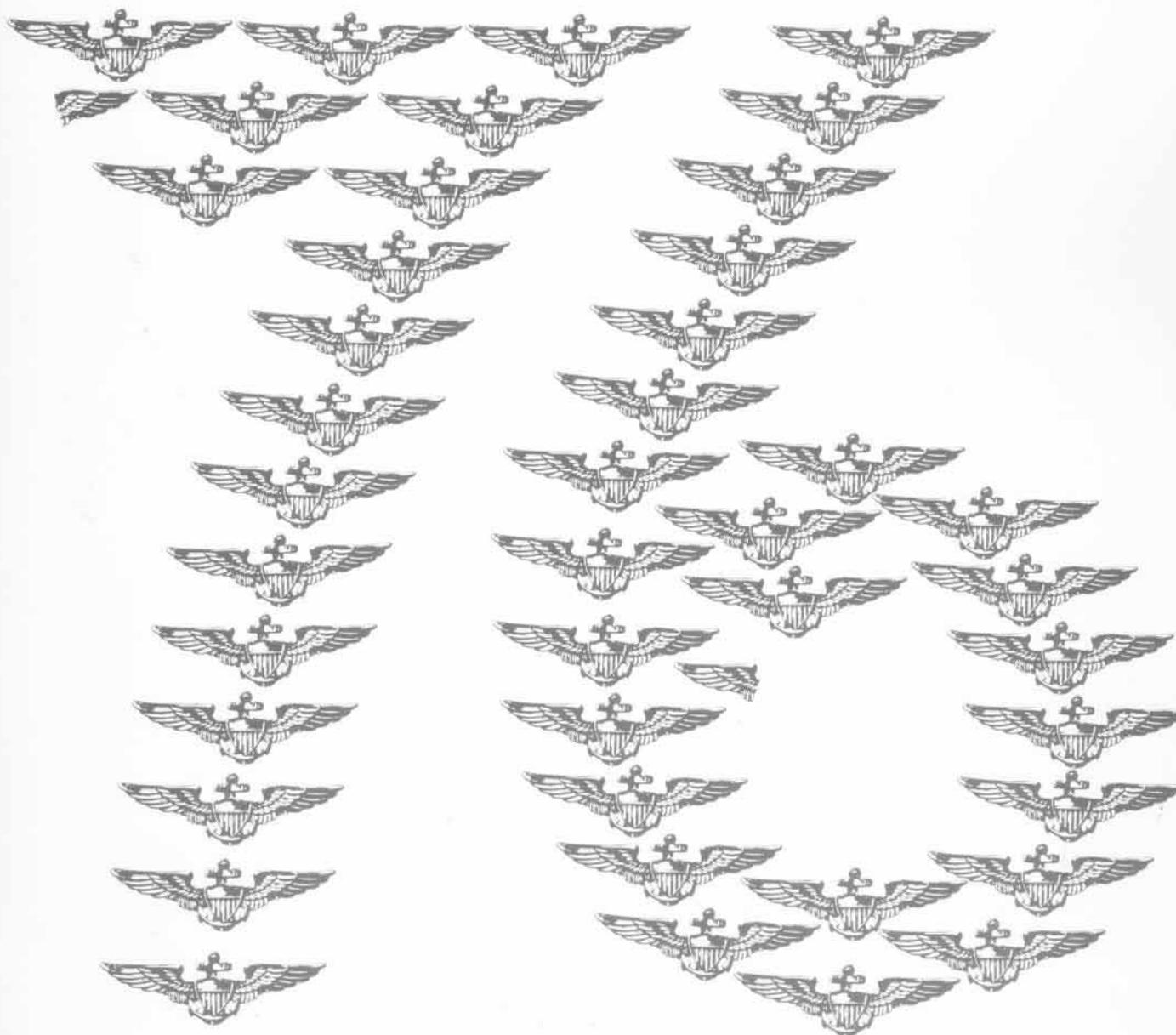


NAVAL AVIATION

NEWS

July





COVERS --- Front cover theme is inspiration of NANews' staff, executed by Art Director Charles Cooney. VA-22 Fighting Redcocks complete their bicentennial emblem on squadron A-7, back. PH2 Cobb took the picture at NAS Lemoore. Here, VF-126 Skyhawk passes in review before formidable gaze of Presidents at Mt. Rushmore, S.D. Lt. Roger Larson is at the controls. Lt. Bob Hall filmed event.

NAVAL AVIATION NEWS

FIFTY-EIGHTH YEAR OF PUBLICATION

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editor's corner

Man your Bicentennial machines. We have received many pictures featuring aircraft with Bicentennial markings. But this one of GSE equipment constitutes a change of pace. The handsome vehicles are aboard USS *Guadalcanal* (LPH-7). Lt. C. H. Collins of the ship said that, in addition to hail-



ing an historic milestone, GSE abuse has been drastically reduced. Seems to us there's a good message there.

So long, brown shoes. Ltjg. John James of VP-11 laments the passing of a sartorial item in Naval Air—brown shoes. He suggests someone "do a painting of a pair of riding boots tied together and thrown over the cockpit of a Navy fighter backwards, highlighting, or should we say lowlighting, the fading of a tradition."

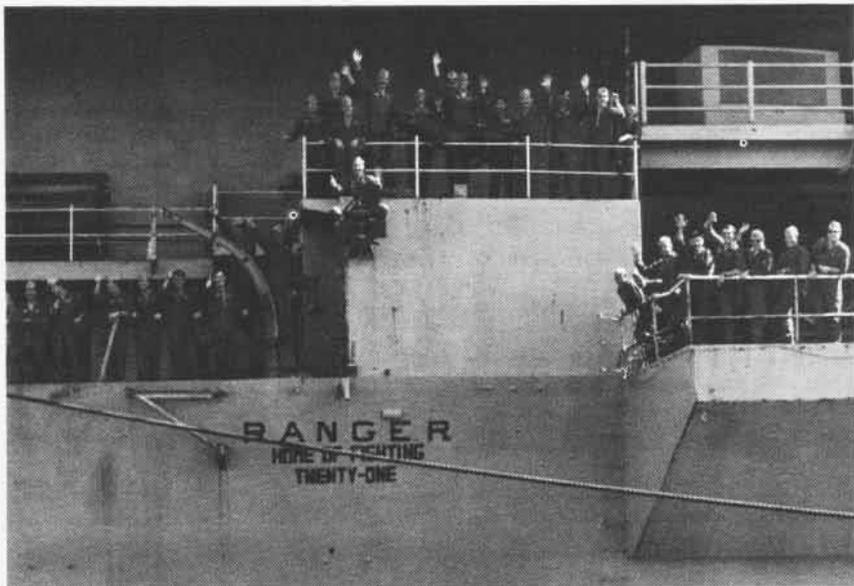
Points to ponder. A Royal Navy man visiting the U.S. during HMS *Ark Royal's* stay in Florida (page 22) praised American generosity and cited something else about our way of life. Not quite so pleasant but perhaps constructive was his comment, "I suppose it comes from your apparent need to produce, but quite often the final goal is obscured by the sweat, the dust, the confusion created by your hurriedness." Then there's this remark from *Air Clues* magazine: "A superior pilot is one who stays out of trouble by using his superior judgment to avoid situations which might require the use of his superior skills."

Bufs might be interested in a couple of recent publications. Bill Kilgrain has written *Color Schemes and Mark-*



ings, U.S. Navy Aircraft, 1911-1950. Those interested can contact the author at 3-25 Titus St., Halifax, N.S., B3M 2NB. Also, Peter Kilduff has produced a lengthy account of carrier aviation featuring *Lake Champlain, Hancock, Midway* and *Enterprise* in issue Number 12 of *Air Extra*.

Check that spare. Art Schoeni took this picture in 1924 at Medford, Ore., and Vice Admiral Jackson R. Tate, USN (Ret.), submitted it to us from his collection. It shows a DH-4B from VO-2 after it completed a long cross-country flight. Note the trusty spare tire beneath the fuselage.



Hello there. VF-21 *Freelancers* give the high sign from their ship, USS *Ranger*. That's the squadron's black panther on the rail.

did you know?

Escape from Helos

A new underwater escape trainer for helicopter crews (Device 95D, Universal Helicopter Underwater Escape Trainer) is being built at Pensacola. Aerospace physiologist Lt. Jim Brady, NATC Patuxent River, is on the fleet project team which is working on it. Project officer is LCdr. Monty Herron, Naval Training Equipment Center, Orlando, Fla.



Naval Safety Center records show that from July 1963 to February 1975, 234 helos with 1,093 occupants crashed or ditched in major bodies of water. Almost half of those who survived had to leave the wreckage from underwater. Their escape was impeded by intruding water, difficulty in reaching hatches because of the aircraft's attitude, cabin obstructions, panic, disorientation or injuries.

"The 95D will be a situation trainer," explains Lt. Brady. "That means it will not be a mockup of any specific helicopter but generally representative of all helicopters." It consists of a fibreglass fuselage and cockpit assembly suspended over a pool of water. It can be dropped into the water and rolled upside down in either a right or left roll. Various latches, handles, partitions, etc., can be changed to simulate different types of exit problems on helos. Although the device is capable of holding six people at a time, capacity will be limited to four as a safety measure during training sessions.

The Safety Center reviewed standard Dilbert Dunker training in escape from aircraft ditched or crashed in water. It found that the success rate for pilots with training was 91.5 percent but only 66 percent for those who had not had it. The Royal Navy has been using a helicopter escape trainer since 1962 and fatalities from drowning have dropped to almost nil.

The trainer is expected to be in operation at the Naval Aviation Schools Command by late February 1977.

Target Recovery System

A new type of helicopter-borne target recovery system has been developed by the aero-mechanical branch at the Pacific Missile Test Center, at the request of NavAirSysCom. The system decreases the retrieval time of BQM-34-A/E target drones which have parachuted into the ocean after a test. Since the drones weigh up to 3,500 pounds when full of water, their pickup presents unique problems in rough seas and ocean currents.

In the past, helicopters have used a pole to both help carry the drone and guide a hook into a nylon loop on the drone. (*NANews*, April 1976, page 18.) This method did not allow much flexibility and sometimes poles were stressed to the breaking point. In addition, the pole fixture was frequently damaged when dropped to the ground after the target was laid down.

The new system has a quick-release mechanism which allows the pole to be disconnected after retrieval. A stainless steel cable attached to the

did you know?

pole hook supports the load suspended from the cargo hook. The use of Kevlar Fiber B is under consideration to reduce the cable weight. The hook's weight was lightened from 5 to 2.8 pounds and the nose was lengthened. This increases the snaring maneuverability, shortening pickup time. Working load capacity was increased from 2,000 to 3,500 pounds with a safety factor of 3.5. The increased length of the pole, from 10 to 20 feet, permits a safer helicopter environment for rough sea conditions.

NADC Test Tower

Visible from all directions is the newest addition to NADC Warminster's skyline, a 150-foot red and white tower which was recently relocated from the Philadelphia naval base. It is used to evaluate the effectiveness of aircrew equipment during simulated aircraft crashes and inflight escape from damaged aircraft.

The original section of the tower, the ejection ramp, was made by the Martin-Baker Company in England during the late 1940s. The British used it to test the escape systems of Royal Air Force and Navy aircraft. The vertical section, the deceleration tower, in which crash forces are simulated, was added to the device in the early 1960s. Later, automated instrumentation was added to provide human response data.

The deceleration unit is used to assess the effects of vertical crash forces and the adequacy of protective equipment. By selecting the height from which the tower's vertical platform will fall, the crash forces and impact characteristics

may be accurately controlled and simulated. During the drop test, precise data is obtained by sensitive instruments and high-speed photography, which permits detailed analysis of the effects of the crash forces. Many safety features, such as arresting brakes, are built in to ensure adequate safety when human subjects are used.

The ejection ramp, the inclined portion of the device, consists of 150-foot-long rails on which aircraft seats are propelled upward by gun catapults and rockets to simulate the forces experienced by an aviator while escaping from a damaged aircraft. It is used to measure human physiological tolerance levels with known acceleration inputs and to evaluate the design adequacy of new seat/propulsion systems. This information is used to design effective and safe aviator escape systems, seat propulsion components and body restraints for aircraft, as well as space vehicles. It is also useful to industry for improving body protection devices in automobiles, buses and trains.

The test facility is managed by the Crew Systems Department's Facilities Branch. William Daymon, branch head, and Marcus Schwartz and William Ward, field engineers, operate the facility for the Center's specialized engineering and bio-medical personnel who conduct the experiments.



Tough New Materials

Naval Research Laboratory chemists have for several years been conducting a fluoropolymer synthesis research program which now reveals a potential for widespread application in defense and industry. James R. Griffith, Donald E. Field and Jacques G. O'Rear say their research reveals that fluorinated coatings, plastics, adhesives and laminating resins have many advantages over conventional hydrocarbon-based polymeric materials presently in use.

The widest variety of applications is in the area of coatings. Aircraft engine areas which are soiled by lubricant leaks and exhaust gases, bilge areas and the de-icing surfaces of aircraft are among the areas where promising results have been obtained. Special coatings are being developed for helicopter static eliminators and water-sensitive electronic components. In each instance, there is at least one special quality of the fluorinated coating which would be lacking if fluorocarbon were absent.

Some of the fluorinated epoxy materials are suitable for use as plastics and adhesives. They are transparent, colorless liquids which may be cured to tough plastics with the clarity of poly (methyl methacrylate). These show promise for use as windshields and canopies, among other things.

Fourth Ramjet Flight

The Navy's low volume ramjet propulsion system designed to more than double performance of tomorrow's tactical missiles made the fourth of a six-flight program on April 28 at the Pacific Missile Test Center. It streaked approximately 70 nautical miles at 35,000 feet and at speeds exceeding the muzzle velocity of a high-powered rifle bullet. But, unlike the bullet, according to Vought Corporation, it sustains its speed all the way to the target and maneuvers accurately.

While the ramjet is 15 feet long and 15 inches in diameter when tailored for air launch, it can be scaled larger or smaller for other types of missions. Vought says it can also be combined with existing guidance and warhead packages to form a complete weapons system.

Awards and Trophies

The Liberty Bell Trophy is the newest mark of excellence in the Air Reserve ASW community. It is sponsored by the Naval Reserve Association and will be presented annually by Commander Naval Reserve Forces to the reserve patrol squadron crew attaining the highest grade on a special ASW exercise during the competitive cycle.

Three Atlantic Fleet and three Pacific Fleet squadrons have been named winners of the Captain Arnold Jay Isbell Trophy for the 1975 calendar year. HS-11, HSL-32, and VP-26 were Atlantic winners while HS-2, VS-21 and VP-9 were the West Coast squadrons. The Isbell Trophy is awarded for overall excellence and superior performance in antisubmarine warfare.

Commander Lorin Brown is the 1976 winner of the Navy League's Rear Admiral William S. Parsons Award for scientific and technical progress. He is a physicist and scientific liaison officer at the Naval Research Laboratory. He is also a Naval Aviator with 131 combat missions. NRL Director, Captain John Geary, nominated Brown for the award in recognition of his outstanding contributions to the field of electro-optics.

Lt. Wayne F. Judson, MC, has been named Operational Flight Surgeon of the Year. The award is presented annually in memory of Captain Richard E. Luehrs, MC, and is jointly sponsored by Mrs. Luehrs and the Society of Naval Flight Surgeons. Dr. Judson, presently flight surgeon for HT-18, NAS Whiting Field, was cited for his service while attached to the 1st Marine Air Wing where he participated in the evacuation of Saigon.

The Britannia Award, established in 1957, was presented to Lt. Theodore J. Hammond, USMC, a *Phantom* pilot with VMFA-312, MCAS Beaufort, S.C., on May 11. Rear Admiral Roy William Halliday, DSC, Commander, British Navy Staff and Naval Attache, made the presentation on behalf of the Lords Commissioners of the Admiralty of the United Kingdom. The award was established to acknowledge the assistance that the U.S. Navy gave England during the Korean War, in training British pilots. It is presented annually to the U.S. Navy or Marine Corps student who obtains best results in air-to-air gunnery in jet fighter training.



grampaw pettibone

A Bad Flap

A pilot was scheduled for some shore-based catapult flights in an F-4 Phantom. He had considerable experience with over 2,000 total hours and approximately 1,000 in the Phantom. He had an enlisted man in the back seat during this evolution.

The aircraft's weight was to be 56,000 pounds with full flaps for the catapult launch. Preflight and start procedures were normal in all respects. The taxi distance to the catapult was very short, about 250 feet. During the taxi, the pilot performed fuel system checks and completed the takeoff checklist.

The pilot later stated that flaps were selected and indicated full down. With one exception, all observing catapult personnel stated that either the flaps were down or were not observed. The man attaching the holdback fitting said that the flaps were up but that he had no reason to believe that this



was not the desired flap position. Later examination of films, which were taken of the flight, confirmed that the flaps were up. The pilot set longitudinal trim setting and held the

stabilator in position in accordance with Natops.

Upon signal, the catapult fired. The Phantom achieved the predicted end speed. At the end of the catapult stroke, the F-4 pitched up rapidly to a nose-high attitude, apparently becoming airborne in ground effect. It also started rolling right. The pilot attempted to counter the roll by applying increasing left aileron and then rudder. The aircraft continued to roll right with full left aileron and rudder applied. In view of the "extremis" position, the pilot initiated command ejection with the secondary handle.

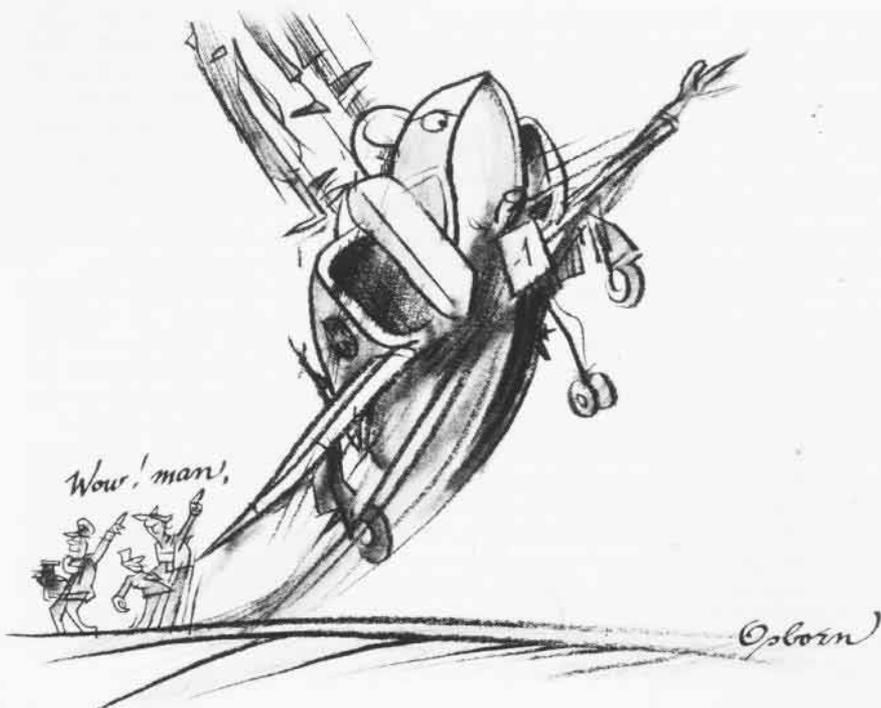
The conditions at ejection were 30 feet altitude, 20 degrees right wing down and 40 degrees nose up. Ejection equipment operated as advertised with both crew members landing near the launch site. There were no major injuries; however, the enlisted passenger sustained minor bruises. The aircraft continued briefly after ejection, reached a peak altitude of 200 feet and crashed in a wooded area one-half mile from the launch site. It was a total loss.



Grampaw Pettibone says:

Holy Hannah! I have never seen a more screwed up mess than this operation. These machines do not fly well when the end speed calls for a flaps-down configuration and the flaps are actually up! There were many personnel involved who didn't understand their duties during this sequence—the plane captain was not F-4 qualified, the catapult officer had no previous F-4 launches and was not being supervised by a qualified F-4 launching officer, the aircraft inspector was to check the flap position prior to launch (he didn't know that!), etc.

This looks like a poorly planned, poorly briefed episode which ended in the needless loss of an aircraft. This doesn't excuse the pilot. He committed the first big error when he didn't put down his flaps. But, he sure didn't get help from the others.



Death Wish

The CV was in the process of re-qualifying and refreshing air wing pilots. During the at-sea period, deck time was allotted to qualify several visiting RF-4B pilots. For the *Phantom* drivers, it would be their first try at night carrier landings. It was dark, with no moon, and a relatively steady deck.

One pilot was consistently settling in close, requiring power calls to get aboard. After a trap and a waveoff, the pilot again began to settle in the middle. The LSO called, "You're low." The pilot added power but attempted to hold the ball up with his nose, causing the *Phantom* to decelerate. At the in-close position, he was still slightly low and slow. A power call was given, followed by another. The air wing LSO hit the pickle and the wave-off light illuminated. The controlling LSO was screaming for power as all but the green approach light on the plane disappeared below the round-down. The LSO's radio was dead and so, but for inches, was the pilot. Somehow he was able to keep it flying.



Grampaw Pettibone says:

Holy smokes! This incident was passed to me by a young aviator in the squadron. The lad went on to say, "Working aircraft too close when they are not set up is unwise. They should be waved off early enough to avoid situations like this one. However, the pilot who depends on a power call to keep him off the ramp may well remember that there are no radios installed in the net."

Those words are so good to my ears, I believe I might recommend this lad as my relief.

Sad Story

An A-4B departed a naval air station for what should have been a routine cross-country training flight. The flight had been requested, approved, briefed, planned and filed as an IFR cross-country training flight to a mid-west NAS. The pilot was cleared IFR at 31,000 feet, but very shortly after takeoff he cancelled his IFR, report-

ing that he had a compass malfunction and would proceed VFR. Approximately one hour later he requested and received a change of flight plan to an Air Force base over 900 miles away and filed for an en route time of 2+00 hours with 2+30 hours of fuel remaining.

There was no further communication between the pilot and control agencies for the next hour and 20 minutes. Then he requested the winds at 35,000 and 40,000 feet.

Approximately 2+30 hours after refiling in the air, the pilot contacted the control tower at the destination field and informed them he was 15 miles out and requested landing instructions. He also reported fluctuating fuel pressure and requested the status of the Vortac serving the field. The tower advised him that the Vortac was down for maintenance and that a Notam stating it would be out of service was sent the day before. The pilot then requested a DF steer and the tower controller gave him a heading to the field.

Some 10 minutes after initial contact with the Air Force tower, the pilot reported a flameout and indicated he would not be able to make the field. The tower informed him that there were no auxiliary fields near his position and that the bailout ejection area was ten miles northeast. At this time the pilot informed the tower that he

was passing through 9,000 feet. A short time later the aircraft crashed in the desert nine miles east of the AFB. The pilot ejected at an estimated altitude of little more than ten feet above the ground and was fatally injured.

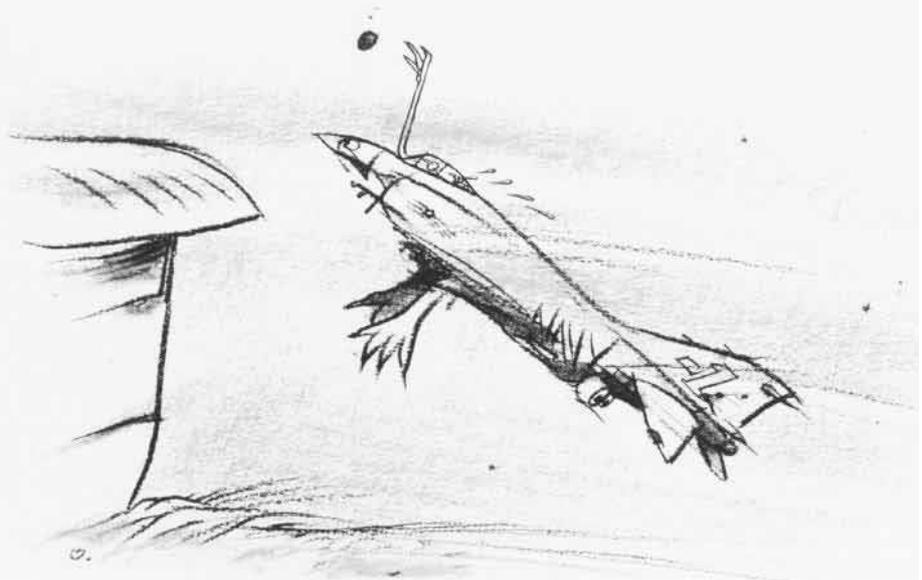


Grampaw Pettibone says:

Great balls of fire, what waste! This well-trained and experienced lad made some real bad moves on this flight and, after they accumulated to the point of no return, he made the fatal mistake of staying with the aircraft until he was too low to eject safely.

Most of us have committed errors hard to explain, but this pilot's decisions from takeoff to flameout are beyond reason. Here's a pilot whose demonstrated ability and personal conduct were such that his cross-country request was approved without reservation; yet he cancels his instrument flight plan just after takeoff, proceeds VFR through APC, with insufficient fuel and no notam info, changes his flight plan to a field several hundred miles away and overflies good en route fuel stops trying to make his new destination.

Poor judgment and lack of professionalism were the primary factors in this accident. Several Navy and FAA directives were violated; but neither Natops nor any other publication ever was written to take the place of a pilot's judgment. (August 1964)





By Commander Rosario Rausa



It may not resemble a college campus but there's a whole lot of learning going on at VS-41. A fleet replacement training squadron, the North Island-based *Shamrocks* have been operating at maximum capacity transitioning S-3A flight and ground crews. Eight squadrons have channeled or are en route through VS-41. By 1977 three more will make the journey before joining the fleet.

At the hangar, in the classrooms, or in the building which houses the flight simulators, it seems like VS-41's people are in a constant state of motion—on the way to or from lectures, briefings, flights or what have you. On the ground, in the air and, some would say, at a midway point in between, folks are on the go. And when they're not hustling from one place or another, students keep their brains plenty busy absorbing the prolific flow of data so inherent to the grim business of antisubmarine warfare.

That midway point, by the way, is the weapons system trainer. It's a formidable, perhaps ominous, looking chamber held aloft by angular hydraulic arms. These permit the WST to tilt and turn through a "flight." In a way, the WST typifies activities at the squadron. Extremely valuable as a realistic instructional device, it is up

and operating six days a week from eight in the morning til ten at night. Technicians perform maintenance on it during the remaining hours.

Both necessity and desire dictate that students acquire a level of ASW knowledge which measures up to the advanced technology embodied in the *Viking* itself. The terminology of modern ASW hints at its sophistication: datum search, convergence zone, fly-to-point, hyperbolics, probability contour and gin track are examples.

The Lockheed-built aircraft is a highly regarded flying machine and a superb platform for the sub-hunting mission. One lieutenant commander student with 3,000 hours in the S-2, reputable predecessor of the S-3, described the *Viking* as a "... tremendous airplane. It handles well, is no harder to fly than the *Tracker* and no doubt can find, track and destroy any known alien sub, no matter how fast or deep that sub goes."

The *Viking's* mission is multifold. It must provide barrier force protection, conduct area sweeps — sanitizing the seas for allied interests—and make contact identifications, rapidly and accurately. It certainly has the equipment to do so.

Explains Commander Bob Whitaker, the *Shamrocks'* commanding

officer, "The S-3 represents a quantum jump from the S-2." While the *Tracker* was equal to the task of detecting diesel-powered subs, it had difficulty with nuclear-driven types.

The *Viking's* four-man crew consists of pilot and copilot up front. Behind them are the sensor operator (SENSO) and the tactical coordinator (TACCO). The pilot is the mission commander and runs the overall show. The copilot has so many ASW-related functions, especially involving operation of nonacoustic, communication and navigation equipment, that he does not get much stick time. This has caused dismay among those assigned to that right seat. Some units, in fact, are experimenting with TACCOs in the copilot's station. However, the *Viking* was specifically designed so that he, the copilot, would have major ASW duties. His handling of them is crucial to the success of a mission.

The SENSO, normally an AW (aviation ASW operator) operates the acoustic equipment. His station is aft

of and separated from the pilot by a partition. The SENSO has a pair of television-like cathode ray tubes, one above the other, and a computer-type keyboard which juts out slightly over his knees. Adjacent to him, the TACCO mans what might be called the master chair. If the pilot is the C.O. of the mission, the TACCO is the operations officer. He directs the tactical activity and is the only crew member who has all the information available to him on demand. He is the pivotal conduit through whom the data flows continuously on a mission. He must be fully capable of interpreting that data, reacting decisively to it and initiating proper action. In the long run, though, success on an ASW mission is dependent on total crew coordination.

One VS-41 instructor condensed the antisubmarine warfare mission into a few words. "The whole basis for ASW," he says, "boils down to selecting the best sonobuoy pattern for a given situation." That's a simplification perhaps but the dispersal and monitoring of buoys can make or break a mission. Sixty cylindrical chambers in the lower side of the *Viking's* fuselage hold the sonobuoys. The sonobuoy, of course, is a miniature floating radio transmitter with a hydrophone suspended below it. The hydrophone picks up sound in the water which is transmitted back to the aircraft. Vanes on top of the S-3's buoys spread out upon release, stabilizing the device in flight. They can be released from low or high altitude.

The heart of the *Viking* is the Univac 1832 general purpose digital computer. Built to withstand the stress and strain of carrier work, it processes operational, system test and weapons system support software programs. The Univac records each event of the flight from launch to recovery. It can actually check out equipment in flight, isolating and "reporting" faulty circuits. It also helps manage ordnance and sonobuoy activity. In conjunction with the autopilot and integrated systems, it allows the pilot to fly "hands-off" and even releases the sonobuoys in patterns designated by the TACCO.

In effect it can do a thousand things. It maintains a library of tactical data, helps define unknown contacts, and can inform the operator whether a sea or airborne contact is a threat or friend. Ask it what the



Viking flyer reviews some technical data from pocket checklist shortly before manning aircraft, above. The S-3A's MAD boom extends from and retracts into tail section, below.



salinity content in the waters 50 miles west of Hawaii is and the answer rapidly appears on the cathode ray tube, enscribed in the pea-soup green color of modern-day electronics. Press the proper buttons and it will draw a coastal map of southern California on the CRT.

The RD-348 tape transport cartridge contains the programs. Before a flight, it is collected from the Tactical Support Center — a super intelligence bank situated aboard ship or on a shore installation. Inserted into the digital magnetic tape unit in the S-3, it is soon at work recording events, providing information. After a mission, aircrews can study in detail, through diagrammatic presentation in the TSC, how the flight went. Lines and symbols denote precise tracks, buoy patterns, contacts — virtually every operational incident which occurred on the



flight. At VS-41 in particular, this training feature is extremely valuable.

Space precludes fully defining the *Viking's* onboard gear. In brief, it includes an acoustic data processor, keenly sensitive to sonobuoy output signals, which time-integrates signals and presents them in what is called gram format to the SENSO and TACCO. Continuously updated information permits the SENSO to record signal buildups. With help from the passive acoustic classification program, he can readily identify targets of interest.

The sonobuoy monitoring and control system consists of a receiver, command signal generator and an analog tape recorder. The CSG employs the aircraft's UHF transmitters to direct sonobuoys into certain modes of operation. The recorder notes buoy receiver outputs and other related data.

Nonacoustic sensors provide alternate information to *Viking* crews. The AN/APS 116 is a high-resolution radar especially built to find small size targets even in high sea states. An impressive complement to the radar is FLIR — forward looking infrared.

VS-21 Viking flies over San Diego, above. Squadron is one of eight which trained with the Shamrocks. VS-41 S-3As are parked at NAS North Island flight line, left. Opposite, ADJ3 Larry Weaver trains ADJAN Greg Framer in engine trouble — shooting.

It can penetrate haze and light fog. It "sees heat," functions through a lower fuselage mounted turret arrangement and presents a fair picture on the CRT. These elements bolster the *Viking's* surveillance capabilities.

A retractable MAD — magnetic anomaly detection — boom extends horizontally from the tail. MAD remains an excellent method of localizing and classifying submerged subs. Electronic countermeasures equipment, with wing-tip antenna arrays, gives quick, automatic and omnidirectional bearing information on various contacts.

CAINS is the carrier aircraft inertial navigation system and, with Doppler ground velocity and supporting subsystems, keeps the crew informed as to its precise location. It can be re-aligned in flight, a vital asset considering the S-3's range — 2,500 miles.

The *Viking* carries an assortment of weapons in a variety of combinations. Attack stores are transported in two independently-operated bays. Stores include torpedoes, mines and special weapons. Additional ordnance can be carried on the two wing pylons. Rocket and flare pods or cluster bombs are also in the inventory.

Through INCOS, the integrated control system, crew members can, theoretically, "talk" to each other. For example, the copilot can indicate to the computer, and to the other crewmen, a contact location and use a track-ball to move an electronic hook across his display until it circles the contact symbol. The computer memorizes the contact and retains it so that, on command, others can recall it.

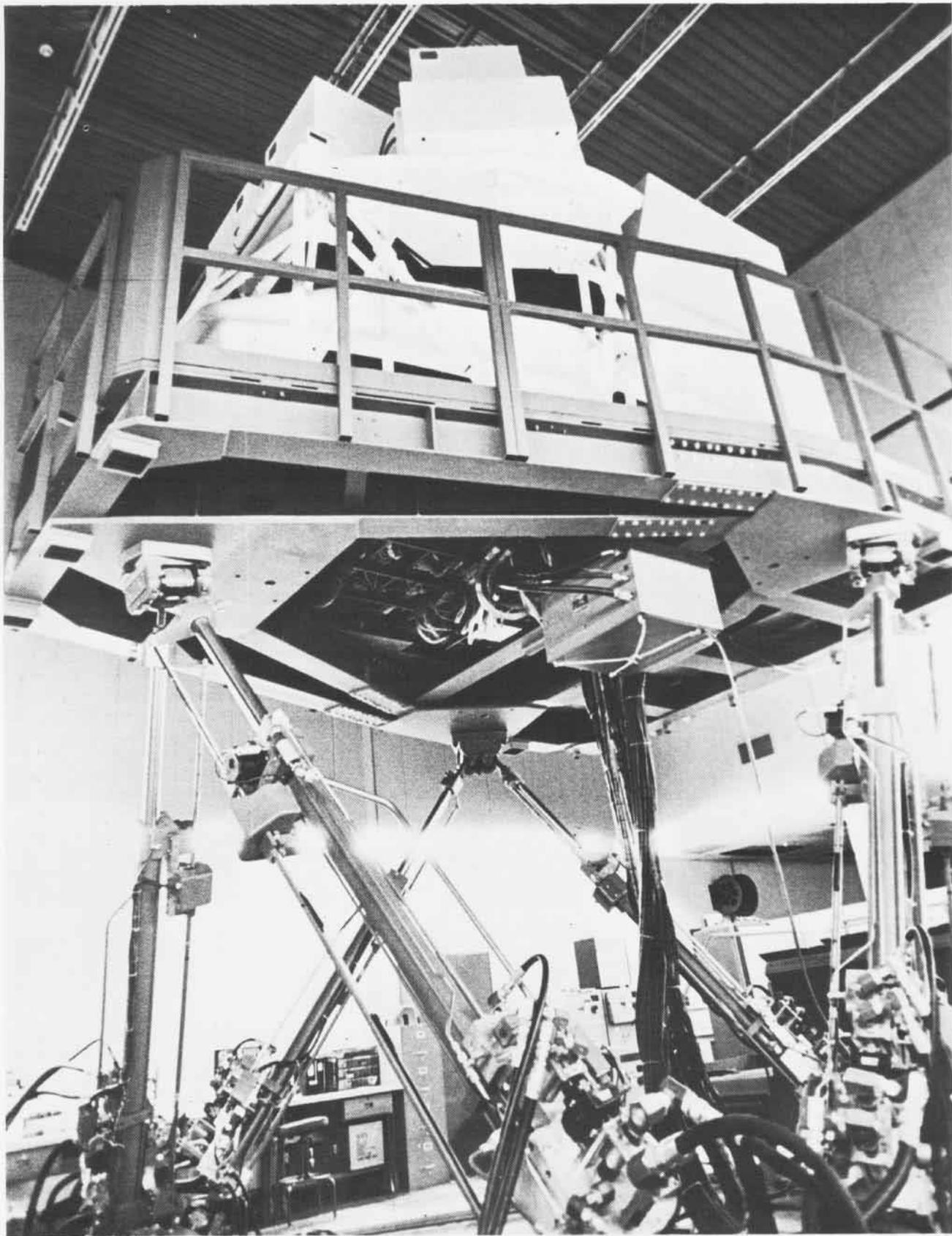
The S-3 usually operates alone but its communication system, working with the computer, can transfer data

to other units. It can also report weapons system performance through the digital data-link.

Clearly, operating this broad spectrum of complex equipment requires expertise. VS-41 endeavors to impart that expertise to its students. "The workload is heavy and constant," admits Cdr. Whittaker. "As with any new airplane, there have been difficulties. Since our instructors didn't have fleet *Viking* experience when the transition began," he explains, "it took a lot of extra effort to do the job. But we're up to speed and moving along well." The Skipper figures his squadron will be handling a full volume of students for at least the next two years, getting the fleet and the *Viking* squadrons fully mated.

"The quality of the officers and enlisted personnel who train with us is impressive," says Whittaker. "And the





attitudes of both students and instructors has been very positive. Of course, the S-3 has a lot to do with that."

Maintenance personnel like the *Viking*, too. Most repair actions can be effected working from deck level. Techniques implemented in the S-3 permit fault isolation of the electronic equipment in the air as well as on the ground. Through the inflight performance monitoring system, for example, an automatically initiated computer program periodically determines equipment operability. If a failure is indicated the operator can command, through INCOS, that a certain diagnostic routine seek it out. Data is then stored on magnetic tape and is instantly available during flight and can be reviewed when the *Viking* is back to the flight line. The versatile aviation shop test system—VAST—is available through the intermediate level maintenance shops to assist in repair.

"As with any new plane," explains Cdr. Whittaker, "we've had maintenance problems. We cannibalized more than we wanted to in the past, but parts are more available now. Our maintenance people have learned a lot and come a long way in the last several years."

While aircrews do their thing, the ground forces train at FRAMP, the fleet replacement aircraft maintenance personnel training department. About 1,000 completed courses last year alone. Instruction is tailored for individual ratings and on-the-job training is emphasized as much as classroom study. Computer-assisted learning is available, too. In individual booths, the technicians can view presentations on a TV monitor, receive and answer questions, and be graded on their knowledge. A balance between book and in-the-shop learning is sought so that when Group IX personnel report to their parent units, they are ready to work on and keep their own *Vikings* flying.

Testimony to the S-3's flight characteristics was voiced by Cdr. Whittaker. "Earlier this year," he said, "a group of recently designated aviators reached the carrier qualifications phase, went to the boat and, without incident, made their day and night traps. They had a good boarding rate to boot, which is impressive."

Alas, for the pilots! Before they man their jet-powered charges, they



VS-41's weapons system trainer is "flown" about 14 hours a day, six days a week, and is a vital part of the syllabus, opposite. Shamrock's Bicentennial bird features simple but dramatic patterns on a bright white background, top. Above, Cdr. Bob Whittaker, Shamrock skipper, defines the S-3 as a quantum jump from its worthy predecessor, the S-2 Tracker. Below, the copilot makes the final cockpit checks before taking the *Viking* for a hop.



must complete "workbook city." VS-41 instructors formulated this course. It's a sort of self-study program based on Natops. Eventually all four aircrewmen will combine flight with ground instruction on a daily basis.

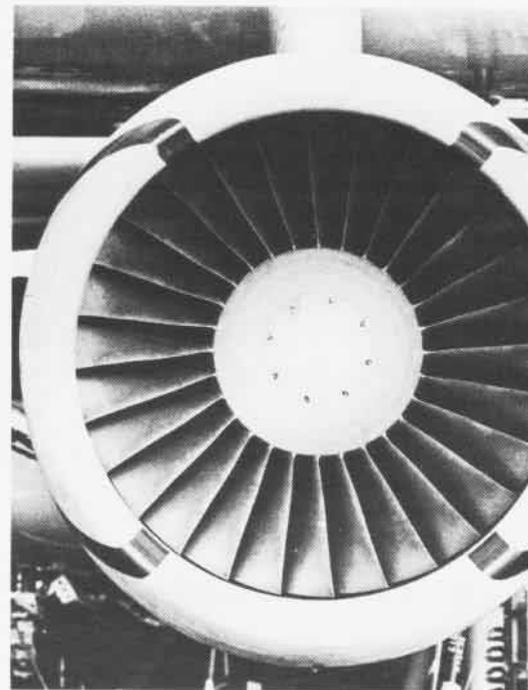
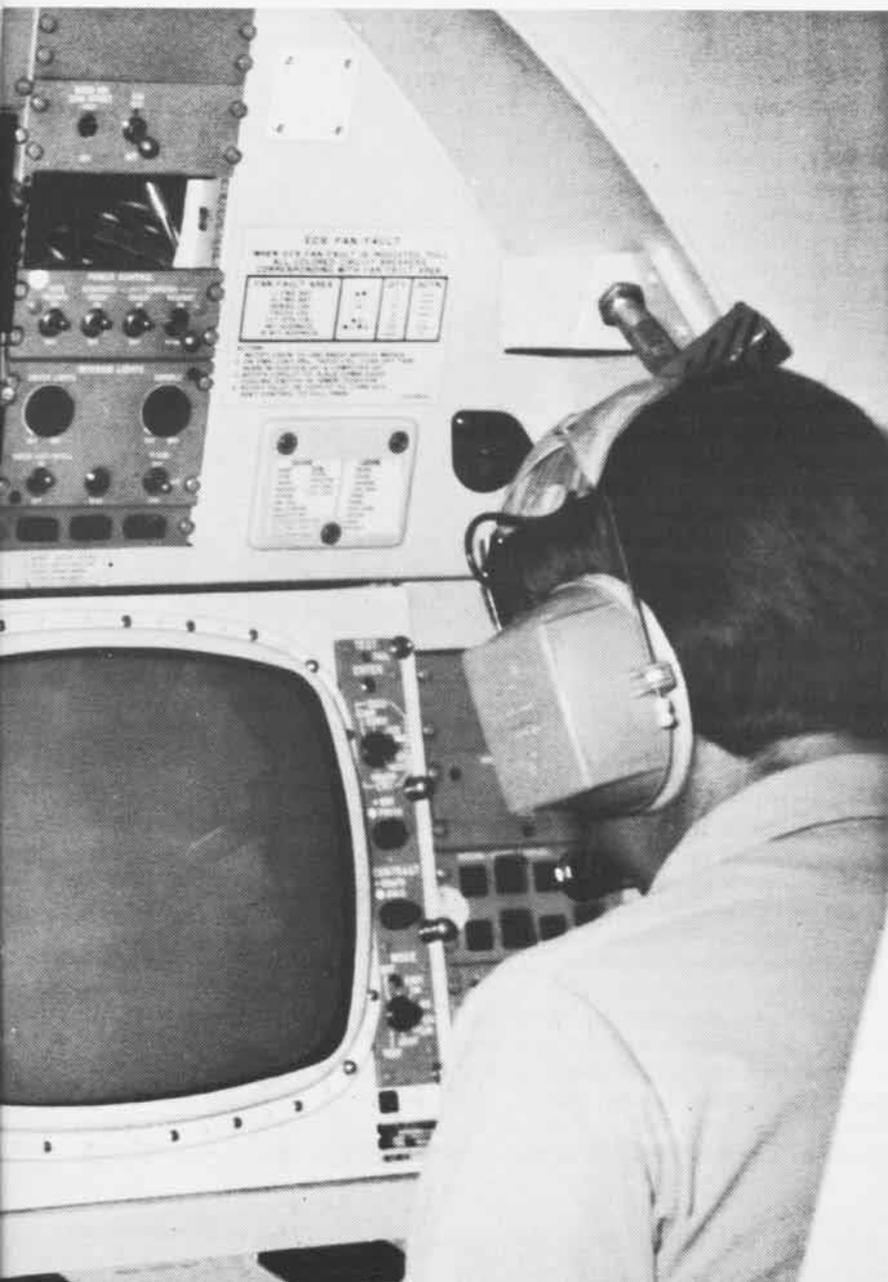
Operational flight and weapons system trainers are a major part of the syllabus. The flyers actually sign out for the WST on a yellow sheet and time is recorded in log books. The SENSO and TACCO stations are on the floor level. The pilots climb a ladder to the cabin. All stations are replicas of the real-life *Viking*. Engine sounds and that momentary rise and fall over the shuttle preceding the catapult shot come pretty close to the real thing. Says an instructor, "One of the best features of the WST is that we can 'freeze' it, stop the action, so to speak, to make a point or clear up an issue."

Unlike most of its ASW type predecessors, the S-3 can fly acrobatic maneuvers. It can loiter in a target area at 160 knots and remain aloft for more than seven hours although most missions are briefer than that. Its GE TF-34-GE-2 engines provide a 450-knot dash speed whenever necessary. Although some flyers are not fully content with the seat — "After a couple of hours airborne it gets pretty hard," claims one. The cockpit provides excellent visibility characteristics. (Modifications to the seat cushions are under way and may be implemented to soften things up for the crew.) The McDonnell Douglas ESCAPAC seat has a zero-zero capability should ejection be necessary.

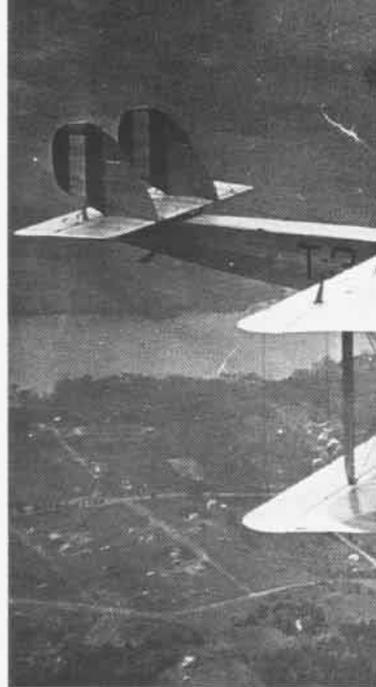
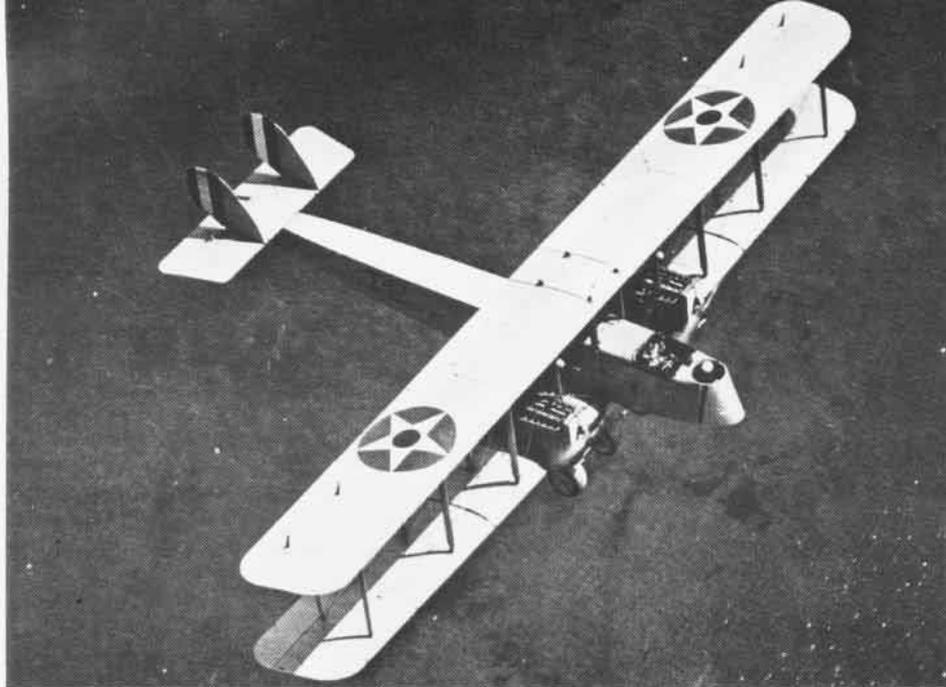
Generally, it takes half a year for students to get a "degree" from VS-41. Pilots will accumulate about 55 flying hours. Each aircrew member will receive between 650 and 725 hours of ground training.

A sign near the steps of one of its buildings proclaims VS-41 as the *Viking Varsity*. That might be a nonchalant way of putting it. There is no question, however, that both instructors and students of the S-3A *Viking* are keenly aware of their responsibilities in the solemn endeavors of anti-submarine warfare. They know there's a whole lot of complex and difficult learning going on at VS-41. But that's the way it has to be.





Top left, student flyers get instructor guided tour of S-3A. VS-41 Vikings on formation hop pass over San Diego, top. Above, head-on view of Viking TF-34-GE-2 engine. Left, Lt. John Eger is attentive as prospective S-3A TACCO goes through his paces in simulator.



QUANTICO

San Diego

Yuma

Tucson

El Paso

Marfa

Del Rio

By Major John Elliot, USMC (Ret.)

Now that overseas mass transfer by air is commonplace, let's consider the problems and triumphs of the first mass coast-to-coast aerial delivery of airplanes.

Nine large twin-engine Martin aircraft (MBT/MTs) had been acquired by the Navy in 1920 for use as torpedo planes. By October 1921, four (A-5717, A-5718, A-5719 and A-5720) were assigned to the Pacific Fleet Torpedo Plane Squadron. The remaining five (A-5711, 12, 13, 15, 16) were assigned to the Marine Flying Field, Quantico, Va. By February 1923, operational accidents had reduced the Quantico complement to two. It was decided that the Marine Corps should operate all the MTs. Plans were made

for aerial delivery to Quantico by Marine Corps personnel.

Eight officers and five enlisted men went to NAS San Diego, Calif., in April 1923 to ferry these aircraft to Quantico. Every assistance was given by station personnel and the operating squadrons at the station, although some of the Navy types were betting money that the four birds would never get to the East Coast. As it turned out, the doubters came very close to being correct.

After a routine inspection on April 17, the four MTs were tested and accepted. The next day was devoted to loading spares and emergency rations and making final tests. T-4 (A-5720) developed radiator trouble but was re-

paired during the night. (Trouble with the radiators was to be a chronic problem with the Martins.)

Lacking radio communications, a code was devised to convey messages in the event of a crash. It was based on the position of the crew in relation to the aircraft.

T-1 was to lead the formation.

In T-1 were Maj. Roy S. Geiger, Capt. Francis P. Mulcahy and GySgt. Walter L. Pounders; in T-2, Capt. Arthur H. Page, 2nd Lt. Guy B. Hall



Kansas City

Indianapolis

Dayton

Moundsville

Washington
Quantico

OR BUST

Dallas

San Antonio

and 1st Sgt. Harry L. Blackwell; in T-3, Capt. James E. Davis, Capt. Russel A. Presley, 1st Sgt. Irwin M. Karnes and GySgt. William C. Groves; and, in T-4, Capt. Louis E. Wood, 1st Lt. Walter S. Hallenberg and GySgt. Henry D. Alcorn. Each aircraft carried two pilots and one mechanic although there was only one set of controls. The fourth man in T-3 was a carpenter.

The Martins took off from North Island on April 19 and headed east.

Two DH-4s from the Fleet Observation Squadron escorted them through the passes to the Imperial Valley. Clouds were just lifting over the mountains and weather reports were good. A loose formation was taken and, after attempting to get across on the original course, T-1 turned the flight south paralleling the hills until it came to a pass followed by the San Diego and Arizona Railroad. After about 40 minutes, T-1 developed problems, broke formation and went down among many large boulders along the railroad tracks in the vicinity of Tacate, Baja, Calif. The terrain looked rugged but a successful landing was made. T-1 signaled that everything was OK. But it had a burned-out gen-

erator and exhausted battery.

The remaining aircraft broke formation because of the clouds and continued on separately. T-2 continued up the pass, attempting to follow the railroad, but ran into more clouds. After it circled for about an hour, the clouds lifted sufficiently for it to follow the San Diego and Arizona Railroad tracks to El Centro and the Southern Pacific to Yuma, Ariz. T-4 landed first at 1100; T-2 and T-3 a few minutes later. During the landing, T-4 ran over a Ford which the driver, in his excitement, had left in the middle of the field. The flying machine severed the top of the car and broke six of its lower right wing ribs.

After GySgt. Pounders replaced the

generator and battery on T-1, the engines came to life. (Both Maj. Geiger and Capt. Mulcahy had failed to look at the ammeter from the time they took off.) Mulcahy taxied among the boulders to a spot which would give him the longest possible run downhill and was about to gun the engines when Geiger asked, "Young man, are you at all uneasy about getting off?" With that encouragement, a successful take-off was made and T-1, consequently, had a better trip over the hills than the others because the ceiling had lifted to over 6,000 feet.

Mulcahy, in a letter to the author when he was a lieutenant general, recalled, "On this leg and from here on, we followed the track of the Southern Pacific as it was dangerous to attempt to cross the utterly uninhabited deserts of Arizona, New Mexico and western Texas."

All four planes left Yuma at 0745 and arrived at Tucson together, about three hours later. T-4 had a broken wire which was repaired. Ts 1, 2 and 3 launched and waited for T-4 for about ten minutes. Then they received a message from T-4, "Grounded, plane will follow. Do not need assistance." With a strong tail wind and the Southern Pacific as a guide, the trio headed for El Paso.

At Deming, N.M., the flyers encountered a sandstorm at 7,000 feet. It lasted until they were just outside of El Paso. The ground was always visible and the sand did not bother the flying, but it did cut their faces and fill their clothes. They were covered by the time they reached El Paso at 1640. They landed into 40-mile winds. After changing a burned-out generator, T-4 arrived at 1100 on the 21st.

That night, Pounders and Blackwell crossed the International Bridge into Juarez, old Mexico, for an evening liberty. No trouble was encountered entering, but on their way back, the American authorities put them in jail for being over the border in uniform without a passport. They remained incarcerated for two hours before the officers heard what had happened and arranged their release.

The original plans were to go from El Paso to Fort Sill via Pecos and



Maj. Ray S. Geiger was one of the pilots in T-1, the lead aircraft. Journey began April 19, 1923, and ended on April 30.

Sweetwater, but information furnished by the air service officer at El Paso reported those two fields were seldom used and were in very poor condition. Accordingly the route was changed to San Antonio via Marfa and Del Rio.

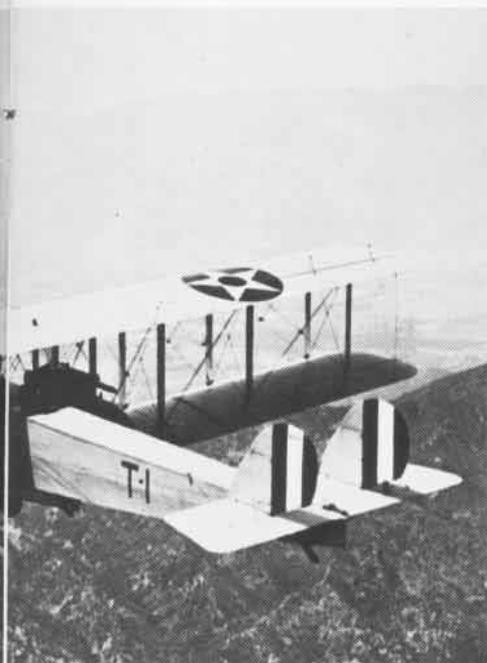
All planes left El Paso at 1330. The takeoff was not without thrills as the Martins were heavily loaded and the heat prevented running the engines at full power. All settled a bit after taking off and it was very difficult to keep them flying because of the altitude and the thin heated air. The engines ran between 180 and 210 degrees which precluded climbing to a safe altitude. But all landed safely at Marfa, Texas, at 1620.

At Marfa, 5,000 feet above sea level, they felt some uneasiness about taking off. The following morning was cool and only a slightly longer run than usual was noted. They departed at 0730 on April 22 with the intention of going to San Antonio. The next 50 miles were the worst of the trip. Only one plane could get over 500 feet altitude and two planes went down to 25 feet in the Alpine Pass — because of the currents over the mountains and because the engines were running hot.

About this leg, Mulcahy said, "The engines were running over 200 degrees most of the time with a propensity to boil if you used any more power than enough for very slow cruising. In crossing the continental divide in the vicinity of Marfa, we were flying just



1923 Date	Type of Machine	No. of Machine	Duration of Flight	Landings	Flight Hours	Pilot
18	MBT	5718	1:25	1	15	Hall
19	"	"	2:35	1	17	Page
20	"	"	2:55	1	18	Hall
"	"	"	3:05	1	19	Page
21	"	"	2:30	1	20	Hall
22	"	"	3:20	1	21	Page
23	"	"	3:15	1	22	Hall
24	"	"	3:10	1	23	Page
25	"	"	3:35	1	24	Hall
26	"	"	2:30	1	25	Page
27	"	"	3:35	1	26	Hall
28	"	"	3:00	1	27	Page
29	"	"	1:15	"	28	Hall
"	"	"	2:00	"	29	Page
30	"	"	1:45	"	30	Hall
"	"	"	1:05	"	31	Hall
Total			41:40		31	Flights



Capt. F. P. Mulcahy also flew in T-1. Below, excerpt from log book neatly chronicles flight time for Hall and Page in T-2.

barely above the ground along a railroad. I had to stay on one side of the tracks until the ground started falling away to lower altitude because I couldn't climb over the telegraph wires without boiling the engines."

At Lenox, the reverse happened. All planes went to 2,000 feet in less than two minutes. About ten miles beyond Del Rio, T-1 led the formation back and landed — a change in wind made reaching San Antonio doubtful due to their oil supply. At 1050 they landed on the R. E. L. Michel Drill Grounds. Both T-2 and T-4 had radiator leaks which were repaired.

A strong crosswind made the take-off very difficult but they departed on the morning of April 23. With a good tail wind and the Southern Pacific as a guide, they made it to Kelly Field in two and a quarter hours. A planned overhaul was badly needed. The starboard engine on T-2 was changed and six of the eight radiators had to be taken off because of leaks. These were repaired by the air service intermediate repair depot. Takeoff was made in early afternoon the following day. An uneventful flight of 3 hours and 15 minutes to Dallas was then completed.

At Dallas, storm warnings delayed departure until the 25th. After flying through several rain squalls, the planes ran out of bad weather and arrived at Tulsa in the afternoon. They landed on a small privately-operated field.

At 0820 the following morning they were off. By staying just below the

clouds, they had a perfect trip — without a bump. A nice tail wind helped get them to Kansas City where they landed at the Army Reserve Corps Field, two hours later.

Next day, they made an uncomfortable three-and-one-half-hour trip in a driving rain. At times the precipitation blanketed everything. At no time could they climb above 300 feet and still see. Only by constant vigilance were the wingmen able to observe the leader. All hands were thankful when they reached Belleville and landed at Scott Field. Three radiators were replaced with ones that had been shipped ahead from Quantico.

The storm passed but delayed departure until after lunch next day. They landed at the Army Reserve Field at Fort Benjamin Harrison, Indianapolis, at 1635.

They left Indianapolis early on April 29. After refueling at Wilbur Wright Field in Dayton, Ohio, all four planes took off for Moundsville, W.Va., where they arrived at noon.

The final day of the trip, April 30, began at 0845. T-2 was forced down at Harpers Ferry with a water pump leak, but signaled, OK, will follow. Ts 1, 3 and 4 arrived in Washington at 1100. They were greeted by the Secretary of the Navy, the Commandant Major General, Lejeune, the Chief of the Bureau of Aeronautics, the OinC of Marine Corps Aviation and other Marine Corps officials. Leaving Washington at 1130, the three aircraft arrived at Brown Field, Quantico at 1215 where they were greeted by Commanding General Brigadier General Smedley D. Butler, his staff and the post band. T-2 arrived at 1305, completing the first successful cross-country flight by a group of aircraft.

At a conservative estimate the government saved \$20,000 by flying these aircraft across the continent, as opposed to rail costs. More importantly, the flight illustrated the mobility of aviation units and the ability of the crews to operate for an extended period away from home base. It also pointed the way for future mass movements by military planes and held the promise of practical commercial long-range passenger flights.

CHARACTER OF FLIGHT

56 1st Sgt. Blackwell
 56 Blackwell, San Diego to Yuma
 56 " Yuma to Tucson
 56 " Tucson to El Paso
 56 " El Paso to Marfa
 56 " Marfa to Del Rio
 56 " Del Rio to Kelly Field
 56 " Kelly Field to Dallas
 56 " Dallas to Tulsa
 56 " Tulsa to Kansas City
 56 " K. C. to Belleville
 56 " Belleville to Indianapolis
 56 " Indianapolis to Dayton
 56 " Dayton to Moundsville
 56 " Moundsville to Harpers Ferry
 56 " Harpers Ferry to Brown Field

Robert D. ...

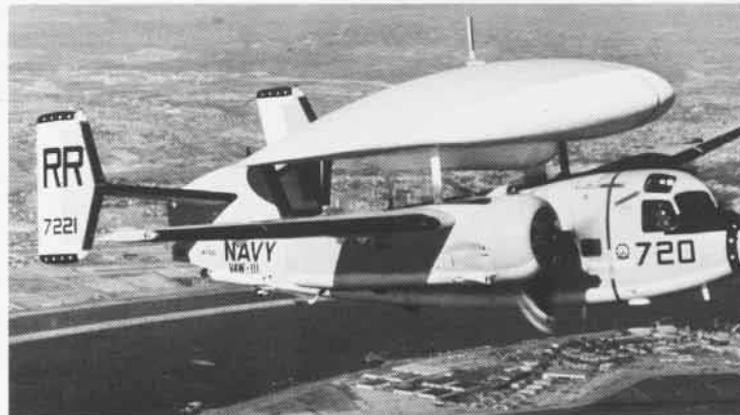
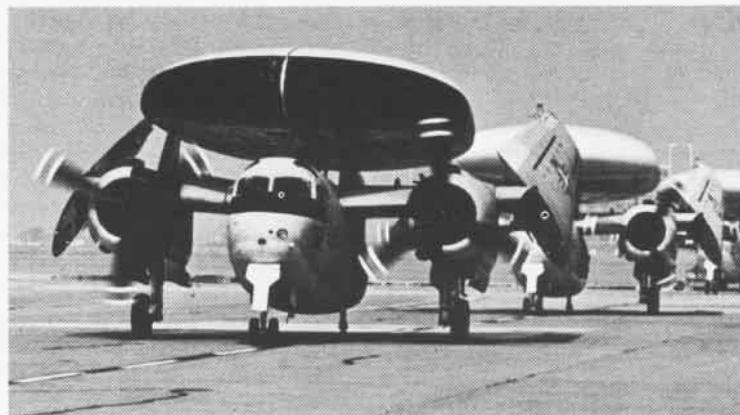
Willie Fudd, a *Stoof-with-a-roof*: younger generations of Naval Aviation personnel may wonder where such titles for the E-1B came from. Grumman's *Tracer* started out as the WF-2, and its obvious relationship to what was then the S2F gave it its second nickname. In fact, the WF-2 was not directly based on the S2F, but rather on the TF-1 (C-1A), though the links among all of this family are evident. Back in 1952, Grumman was given a contract to develop the WF-1 version of the S2F-1, a proposed replacement for the W versions of the AD, using similar radar. This was cancelled in 1954 before the first airplane was built.

In mid-1955, Grumman began serious studies of a more capable AEW airplane, basically designed around the TF-1, with a more powerful radar using a much larger antenna. The most practical configuration was a twin-tail version with the radome mounted above the airplane on struts and a short center-tail pylon. Wind tunnel tests indicated that the design was aerodynamically feasible. The final design was proposed to the Navy in January 1956.

Contract go-ahead in June 1956 included converting a TF-1 as an aerodynamic prototype and building a prototype production-configured WF-2. To provide adequate space for the four-man crew and the avionics equipment, the fuselage was to be lengthened 20 inches in the production configuration. Subsequent orders covered a total of 88. Flight tests of the aerodynamic prototype, following its first flight on December 17, 1956, confirmed that flight characteristics were generally satisfactory. The normal type of fixes were successful in correcting those problems that existed. Development of equally satisfactory overall avionics-system characteristics was to prove a more difficult job. Interestingly, the aerodynamic prototype, without its "roof," served for many years in the general TF role (though only land based) retaining its twin tails.

By December 1960, the major problems were well on their way to final solution, and WF-2s entered service with VAWs 11 and 12. Deploying in detachments, WF-2s served initially and mainly with the CVAs, though their effectiveness in ASW operations was soon demonstrated and detachments were also deployed on CVSSs.

By the time the WF-2 entered service, it was recognized as an interim model, to serve until the W2F-1/E-2A *Hawkeye* came into use. In fact, the E-1Bs (the *Tracer's* new DOD designation) continued with the modified *Essex*-class carriers, both CVAs and CVSSs, as long as these carriers deployed with the fleet, the last RVAW-11 detachment retiring with its return on *Oriskany* earlier this year. Similarly those with the reserves are on their way to well-earned retirement.



TRACER



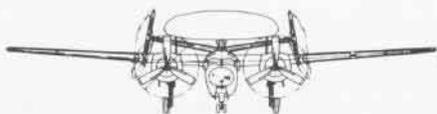
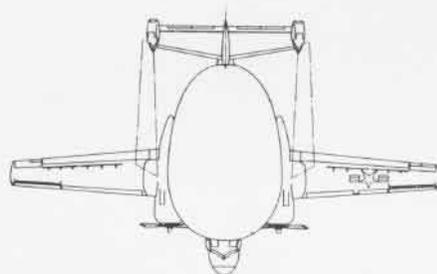
Aerodynamic prototype



E-1B



Span	72' 4"
Length	44' 6"
Height	16' 10"
Engines	2 Wright R-1820-82A
Maximum speed	1525 hp
Service ceiling	197 knots
Range	15,600'
Crew	875 nm
	4



Clansmen



Commander Ted Bronson and his Clansmen of VA-46 aggressively sought participation in American Bicentennial activities. In particular they wanted to host the British carrier Ark Royal's 892 and 809 Squadrons. They began their efforts while deployed in the Mediterranean with CVW-1 aboard USS John F. Kennedy (CV-67) in the fall of 1975. Ultimately, the squadron was designated a Bicentennial Command, one of comparatively few units or stations so assigned. Chances are the Clansmen will be seeing their British counterparts later this year when Kennedy makes a North Atlantic deployment.

The time and place were wrong but nonetheless the cry at NAS Cecil Field, Fla., in March was "The British are coming." The *Clansmen* of VA-46 were preparing to welcome the personnel and flying machines of the British Royal Navy 809 and 892 Squadrons based on *Ark Royal* which was tied up at Mayport.

Under cloudy skies with an occasional drizzle, Captain P. T. Gilcrest, C.O. of Cecil Field, Captain M. D. Reynolds, ComLATWing-1, and Commander E. R. Bronson, C.O. of VA-46, were on hand to greet Commander H. S. Drake, C.O. of 892 Squadron, and LCdr. E. K. Somerville-Jones, C.O. of 809 Squadron.

A seven-plane wedge of *Phantoms*

and Company



809 *Buccaneers*, 892 *Phantoms* and *Clansmen Corsairs* fly over NAS Jacksonville, Fla. Skipper Bronson makes touch and go on *Ark Royal* and Lt. Steve Ryan discusses the *Buccaneer* with a British crewman.

of 892 descended out of the haze first, flying low up the runway. Soon after, eight *Buccaneers* of 809 appeared, but the weather would not permit their planned low pass.

Days before the touchdowns, the word at Cecil Field had been "Add a Brit to your family" for some activity during the three weeks they will be here. The response was overwhelming—more people volunteered than guests were available. The British schedule was full of "please-be-here and you-are-invited" activities. Invitations included Scout outings, dinners, bowling, boating, Disney World, swimming, picnics—all the social activity of an air station.

But it was not all play for the visi-

tors. There were morning, afternoon and evening launches, familiarization hops, navigation flights and dive-bombing sorties to the Pinecastle target complex followed by interceptions in the warning area. The night sorties utilized ALF Whitehouse for FCLPs. Several cross-countries were included in the already busy schedule.

The two squadrons were part of *Ark's* air group. Also on board were 849 B Flight with its *Gannets* and 824 Squadron and its *Sea Kings*. Accompanying *Ark Royal* were two auxiliaries, RFAs *Lyness* and *Resource*. These three were later joined by RFAs *Olmeda* and *Regent*.

And to confirm that "the British are here," a special flight of almost

100 dependents arrived to spend family vacations with their sponsors.

Although all the guests spoke English, there were Scottish, Welsh, Irish and English accents, not to mention the sailors' jargon which filtered through, such as:

Rabbit, present (not a VW)
Hoover, to vacuum or to drink quickly
Flat, apartment
Cheerio, goodbye
Trapping, search for female company
Run ashore, night out
Gizits, give it to me please
Crab, Royal Air Force personnel
Waffu, air group personnel
Fish head, ships company
Bloke or geezer, guy

Gronk or bird, gal
Plonk, hooch or booze, drink
(alcoholic)

Strangle, someone who takes you out
Reverse strangle, someone you take out

In the words of one of the visitors, "It is most gratifying for us to be made so welcome. All we can say is thank you. Your friendship is very much appreciated.

"Although written in different circumstances, one of your songs is, I think, very appropriate and typifies our spirit. 'And the British kept a-coming although there wasn't as many as there was the time before.'"

LCdr. M. L. Mears and Cdr. Bronson get a brief on area in Scotland over which they might be flying this fall from 809's C.O., LCdr. Sommerville-Jones, top. Cdr. Drake, 892's C.O., and Clansmen's Bronson trade plaques, right. VA-46's Lieutenants junior grade Bill Wyall and Paul Jones pose with Bicentennial helmets before a hop, in box.



It was very appropriate that VA-46, a Navy Bicentennial command, host the British this year.

The *Clansmen* were commissioned in July 1955 at NAS Cecil Field as the first jet attack squadron in the Navy. Their nickname

and insignia were adopted when Commander Cliff A. McDougal, first C.O., gave the squadron the use of the McDougal clan tartan.

Today, the *Clansmen's* helmets sport a new paint job, four stripes of red on white and six white stars

on blue. The design is by PR1 A. B. Hill. Beneath the canopies of their *Corsairs*, the names of Navy patriots are inscribed on red, white and blue commissioning pennants, and high on the tails the original Navy Jack is emblazoned.



Thousand to One

By Kiddy Karr

Of the thousands of flights I have made in my life in Naval Aviation — so many of them hazardous in combat skies of World Wars I and II — none returns to memory as often as the one I made in 1937 from Naval Air Station, Pearl Harbor. It was in one of the Patrol Squadron Six PBYs we had flown out from San Diego in January of that year.

Lieutenant Paul Ramsey (later, vice admiral) was senior pilot. He and I had flown many, many hours together. One afternoon during the war problems, we received orders to search an area about 600 miles from Oahu. An "enemy" carrier was reported to be somewhere in that expanse.

For several hours after leaving the base we had clear weather. Then we saw a high (and low) cloud bank ahead of us and knew we were going to have to go upstairs to get over it. This presented a new problem — how were we to determine if and how much our wind velocity and direction were going to change as we flew farther and farther from the Islands?

About 2200, we reached the end of the cloud bank and saw the ocean below. At once Lt. Ramsey dropped down towards the surface to make runs on a float light to get a new wind. I don't remember the exact figures but I do know there was quite a difference. Lt. Ramsey was a wonderful navigator. At Pearl it was jokingly said that he could make a bubble octant sit up and beg for mercy. But he laughingly asked *me* over the intercom, "Did the new wind begin at that exact spot where we dropped the float light?"

After getting new wind, we went on to the area where the carrier was supposed to be — and found nothing! After a thorough search, we reversed course and headed back to Pearl. Ramsey used our new wind back to the edge of the high cloud bank and then recomputed our course on the old wind and headed for home. Now the odds entered the picture!! They were at least a thousand to one that the wind velocity and direction had

actually changed somewhere under that cloud bank. We could be many miles off our course.

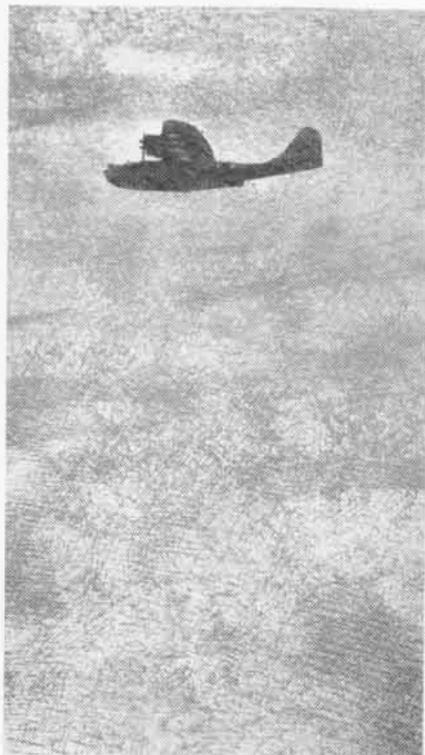
After several hours of smooth flying, Ramsey gave me a slip of paper with the message "Sight Oahu at 0340?" and laughed. Several times before that I imagined I saw land ahead but it always turned out to be a small cloud — or my imagination. Then at 0335, I saw a gleam from a lighthouse directly ahead of us. We were hitting what appeared to be land directly on the nose.

I was flying and Ramsey was navigating when he shook his head and said, "Wrong flash interval for *our* light (the top officer in the exercise had *changed* the flash interval just to foul us up) and where is the glare from Honolulu city lights?" All was black dark ahead of us. The lights of Honolulu should have been visible for 20 miles. I said, "Could it be Kauai?" (Kauai was about 100 miles northwest of Pearl.)

Ramsey signaled to head east and gave me a course for Kaena Point, halfway across the channel. I saw that the island ahead was small so I shook my head, and reversed course.

We were at about 14,000 feet, so I started letting down toward where Honolulu should have been and soon ran into a deluge!! This was what had blanked out Honolulu!! Ramsey came up then and took the vacant seat and the controls. We were on instruments from then on. Even in bright daylight, heavy rain on glass windshields was blinding. But I remembered that once, when I was flying over the Panama Canal in just such a deluge, I had found I *could* see fairly well through plexiglass when I was blind behind glass. So I suggested that I go up in the bow where I could look through the plexiglass turret and talk Ramsey down on the intercom.

The PBY, of course, had the finest blind flying instruments then available. If I could keep him in the channel around Ford Island, his instruments would tell him when to make the final let-down — when he passed



the sub base. However, his altimeter was unreliable after such a long period. It would be my eyes through the plexiglass which could determine or at least estimate the actual distance from the water when we were opposite our hangars.

I was so pleased to see that the sea was fairly visible in spite of the waves of rainwater pouring over the turret. Fortunately, the air was very stable so I knew that, with Ramsey at the wheel, we were the same as safely down. As we straightened out after the last turn we were about 30 feet up. When I said "Land straight ahead," Ramsey closed the throttles for a normal landing. Then I said, "Haul back." As the nose came up, the tail gently hit the water and we were "on" directly in front of our own hangar. I never saw a more beautiful landing. If we had had a cargo of eggs we would not have cracked even one.

It was always such a joy to fly with Ramsey for he had such a delicate hand on the wheel, yet he could go into "evasive action" so instantly and smoothly you were never thrown around in the plane. The privilege of knowing him, I consider one of the rich experiences of my life.

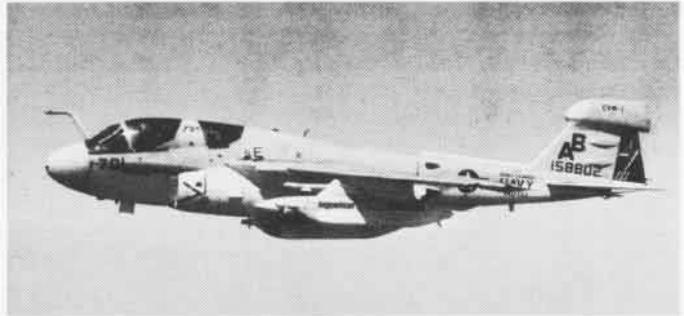


touch and go

Wizards on the Prowl

Tactical Electronic Warfare Squadron 133 was established in 1969, but in their brief history, the *Wizards* have deployed east and west and earned, back to back, CNO Safety Awards and ComNavAirPac Battle Es. In its early years, VAQ-133 operated EKA-3Bs and made two Vietnam deployments providing electronic warfare support to Yankee Station and other units. The *Wizards* also had aerial refueling capabilities. On their second combat cruise, for example, they transferred more than eight million pounds of fuel to USS *Kitty Hawk's* aircraft.

The squadron was temporarily deactivated in late 1971 and moved from NAS Alameda to its current home base at NAS Whidbey Island, Wash. By August 1972, the *Wizards* had completed transition to the EA-6B. The Grumman-built *Prowler* is a



four-place, twin turbojet plane with a fully integrated electronic warfare weapons system that combines long-range, all-weather capability with an advanced ECM system. The four-man crews include the pilot and three electronic countermeasures officers.

Aboard USS *America* in 1974, VAQ-133 became the first *Prowler* squadron to deploy to the Mediterranean. During the cruise the *Wizards* were tasked with integrating the EA-6B into Atlantic Fleet opera-

tions. They helped refine offensive and defensive EA-6B tactics.

On another Med cruise in 1975, this time aboard USS *Kennedy*, the squadron swept the "top hook" landing awards. Meanwhile the maintenance troops were busy earning an outstanding from ComFAirMed during the mid-cruise corrosion control inspection. This is believed to be the only time a squadron has been graded that high.

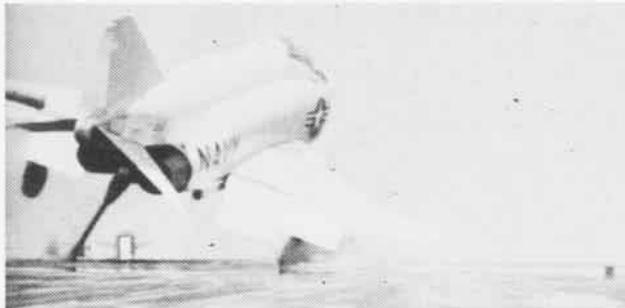
VAQ-133 is commanded by Cdr. Norman B. Nash.

Shake, Rattle and Roll

Shake, rattle and roll should be more familiar to a rock 'n' roll group than a group of Naval Aviators. But this is not necessarily so. For a unit at NATC Patuxent River, the three words have

special meaning.

Even a perfect landing on board an aircraft carrier is a jolting experience, and any landing that is a little less than perfect is a little more than jolting. Just how



much less perfect or how much more jolting can a landing be before an airplane begins to fall apart?

Finding that answer is a task assigned to a special collection of aviators and engineers at Patuxent. Their tests are actually called "shakes, rattles and rolls." The pilots intentionally perform landings which fleet flyers try to avoid: hooking the wire with only the nose wheel on the deck or catching the cable with none of the wheels on the deck. This slams the plane around with such force that some-

times bruises result.

During these tests, pilots will average 12 or more arrested landings in a two-hour period. Most of these are intentionally more rugged than normal.

"We're not out there to

break airplanes," explains Cdr. Bob McAfee, program manager. "We simply are making sure that the aircraft and their systems will hold up under less than perfect conditions. Normal carrier operations will stress

the aircraft from 50 to 65 percent of the designed structural limits. We push to about 82 percent."

So they shake 'em, rattle 'em and roll 'em. But they make sure they don't break 'em. Ray Lucasey

Rodeo Navy Style

What does a rodeo have to do with a Navy patrol squadron in Japan?

If the squadron is VP-47, deployed to NAF Misawa with the Seventh Fleet, the answer is plenty.

VF-47's "rodeo" had nothing to do with horses and calves but it was a competitive event emphasizing proper, efficient and safe operation of ground support equipment (GSE).

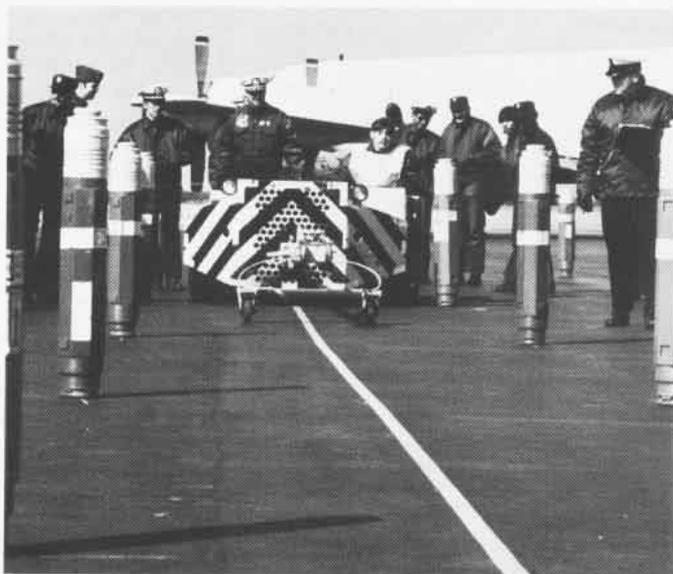
Nine qualified aircraft handlers competed for the top prize — a "King of the Line" belt buckle. Competition included a wide range of written and oral exams concerning rules and operation of GSE, daily inspections, support action form preparation, aircraft towing and maneuvering, and employment of GSE and drills involving tie-down, launch and recovery procedures.

Starting with a given total, points were deducted for each infraction, particularly those involving safety and usage violations.

As part of the competi-

tion, the handlers maneuvered GSE around obstacles while squadron personnel watched from the sidelines.

AN Rick Weisenhofer took first place.



Flight Ops on an LPD

When the crew of the amphibious transport dock USS *Juneau* turned out for flight quarters recently, they were greeted with a noisy surprise.

In place of the usual helicopter, the caller was an AV-8A *Harrier* piloted by Maj. Marx H. Branum, X.O. of VMA-513, MCAS Iwakuni. Off the coast of Japan, pilots from VMA-513 conducted at-sea flight operations from *Juneau* for seven hours. They made more than 50 takeoffs and landings. JO1 Bob Skinner



COMBAT CAMERAMEN



By PH1 Carl R. Begy



It's cold, and you're flying your first strike as a combat cameraman.

Below you, just over those snow-covered mountains, there's a river and three bridges. Your job: get newsreel coverage of the Navy's first strike on the Yalu River.

You make a last minute check of your Eyemo. Film . . . 100 feet, Plus-X, more than enough. Spring . . . tight, tension enough for a 40-foot take. Lens . . . 25mm . . . turret locked, exposure set at f/8.

You wrap the worn leather thong around your wrist and take a firm grip on the handle. The heavy camera's metal is cold on your forehead

as you sight through the viewfinder and out the hatch of the *Skyraider*.

You're holding tight as the AD peels off and starts its dive. Wrinkled, dirty white earth twists before you. You suck in your breath and wait . . . wait until two 1,000-pound bombs tumble from the plane toward earth. Your finger presses the trigger and your Eyemo grinds, 32 frames for each long second. The pull-out drains blood from your brain. Your camera weighs a ton.

Now you're climbing. You see smoke where bridges once stood, flak splotches and the silhouettes of other ADs on their way down to where you and your camera have just been.

Relive this mission flown by aviation photographer's mates in November 1950, and you'll have a good idea of the jobs Pacific Fleet Combat Camera Group photographers had in the Korean war. Add the experiences of 1,500 other enlisted photo mates and officers, change the equipment and location to fit the times, and you have the continuous story of 25 years of PFCCG coverage.

The story of photography and Navy air began much earlier (*NA News*, September 1975). They first got together in 1913 when both were still in infant stages of development. Through the years, they worked together and progressed, becoming increasingly sophisticated. Today they are a vital part of the nation's defense establishment. Photography from naval aircraft has proven to be as deadly for the enemy as any bomb or missile.

Photographs were first used to re-



cord the structural damage of aircraft and the first photo school was established by Ens. W. L. Richardson at Naval Air Station, Miami, Fla., in 1918.

The use of aerial photography to record the fall of shot in long-range battle practice at sea proved so successful that aerial photography became an integral part of naval photography.

One of the photographic units to conduct extensive shooting is PFCCG located at NAS North Island, Calif. The combat camera group story began in Washington, D.C., three weeks after the outbreak of hostilities in Korea. Top-level meetings were held to determine the role of naval photography in the Korean conflict. It was decided to order the Navy's WW II combat photography program out of mothballs. Although established to cover the Korean War, the group has been active ever since. Its title was changed to Mobile Photographic Unit in 1959 and back to PFCCG in 1966. PFCCG subsequently covered the Vietnam conflict. The images recorded by the combat camera photographers reflect a history of the Navy and events of 25 years in the 80-million-square-miles which constitute the Pacific area.

Commanding officer of PFCCG is LCdr. Richard J. Wade, Jr., a former Navy chief photographer. "Our mission is simply to document the continually unfolding history of the Navy and the country," he says. "Although much of our photography is used by Navy and civilian media in the area of news and public affairs, that's not our primary reason for covering most events. The preservation on film of operations, tests, and events — whether classified, successful, pleasant or not — is our main concern."

In the air, on the ground or under the sea, the PFCCG photographers are all specialists in their fields. The unit has had more than 1,500 photographers assigned and many of these former CCGers were present at the PFCCG Silver Slate Anniversary reunion held in San Diego June 11 and 12.

Even though the multisensor photographic aircraft has taken over in a majority of aerial photo missions, there are still many photo mates flying in jets and helos shooting with that indispensable "eye in the sky."

... and underwater

By PH1 Bob Woods

The launch was uneventful. Steering a course of 040, vectoring toward his target 20 feet off the deck, the pilot glanced up. He saw a shark at 12 o'clock. He wasn't surprised. He wasn't flying a high-performance jet nor a rotor-type craft. He was piloting the Navy's fixed-wing M-114-E *Pegasus*.

The *Pegasus*, an underwater craft, is known as a "wet" submarine. Every enlisted man in the diving section of the Atlantic Fleet Audio Visual Command, Norfolk is a qualified pilot of the craft.

Not only does the *Pegasus* control like an aircraft, but the navigational container provides both aircraft gyro and magnetic type compasses and an artificial horizon level. Instead of an altimeter and fuel gauge, it has a depth gauge and a voltmeter.

The electric vehicle is powered by 18 rechargeable alkaline wet cell batteries which provide a 30-volt engine with one-half horsepower. This translates to approximately 800 rpms.

The pilot uses a hand-operated control stick and foot-operated rudder control. The single joy-stick control provides complete one-hand maneuverability: climb, descent, bank and a variety of aeronautical-type maneuvers.

It can stop within its own length and do a complete 360-degree turn in less than 100 feet. "If the craft can't turn around in a particular area," says PH1(DV) Waterman, "you just stop, get off, turn it around, and start off again."

It is a "lighter-than-air" craft with the ability to maintain, to a reasonable degree, a fixed "altitude." With neutral buoyancy, *Pegasus* can remain close to a specific depth even after a full stop. In this condition, the pilot is able to leave the vehicle temporarily "parked" underwater.

One thing the *Pegasus* can't do that an aircraft can, is taxi. "It's a knee-knocker trying to taxi," says PHC Dick Johnson, a qualified fixed-wing civilian pilot.

The Norfolk command has three *Pegasus* vehicles. They are designed and used by the Navy for photogrammetry. Each unit, with its accessories, weighs almost 400 pounds and is difficult to transport. *Pegasus* itself weighs 190 pounds out of water. Its speed is about three knots, depending on its navigation package and camera equipment. "The Navy requires a minimum of two divers in the water at a time. If we have an extended mission to accomplish then we use two vehicles. If it's a short mission in a small space, a safety diver is in the area and a safety boat is overhead," says PH1-(DV) Dave Craver.

Steve Waterman adds, "It's hard work flying it, because of the drag."

The divers don't like to fly the *Pegasus* more than two hours at a time. It has a three-hour capability when its batteries are fully charged.

The divers say most of the thrills of underwater flying are the same as in a normal aircraft. But with the *Pegasus*, they're their own pilots, even if they do fly with sharks.





PEOPLE PLANES AND PLACES

VA-174's Yuma-based detachment personnel were downright inhospitable to the squadron that visited their flight line in



April. They wanted to give their uninvited, fixed-wing, high-performance visitors — otherwise known as bees — the bum's rush, but discretion prevailed.

Air traffic came in low across the Girard's Point Bridge on Interstate 95. This E-1B *Tracer* was eased through two miles of the double-layer highway from Philadelphia Airport to the naval base. There it was placed on the flight deck of *Intrepid* which is being used for a Bicentennial display.



The return of VF-191 to Miramar on March 2 from a WestPac deployment aboard *Oriskany* marked the last fly-in for the fighter version of the F-8 *Crusader*. Joining VF-191 for the fly-in was her sister squadron, VF-194. The last of this model F-8 has now been retired after 20 years of active service. VF-191 has won the ComNavAirPac Battle E four times in the last five competitive periods and also set an F-8 squadron safety record of 28 months without a major aircraft accident.

Fighter Squadrons 191 and 194 are transitioning to the F-4J *Phantom*.

Mine Countermeasures Units Bravo and Alfa have relocated from Charleston, S.C., to NAS Norfolk, Va. They came under the operational control of ComNavAirLant in 1975. Every aspect of preparation, execution and follow-up in minesweeping is supervised by one of these units. Mine-



sweeping ships are made available to them by MineRon-12 under ComNavSur-FLant. Divers with mine deactivation training are normally furnished by the Mine Warfare Command in Charleston, S.C., and HM-12 supplies detachments of mine-sweeping helicopters.

For ATC Pete Pierson, VP-47 was the beginning, and may also be the end, with his retirement in the offing. It was his first squadron back in 1960. He left it in late 1962 and returned in August 1974.

Honors:

A newly completed air traffic control school building at Memphis has been named Wood Hall in honor of the late Capt. Robert H. Wood, former commanding officer of NATTC and Deputy CNTechTra at the time of his retirement in 1968.

Ltjg. Caryl Buck, air intelligence officer of VP-44, is co-recipient of the Navy League's Captain Winifred Quick Collins Award for inspirational leadership by a Navy woman. She is believed to be the only woman in the armed forces designated a special weapons loading officer.

Among the winners of the 1976 Edward F. Ney Memorial Awards for excellence in food service are North Island, *Midway* and *Iwo Jima*.

The Atlantic Fleet 1975 winner of the Golden Wrench Award for excellence in aircraft maintenance is VP-23.

Independence returned to Norfolk on May 5 after seven months in the Med, her 11th deployment with the Sixth Fleet. High point in the cruise was the Sixth Fleet Exercise *National Week*. The annual maneuvers test the readiness of our naval forces in the Med.

Records:

Reserve squadron VR-51's Det NAS Whidbey Island averaged 23,000 air miles a month in the last year, flying transport missions to Europe and throughout the Pacific.

During a training deployment to NAS El Centro in April, VMAT-102 *Hawks* surpassed 60,000 accident-free hours, seven years of accident-free flying.

On April 17, VS-28 completed 66,000 accident-free hours since September 1962. The event was marked when a squadron *Viking* returned to *America* from an ASW mission.

The first Navy LAMPS helicopter landing aboard a *Spruance*-class destroyer on the West Coast was made in May when an HSL-33 helo touched down on *Paul F. Foster*.

Vancouver (LPD-2) recorded its 15,000th helo landing.

Five members of VF-161 counted their 200th carrier arrested landings in March, aboard *Midway*: LCDr. Mike Borich, Lieutenants Dan Bouck, Bill Coll, Doug Sameit and Ltjg. Mark Skoning.

LCDr. Kenneth N. Rauch, VA-27, touched down on *Enterprise* for the carrier's 160,000th arrested landing.

Miramar reserve squadrons VFs 301 and 302 completed nearly 45 landings an hour during carquals aboard *Enterprise* in April off the Southern California coast.

Changes of command:

HC-2, Jacksonville: Cdr. Robert M. Redmond relieved Cdr. Harry P. Dews, Jr.

Pacific Missile Test Center: RAdm. David M. Altwegg relieved Capt. Ira N. Schwarz.

RVAH-9, Key West: Cdr. Michael J. Madden relieved Cdr. James L. Harre.

VF-21, *Ranger*: Cdr. R. C. Schroeder relieved Cdr. J. B. Houston.

VP-47, Misawa: Cdr. Dennis T. Graff relieved Cdr. Peter T. Smith.

VF-151, *Midway*: Cdr. James D. Curry relieved Cdr. Eugene D. Conner.

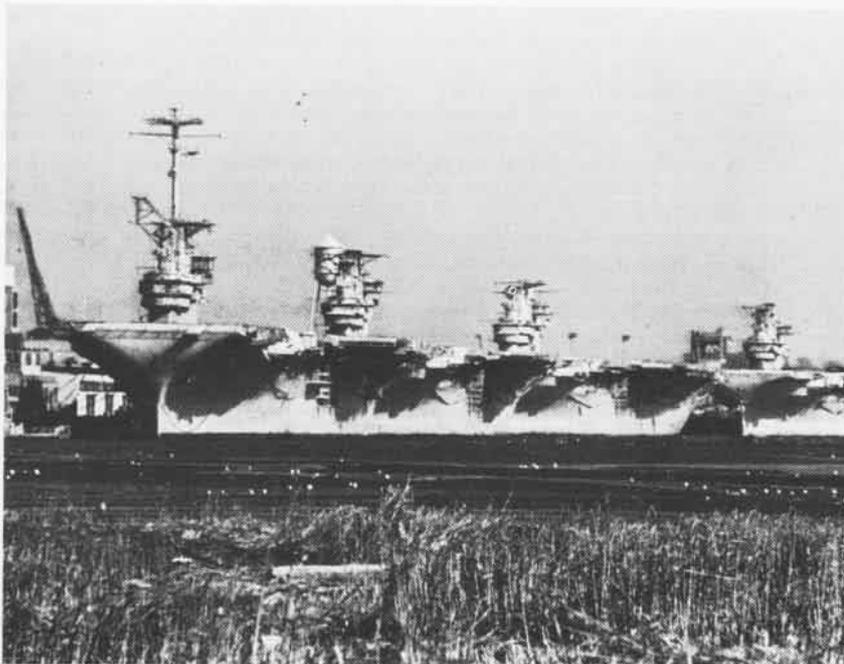
VP-48, Moffett Field: Cdr. J. G. Burton relieved Cdr. M. A. Pearce.

VFP-206, Washington, D.C.: Cdr. Wilson F. Flagg relieved Cdr. Richard K. Maughlin.

ComASWWingPac: RAdm. Cecil J. Kempf relieved RAdm. James B. Stockdale.

VAW-123, *Saratoga*: Cdr. Larry Hebert relieved Cdr. Wayne A. Putnam.

Four carriers of yesteryear rest in formation at the shipyard in Bayonne, N.J. Ltjg. John James photographed *Shangri La*, *Yorktown*, *Essex* and *Randolph*. Today, *Yorktown* is a floating museum at Patriots Point, S.C.



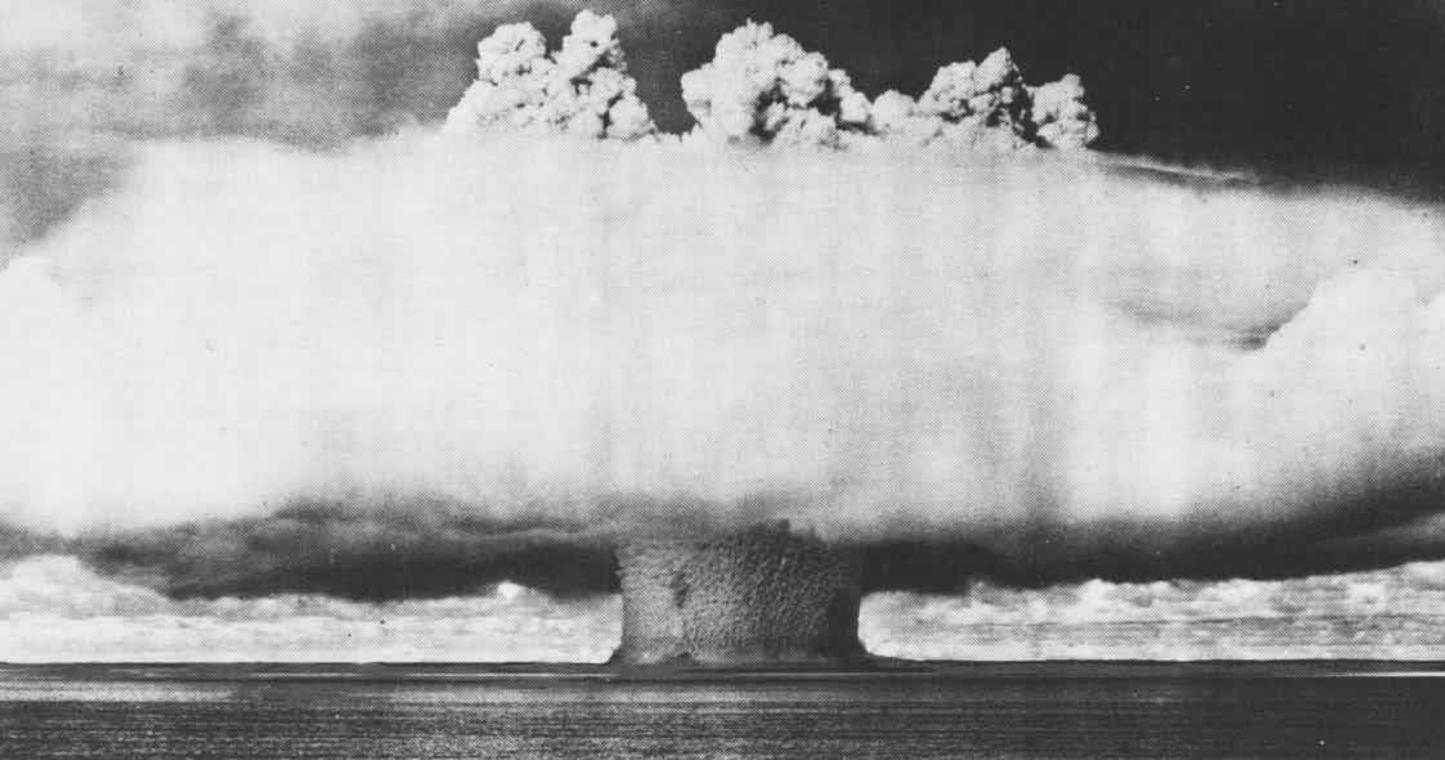
- 1911 Maiden flight of the A-1, first aircraft built for the Navy, was made by Glenn Curtiss, taking off from and alighting on Lake Keuka at Hammondsport, N.Y. The flight was of five minutes' duration, altitude, 25 feet.
Lt. T. G. Ellyson flew the A-1 from Keuka to Hammondsport on the first night flight by a Naval Aviator, landing successfully on the water without the aid of lights.
- 1912 On the basis of the Navy's experience with its first airplanes, SecNav published "Requirements for Hydroaeroplanes," the first general specifications for naval aircraft.
The first attempt to launch an airplane by catapult was made at Annapolis by Lt. T. G. Ellyson in the A-1. The plane, which was not secured to the catapult, reared at about midstroke, was caught in a crosswind and thrown into the water. Ellyson was not injured.
- 1914 Aviation was formally recognized with the establishment of the Office of Naval Aeronautics in SecNav.
- 1916 The AB-3 flying boat, piloted by Lt. G. DeC. Chevalier, was catapulted from USS *North Carolina*, underway in Pensacola Bay. The launch completed calibration of the first catapult designed for shipboard use, making *North Carolina* the first U.S. Navy ship equipped to carry and operate aircraft.
- 1917 The first eight-cylinder Liberty motor arrived in Washington, D.C., for testing by the Bureau of Standards. It had been assembled at the Packard Motor Car Company from parts made by different manufacturers.
A group of 24 student Naval Aviators reported at the University of Toronto for flight training under the Canadian Royal Flying Corps.
Ground instruction for prospective pilots and aviation ground officers began at the Massachusetts Institute of Technology.
The Army Navy Airship Board endorsed a proposal by the Bureau of Mines for experimental production of helium.
- 1918 Naval Aircraft Factory completed its first order for fifty H-16 flying boats.
RAF Station, Killingholme, England, was turned over to American forces and placed in commission as a naval air station, LCdr. Kenneth Whiting in command.
NAS Porto Corsini, the only U.S. Navy seaplane patrol station in Italy during WW I, commissioned under the command of Lt. W. B. Haviland.
The N-1, first experimental aircraft built at the Naval Aircraft Factory made its first test of the Davis gun for which it was designed. The gun gave satisfactory performance.
Elements of the First Marine Aviation Force arrived at Brest, France, for operations as the Day Wing, Northern Bombing Group.
- 1919 SecNav authorized installation of launching platforms on the two main turrets of eight battleships.
The Naval Appropriations Act for FY 1920 provided for the conversion of the collier *Jupiter* to an aircraft carrier (*Langley*), construction of a rigid dirigible and the purchase of another.
- 1920 The radio compass was first used in a test flight by an F5L from Hampton Roads to USS *Ohio*, 94 miles at sea in a position unknown to the pilot. Without landing, the plane made the return trip navigating by signals from Norfolk.
- 1921 An Act of Congress created the Bureau of Aeronautics.
- 1922 Eight medical officers, the first to report for flight training, began their instruction at NAS Pensacola.
- 1924 BuAer assumed cognizance of pigeon boxes for use in aircraft.
- 1927 A flight of five DHs led by Maj. Ross E. Rowell, USMC, strafed and dive-bombed bandit forces surrounding a Marine garrison in Nicaragua. The event is generally considered the first organized dive-bombing attack in combat.
- 1930 Capt. Arthur H. Page, USMC, piloted an O2U from a sealed, hooded cockpit on an instrument flight of about 1,000 miles from Omaha, Neb., to NAS Anacostia, the longest blind flight up to that time.
- 1932 Funds were allocated to the Bureau of Medicine and Surgery for research into the physiological effects of high acceleration and deceleration encountered in dive-bombing and other violent maneuvers.
- 1935 Lt. Frank Akers made the first blind landing aboard a carrier. He took off from NAS San Diego in an OJ-2 with hooded cockpit and landed aboard *Langley*, which was underway in an unknown position.
- 1936 A contract was awarded to Consolidated for the XPB2Y-1 four-engine flying boat. A later configuration became the Navy's only four-engine flying boat to be used as a patrol plane during WW II.
LCdr. D. S. Fahrney received orders for duty with an experimental project which resulted in a proposal to develop radio-controlled target planes and recognized feasibility of using aircraft as guided missiles.
- 1940 Authorization for further expansion of the Navy provided an increase of 200,000 tons in aircraft carrier limits set the previous month, and a new aircraft ceiling of 15,000 useful planes.
- 1941 SecNav approved installing a radar plot aboard carriers as the "brains of the organization," protecting the fleet from air attack.
- 1943 Airship K-74, on night patrol off Florida, attacked a surfaced U-boat, was hit and brought down, the only airship lost to enemy action in WW II.

JULY

- The Naval Aircraft Factory was authorized to develop the *Gorgon*, an aerial ram or air-to-air missile powered by a turbojet engine and equipped with radio controls and a homing device.
- 1944 A special air unit was formed for transfer without delay to Commander, Fleet Air Wing 7 in Europe. The unit was to attack German V-1 and V-2 launching sites with PB4Y-1s converted to assault drones. PB4Y *Liberators* of VB-109 based on Saipan made the first strike on Iwo Jima by shore-based planes.
- 1945 Task Force 38 under Vice Admiral J. S. McCain operated against the Japanese homeland in a series of air strikes. The campaign was carried on until the end of hostilities.
- 1946 In Operation *Crossroads*, tests to determine the effects of atomic bombs on naval targets were conducted at Bikini Atoll. Among the targets were *Saratoga* and *Independence*. VX-3 was commissioned at NAS New York to study and evaluate use of helicopters for naval purposes. In the first U.S. test of the adaptability of jets to shipboard operations, LCDr. James Davidson, flying an XF8D-1 *Phantom*, successfully landed on and took off from *F. D. Roosevelt*.
- 1949 Participation of Navy Transport Squadrons Six and Eight in the Berlin airlift ended. During their 8 months in Germany, they flew a total of 45,990 hours and carried 129,989 tons of cargo. They flew better than ten hours per day per plane for the entire period. Douglas pilots flying an XF3D-1 completed an initial flight evaluation of the low-drag external store shape at Muroc AFB, Calif.
- 1950 Carrier aircraft from USS *Valley Forge* and HMS *Triumph* went into action in Korea. It was the first combat test for the F9F *Panther* and AD *Skyraider*. Fourteen squadrons of the reserve were activated for duty. First carrier reinforcements arrived in the Far East, the beginning of carrier deployment to the combat area.
- 1951 The Naval Air Turbine Test Station was commissioned at Trenton, N.J., to test and evaluate turbojet, turbo-prop, ramjet and pulse-jet engines.
- 1956 In the first overseas deployment of a *Sidewinder* missile unit, VA-46 equipped with F9F-8s left Norfolk for operations with the Sixth Fleet in the Med. *Thetis Bay* (CVHA-1), the first helicopter assault carrier, was commissioned at San Francisco.
- 1958 While aircraft from *Essex* flew cover and Sixth Fleet ships stood by, Marines landed on beach near Beirut, Lebanon, to protect American lives. A balloon (manned by Cdr. M. D. Ross and LCDr. M. L. Lewis) ascended to 82,000 feet carrying a record load of 5,500 pounds. It remained airborne over 34 hours. Primary purpose of the flight was to test the sealed cabin system designed to carry an externally mounted telescope to observe the atmosphere of Mars.
- 1959 CNO approved policy recommendations made by the Ad Hoc Committee on Astronautics that the Navy would use space to accomplish naval objectives, would participate fully in space technology and that astronautics would have high priority in overall research and development. An NRL report indicated the feasibility of adapting Omega navigation to aircraft use.
- 1961 The first Natops Manual, for the HSS-1, was distributed. As the Natops system developed, Natops flight manuals were issued which consolidated flight and operating instructions with the handbook information.
- 1964 Navy's navigation satellite system became operational.
- 1965 The Navy's first oceanographic air survey unit was commissioned at NAS Patuxent River. Its mission included aerial ice reconnaissance in the North Atlantic and polar areas and aerial operations concerned with worldwide magnetic collection observation (Project *Magnet*).
- 1966 CNO established the LHA program, a new concept of an amphibious assault ship.
- 1968 The Naval Air Reserve was reorganized into wings and squadrons known as the Naval Air Reserve Force.
- 1969 Former Naval Aviator Neil Armstrong became the first man to set foot on the moon.
- 1971 CVSGR-80 deployed aboard *Ticonderoga* in the Pacific, the first carrier deployment of a Selected Air Reserve unit under the Naval Air Reserve Force concept.
- 1972 The Naval Air Advanced Training Command at Corpus Christi was decommissioned. (Commander, Naval Air Training took CNAVAnTra's place, another step in the reorganization of the Naval Air Training Command.) *Tripoli* (LPH-10) and HMM-165 assisted in relief and rescue work in the Philippines after Typhoon *Rita*. First two women began Navy flight surgeon training at the Naval Aerospace Medical Institute, Pensacola. Navy's minesweeping operations in North Vietnamese waters were completed.
- 1974 Marine helicopters from *Inchon* evacuated American citizens from the British base in Cyprus because of the conflict between Turkish and Greek Cypriot forces.
- 1975 The *Apollo* program ended as HS-6 recovered astronauts Thomas Stafford, Donald Slayton and Vince Brand after a two-day hookup with the Soviet *Soyuz*.

PRELUDE TO THE BIG BOMBS

By Clarke Van Vleet, Aviation Historian



Some of the heaviest Naval Air action of the Pacific War occurred just before the atomic bombs were dropped on Hiroshima and Nagasaki.

By the first of July 1945, American forces had island-hopped their way to Japan's front door. Iwo Jima had been secured in March. Resistance on Okinawa had been eliminated by the end of June. U.S. Third Fleet Commander Admiral "Bull" Halsey was now chafing for the signal to trigger Fleet Admiral Chester Nimitz's Operation Plan 4-45.

The plan would touch off the mission to "attack Japanese naval and air forces, shipping, shipyards and coastal

objectives" on the four big islands of Japan from Kyushu in the south to Hokkaido in the north. Admiral Halsey was to make a fairly generous interpretation of these objectives.

Task Force 38 with 14 carriers, under Vice Admiral John McCain, would do the job. With blood in its eye, the force sortied from Leyte Gulf in the Philippines on July 1. On July 10, heavy air strikes were launched against airfields in the Tokyo plains. Four days later over 1,300 sorties

were sent against fields and shipping in northern Honshu and Hokkaido. These sweeps were repeated on the 15th. The planes returned to hit Tokyo targets and naval shipping at Yokosuka on July 17 and 18, respectively.

One of the pilots from *Yorktown's* new Fighting Squadron 88 (VF-88) flew an F6F-5 *Hellcat* with the first strike. He described it: "The great Tokyo plain was so thickly studded with airfields that ten or a dozen were

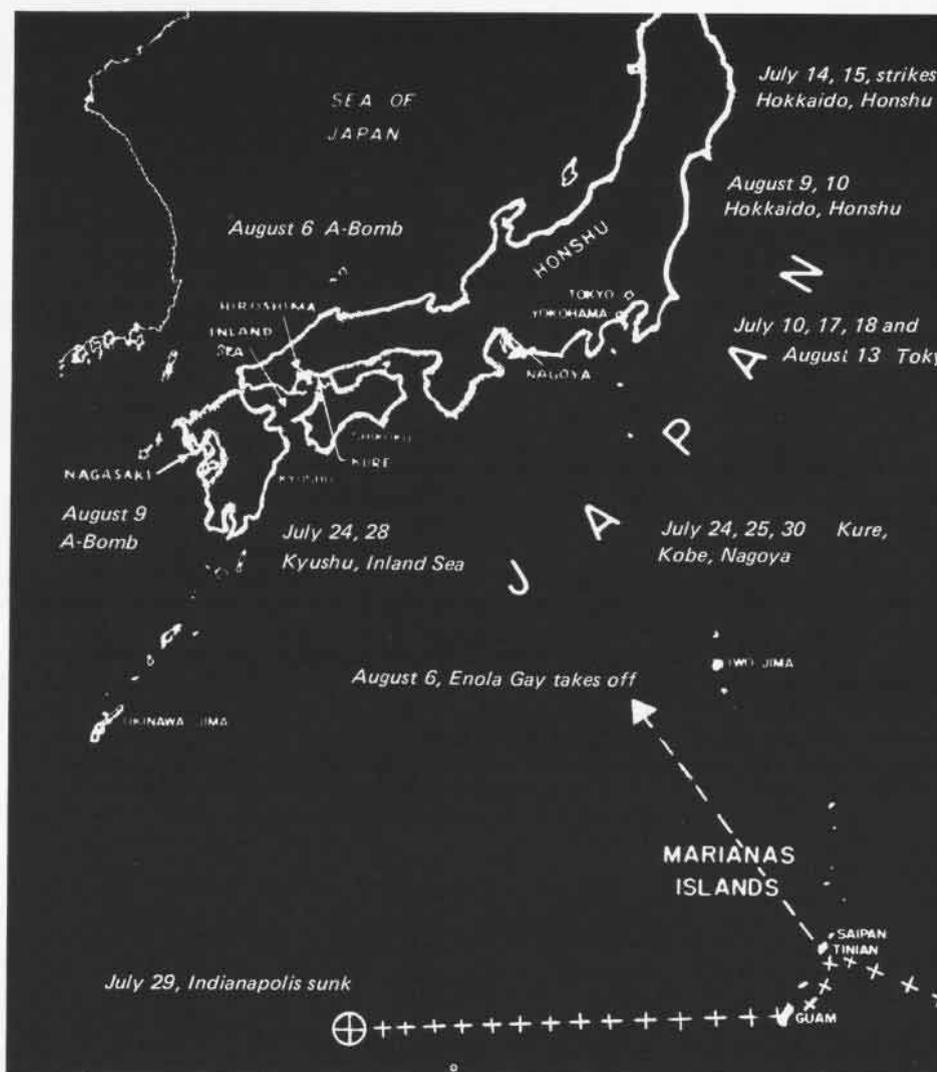
visible from almost any point at 5,000 feet altitude. Planes were cunningly camouflaged and hidden in dispersal areas and covered revetments sometimes as far as two miles from the field itself. At Konoike alone, in two attacks our pilots destroyed or damaged 20 planes and an undeterminable number were knocked out by 13½ tons of fragmentation bombs. The pilots were quite disappointed over the lack of Japanese planes in the air, and neither anti-aircraft fire nor other occupational hazards seemed to bother even the greenest of them."

During the attack on the 14th, VF-88 lost its commanding officer, LCdr. Richard G. Crommelin, one of five brothers in the Navy, including John G., who had attracted attention in the Thirties as a member of the Navy's early flight demonstration team, *The Three T'Gallants' Ls.* Lt. Malcolm W. Cagle took over command of VF-88 and subsequently earned the Navy Cross "for extraordinary heroism . . . in action against enemy Japanese forces in Kure Harbor, Honshu, Japan. . . ."

The day before Task Force 38's second strike on Tokyo, a huge mushroom-like cloud appeared in the sky 6,100 miles east of the Japanese capital, in the desert of New Mexico. It was the explosion of the experimental atomic bomb — July 16. On the same day, another 4,700 miles east on the outskirts of the German capital of Berlin, President Truman, Prime Minister Churchill and Marshall Stalin were to open the Potsdam Conference.

As the conference got under way, Task Force 38 completed its initial raids against the Japanese homeland and retired to refuel and replenish. It was the largest logistic operation ever performed on the high seas. Over 6,300 tons of ammo, 379,000 barrels of oil, 1,600 tons of provisions, 90 replacement aircraft and 400 new officers and men were put aboard the ships.

Reloaded for bear, the force returned to launch strikes against shipping around Kure and at airfields on northern Kyushu on July 24. Planes swept up the Inland Sea and against Nagoya on the 25th. Then, for insur-



ance, they re-ran their previous sweeps in the closing days of the month.

There was plenty of drama. On the 24th, VF-88 scored its first "kills" when Lt. Cagle, on his way back to the rendezvous point, was jumped by enemy fighters. Alone, he shot down two *Franks* (the Nakajima Ki84 single-seat army fighter, the *Hayate*). A dramatic *Dumbo* rescue was also performed in the Sea of Japan during these sweeps. (Named after Walt Disney's cartoon elephant, *Dumbos* were especially equipped PBY *Catalinas* which scouted troubled waters to pluck downed aviators and other survivors from the drink.) In this

case, VF-88's Lt. Harrison had been shot down in Japanese waters and had climbed into his raft. Squadron mates, Lieutenants Proctor and Sahloff, scoured the skies for a *Dumbo*. One was found and led to the scene. Lt. Harrison was retrieved in what was one of the most dramatic rescues of the war. But, as with all the ironies of war, he was saved only to be shot down and lost the last day of the war — after the orders for a cease-fire had been issued! Lt. Sahloff also was lost.

The raids launched on the 24th and 28th were among the heaviest of the aerial fighting in the Pacific. More



*Amagi and Katsuragi (arrows) at Kure.
Both of the carriers are camouflaged
with netting and huts built on deck.*

than 1,700 sorties were flown on the 24th alone. At Kure and Kobe, the Japanese battleship *Haruna* and the battleship-converted carriers *Ise* and *Hyuga*, all of which had narrowly escaped knockout blows in previous engagements, were not so lucky this time. They were so badly gutted at their berths that they filled rapidly with water and sank to the bottom. The new aircraft carrier *Amagi* and her near sister, *Katsuragi*, were also put out of business.

Although the American carriers launched their aircraft only 80 miles offshore, the planes and ships met virtually no opposition from the enemy's air force. Japanese authorities were saving the country's remaining 10,000 operational aircraft to combat the expected invasion of their homeland. About half of these planes were assigned to suicide units.

Meanwhile, on July 26th, the heavy cruiser *Indianapolis* had completed a fast, unescorted run from San Francisco to Tinian loaded with highly secret and sensitive elements of the atomic bomb. She had set somewhat of a record by covering the 5,000 miles in ten days. Fate got her safely to Tinian with her lethal load, but fate decreed she would never make her next destination. From Tinian she was ordered to Leyte via Guam. Lurking in her track was Japan's submarine I-58, commanded by LCdr. Mochit-sura Hashimoto. (He had been aboard one of the mother subs attending the midjets which tried to attack Pearl Harbor, December 7, 1941.) Now he controlled his own submarine and, according to his account, had gone "to pray at the ship's shrine" just a few days before he sighted *Indianapolis* as a silhouette in the moonlight. Near midnight on July 29, he sent six torpedoes roaring toward the cruiser's hull. Two smashed into the belly of the ship. In less than 15 minutes, she rolled over and went down, bow first. More than 800 men were lost out of a crew of 1,199.

On the same day that *Indianapolis* had delivered parts and materials for assembling the Big Bomb at Tinian, Truman, Churchill and Chiang Kai-shek issued the Potsdam Declaration. It called for "the unconditional surrender of all Japanese armed forces."

Truman was prepared to order the atomic drop should Tokyo reject the declaration. On July 28, Japanese Premier Suzuki declared to the press that Japan would ignore the declaration, a statement the Allies interpreted as a rejection.

The President's Interim Committee, composed of top officials and eminent scientists, had previously recommended that the atomic bomb be dropped as soon as possible in order to show its devastating effects and perhaps end the war. Such a move might preclude the slaughter of untold American GIs in any attempt to invade Japan. The Committee had also considered a warning drop in an uninhabited area. It reasoned, however, that Japan might subsequently herd hundreds of prisoners of war into target areas to prevent any real atomic attack. Additionally, if a yet unproven warning bomb should turn out to be an operational dud (it had never been tested from a plane), America's leverage would be lost. Considering the 112,094 Americans killed, wounded and missing at Iwo Jima and Okinawa, compassion for the enemy did not figure heavily in the deliberations. Secretary of War Henry Stimson opined, "... Such an effective shock would save many times the number of lives, both American and Japanese, that it would cost."

Truman had put the Army Air Force on notice to "deliver its first special bomb as soon as weather will permit visual bombing after 3 August."

Task Force 38 began moving north August 4th to clear the Hiroshima area for the atomic bomb drop. By then, McCain's force had been joined by Task Force 37 under the Royal Navy's Vice Admiral Sir H. Bernard Rawlings, commanding four British carriers. Back on Tinian, on August 6, Colonel Paul Tibbets, Army Air Force, climbed aboard his B-29 Superfort, *Enola Gay*, nicknamed after his mother. Captain Williams Parsons, USN, a weapons expert going along in charge of ordnance and safety features, also got aboard and made final adjustments to the bomb. With the rest of the crew they took off, climbed to 31,600 feet and proceeded on course. Over Hiroshima, the bom-

bardier, Major Thomas Ferebee, USA, "toggled the bomb out" at 9:15 a.m. They were back at Tinian at 2:58 p.m. No overtures came from Tokyo.

Task Force 38, still steaming north on August 6, was about 300 miles off the Japanese capital. Orders came from Nimitz to continue to waters off northern Honshu. The Japanese were concentrating a large number of planes on that island, and on Hokkaido, in preparation for suicide strikes against U.S. bases in the Marianas. On August 9, carrier air attacks destroyed 189 of these planes on the ground and damaged another 102. On the 10th, 150 planes were destroyed and 105 damaged at two airfields previously unnoticed and untouched by attacks. Strikes against Tokyo on the 13th netted another 254 planes destroyed, 149 damaged.

On August 9, the second atomic bomb was dropped, on Nagasaki. Soviet Russia had declared war against Japan the same day. Peace feelers came out of Tokyo on the 14th. Next day at 6:35 a.m., when Admiral Halsey sent a message to his forces announcing the end of hostilities and ordering the cessation of offensive air operations, the first carrier strike of the day had already hit Tokyo. The second was approaching the coastline when it was recalled.

Lt. Harrison, leading six VF-88 *Hellcats* in a sweep over Tokorozama airfield, was flashed the word that the Japanese had surrendered and that the flight should return to *Yorktown*. Harrison had no more than rogered when his team was jumped by 20 *Franks* and *Georges*. (The latter being the Kawanishi N1K2-J single-seat Navy landplane fighter, the *Shiden* or *Violet Lightning*.) In the ensuing dogfight, Harrison's men shot nine of the attackers out of the sky. Lt. Proctor accounted for three and Ens. Hansen two. Both men got back to the ship, their planes were badly damaged. The other four men, however, Lieutenants Harrison and Sahloff and Ensigns Hobbs and Mandeberg, were lost in this "last important air battle of the war." VF-88's unit historian closed his report with "This was the crowning loss. The end of the war brought little jubilation among the pilots. The news was accepted quietly."

Soliloquy

I just returned from a hard day's work to be greeted by *Naval Aviation News* and an article ("Soliloquy, Part II") written in part, about me. After reading it a dozen times I was rejuvenated. It made me feel part of the Navy again. This is quite a challenge to the saying "old soldiers and sailors just fade away."

In my travels I meet many retirees who tend to forget their splendid years of service. Reading that anecdote about me makes me feel like a part of the Navy, even today. I am thankful that the author had such strong and complimentary feelings about a shipmate.

Bob Dugan, USN (Ret.)

Info Needed

Thanks to the assistance of many readers of your fine publication, research project #7210 of the American Aviation Historical Society is near completion. The subject is the complete history of the Douglas F3D (F-10) *Skyknight*, to be published in the society's *Journal*.

We would like to make an additional request for information on the operational dates of the *Skyknight's* service in Navy and Marine Corps units. If anyone can assist us, I would be grateful if they would contact me as soon as possible.

Again, many thanks to all who contributed valuable data over the past three years.

F. J. Amody
175 Crary Ave.
Mt. Vernon, N.Y. 10550

OK, OK, OK!

Naval Aviation News is anxiously awaited and widely read by the entire squadron. It was heart-warming to see an *Enterprise* launch on the cover of your March 1976 issue. However, in all fairness to both the A-7 and A-6 communities, careful study of both Natops Manuals reveals that the A-7E *Corsair II* flown by the *Royal Maces* of VA-27 (i.e., NK400 on cat 2) is not really a look-alike for the A-6E *Intruder* flown by the main battery of VA-196.

K. J. Athow, Lt.
Natops Officer
VA-27

I am an ex-*Warhawk* of VA-97 so I was delighted to see the cover of the March *Naval Aviation News*. However, the cover description read, "A VA-196 *Corsair* is on the catapult." VA-196 is an A-6 squadron and the number two A-7 squadron aboard *Enterprise* is VA-27.

M. D. Malone, Lt.
12th Company Officer
U.S. Naval Academy
Annapolis, Md. 21402

Front page photos of a squadron are always good for the morale of a unit and the March 1976 issue of *Naval Aviation News* was appreciated by the *Royal Maces*. However the *Maces* would appreciate being referred to as VA-27 vice VA-196 as noted on the inside page. Incidentally VA-196 flies the A-6E *Intruder*.

D. A. Iverson, Cdr.
Royal Mace #2

Referencing the cover photo of your March 1976 issue, the caption erroneously indicates the *Corsair* on the #2 catapult is assigned to VA-196. Be advised that VA-196 is an A-6E *Intruder* squadron and is therefore somewhat limited in its ability to launch A-7s. Though we greatly appreciate the publicity, in the interest of accuracy and Main Battery pride, VA-196 will eagerly supply photos of A-6 *Intruders*—properly marked as Main Battery aircraft—which you may desire to honor on the cover of your fine publication.

John K. Peiguss, Cdr.
Executive Officer
for the Men of the Main Battery
VA-196

Jacket Patches

I am a collector of squadron jacket patches but, unfortunately, started too late to get any heavy attack squadron patches. If anyone has any duplicates or any they would part with, I would pay a reasonable price for them.

I enjoy *Naval Aviation News* very much.

Douglas G. Allen
28 Utica Ave., Hillcrest
Binghamton, N.Y. 13901

Two in One?

The January 1975 issue of *Naval Aviation News* stated that VF-103 claims a record of sorts for having served aboard two carriers, *America* and *Saratoga*, on one deployment.

While I am not aware of another squadron that might have duplicated the feat, I can personally vouch for an entire air group that served aboard two carriers while on a tour of duty.

CAG-2, having operated aboard *Valley Forge* during the Korean War for 16 weeks, transferred to *Philippine Sea* and attempted an exchange of aircraft at sea. After approximately one-half of the planes had been exchanged, air operations were cancelled due to extremely rough weather. (Several planes on both carriers had been damaged.)

On March 29, 1951, while *Valley Forge* was tied to Piedmont Pier, Yokosuka, Japan, and *Philippine Sea* was anchored in the stream, air group personnel were exchanged and the remainder of the aircraft were transferred by lighters. *Valley Forge* returned to the U.S. with CAG-11 on March 30.

CAG-2, the last air group without jet aircraft to operate aboard an *Essex*-class carrier in Korean combat, was affectionately known as "Terrible Two from Frozen Chosin."

On her return to the United States in June 1951, *Philippine Sea* set a record for crossing the Pacific between Japan and San Francisco, 7 days and 13 hours. Has that record been broken?

I was attached to CAG-2 as an aerial photographer with VC-61 (Det Fox).

Harvey D. Hinks
119 S. Michigan
Elkhart, Ind. 46514

Kudos?

On page 40 of the March issue, a letter to the editor is preceded with the word "Kudo." What is a kudo?

J. P. McMahon, LCdr.
VA-303
Alameda, Calif. 94501

Ed's Note: Kudo is four-fifths of kudos.

Reunions

VQs 1 and 2 will hold a reunion on August 1 in Alexandria, Va. For more information call Chuck Hodell—autovon 227-5988, 3526 or 6773 — or Vince Anania—703-370-2592.

Naval Aviation News Survey

Naval Aviation News is required to conduct a reader survey periodically. Therefore, it would be greatly appreciated if you would complete and forward this tear sheet to us. Just tear, fold where indicated, staple and mail. As needed, extra copies of this page may be reproduced and forwarded.

Rate/Rank _____

Job in unit _____

Type of unit _____

If civilian, occupation _____

Age _____

1. How often do you read *Naval Aviation News*?

- Every month
- Frequently
- Occasionally

2. Is the magazine readily available to you?

- Yes
- No

3. Which of the magazine's features do you enjoy the most? (Please rate in order of preference.)

- Editor's Corner
- Did You Know?
- Grampaw Pettibone
- Feature articles
- Naval Aircraft
- People, Planes and Places
- Letters
- Squadron Insignia
- Historical articles

4. Do you find the magazine educational?

- Yes
- No

5. I would like to see more articles on:

- Ships
- Air stations
- Squadrons
- Aviation support facilities
- Research, test and development
- History
- Human interest
- Photo features
- Humor
- Other

6. Do you have any suggestions on how to improve *Naval Aviation News*?



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These are examples of aircraft carrier insignias that have been used through the years. The one directly below is from Yorktown.

CARRIER INSIGNIA

