

**NAVAL
AVIATION
NEWS**

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NAVAL AVIATION NEWS

SIXTY-FIRST YEAR OF PUBLICATION

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COVERS — Lew Kuritz of NAEC Lakohurst filmed F-14 Tomcat exhaust during jet blast deflector test, front. See feature beginning on page 8. On the back cover, F-14s from VF-84 were photographed by Grumman's Jerry Costello. Here, VA-72 Corsairs from J. F. Kennedy fly in formation over the Med.



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Air Board

The Naval Aviation Air Board met at Cherry Point, N. C., in October to discuss numerous topical issues vital to Naval Aviation. Vice Admiral Frederick C. Turner chaired the gathering which was attended by top level officers from the Marines as well as Navy.

A presentation was made by Rear Admiral C. J. Seiberlich, Deputy Chief of Naval Personnel, regarding the critical problems faced in the retention of naval pilots. He pointed out the criticality of our pilot shortages and his bottom line was, "We've studied this issue long enough. Now is the time to take action to curb the mass exodus of pilots from the military service." We have no excess pilots in our inventory (as was the case in earlier eras of airline hiring) and because a reduced pilot training rate is a reality in FY 79, it is forecast that we won't be able to provide the fleet with the required first tour pilots in that year. Additional management problems concerning squadron department heads (too few) requirements and squadron command screen opportunity (too high) were forecast for subsequent years. This forecast of decreasing ability to man junior, mid-grade and, eventually, senior officer billets, both ashore and afloat, will have an extreme impact on Naval Aviation, one requiring immediate and positive action.

Reasons given for declining pilot retention rates included: airline hiring, job dissatisfaction, unresponsive detainer relationships, extended deployments and family separation, perceived or real erosion of benefits, and less flight time than anticipated and/or desired.

Suggestions for solving the critical problem included re-institution of a proficiency flying program, use of reserve aircraft to maintain flying skills, a six-year obligation service for all designated pilots, and institution of a professional development program for Naval Aviators (similar to that in the submarine community).

The Marine Corps voiced concern about the CNATra policy of using selected SerGrads in advanced training

command squadrons because this could have an adverse impact on the morale of fleet-experienced instructors who are forced to return to primary and basic training squadrons. A recommendation was made that only a minimum number of SerGrads be selected; that they be assigned to primary squadrons first, basic squadrons second, and to advanced squadrons only if absolutely required. CNATra will review this policy.

It was also suggested that every effort must be made to eliminate any perception that a tour in the TraCom is detrimental to one's career.

Discussions also centered on safety and, in particular, on the area of ACM-related mishaps. It was agreed that ACM on the range (where an ACMR exists) is perhaps the most sound alternative to reducing ACM-related accidents. Full utilization of existing ACMRs has been directed and continued support for the proposed Charleston and Fallon ranges was advocated.

The issue of not providing TraCom ACM training for certain aviation communities - for example, VS, VP, foreign students - was addressed. It was decided to continue this type of training within the standard syllabus for all students. It was suggested (and will be staffed) that more solo ACM flights be conducted in a dual pilot mode and that, possibly, fleet-experienced NFOs be ordered to TraCom to fill a back seat function on certain ACM flights.

The point was made that with cruise work-ups and stand-downs, readiness levels fluctuate somewhat and that aircraft utilization rates vary. Requirements for parts support will likewise vary at these times. Senior commanders need to be aware of these problems and take all possible measures to anticipate and meet the demands.

The Marine Corps, it was observed, has been able to reduce cannibalization to a minimum through careful monitoring of aircraft utilization and funding, resulting in the best possible material condition for its aircraft inventory.

A presentation regarding management functions of the extremely large,

yet vital intermediate level aircraft maintenance organization was made by Captain Bill Oslun, Op-514. It was proposed that an intermediate maintenance management staff be formed to enhance the management and productivity of AIMDs. Consequently, a staff of between 5 and 10 officer/enlisted personnel will be located at NAS Patuxent River in concert with NALC, but it will operate under the administrative control of Op-51.

It was the consensus of the Air Board that there is a general misperception about overcrowded conditions on our CVs. It is agreed that our CVs are fully loaded with the air wings as they exist today, but this does not necessarily mean they are "overcrowded." Shipboard living represents a cultural shock that affects morale, retention, productivity and safety. The only way to lessen this shock is to provide dollars for improving habitability. With improvements in habitability, the perceived overcrowding problems, hopefully, would be reduced. It was also recommended that we provide off-ship living accommodations during comprehensive overhaul periods.

Rear Admiral Frederick F. Palmer, CNavRes, presented his objectives toward full integration of the aviation reserve force into Naval Aviation. They include stabilizing the number of reserve personnel, ensuring the role of the reserves in meaningful support of the fleet, addressing all reserve issues in the budget process, and providing more TAR personnel for fleet assignments, thus enhancing a healthy exchange of information.

RAdm. Palmer also mentioned the Naval Aviation Logistics Office, which offers support in all logistic aircraft scheduling. He asked for the cooperation and assistance of all echelons to fully implement the functions of this asset.

In an effort to give the reserves an all-weather/night attack capability, and to preclude the transition back to A-7As for certain reserve squadrons when the life of A-7Bs has expired, RAdm. Palmer proposed that the reserves transition two squadrons to

Continued on page 46

did you know?

First Flights

The prototype of the Marines' newest light attack aircraft, the AV-8B, flew for the first time November 9 at McDonnell Douglas Corporation, St. Louis, Mo. With test pilot C. A. Plummer at the controls, the new V/STOL lifted off and hovered at altitudes of up to 130 feet for seven minutes.

Following its evaluation in St. Louis, the prototype and a sister ship flew to NATC Patuxent River, Md., for the remainder of the flight test program.

The advanced *Harrier* will more than double the payload or radius of the 8A. Its armament includes *Sidewinders* and 30mm cannon. Full-scale development begins this year with production scheduled for 1983.



The F/A-18A *Hornet*, the new strike fighter for the Navy and Marine Corps, flew for the first time on November 18. At the controls for the one-hour flight from St. Louis to Springfield, Ill., was McDonnell Douglas test pilot Jack Krings. Maximum altitude was 24,000 feet; top speed, 300 knots. The first *Hornet* will also go to Patuxent River for further testing.

Capable of flying at nearly twice the speed of sound, the F/A-18A has a combat radius of more than 550 nautical miles. *Sidewinders*, *Sparrows* and 20mm cannon are its primary armament.

The *Hornet* is scheduled to replace the F-4 *Phantom II* and A-7 *Corsair II*.

Ground Start Enclosures

The Naval Air Systems Command has provided funds to the ground support equipment department of NAEC Lakehurst to develop and coordinate the in-house manufacture of 12 improved ground start enclosures (MD-3As). The enclosures, mounted behind MD-3 tractors, are used aboard aircraft carriers to provide air-start capability to jet engines.

Among the recommended improvements are the removal of the DC power system, since it is readily available aboard carriers, addition of a forklift at the base of the enclosure and an extra three-inch length to the L-frame (for clearance when removing the enclosure from the tractor). These improvements and others will make the enclosures more reliable and easier to maintain. When the functional tests and technical evaluation have been completed, six of the enclosures will go to ComNavAirLant and six to ComNavAirPac.

Marine Corps Aviation Awards

Colonel Walter R. Ledbetter, a helicopter pilot stationed at Quantico, Va., has been named winner of the Alfred A. Cunningham Award as the Marine Corps Aviator of the Year. The award, named for the Marine Corps' first aviator, was established by the First Marine Aviation Force Veterans Association to commemorate the founding of Marine Corps Aviation and to perpetuate the names of its pioneers. A trophy, a world globe supporting a replica of a *Jenny* training plane, is permanently housed in the museum at Quantico, Va. Each winner receives a certificate.

The Robert M. Hanson Award has been awarded to VMFA-531, El Toro, Calif., as the outstanding Marine Fighter Squadron of the Year. Capt. Hanson, who was shot down in 1944 while flying an escort mission over Rabaul, New Britain, was awarded the Medal of Honor and the Navy Cross posthumously. The award is sponsored by the Vought Corporation, Dallas.

Flying Status

Recently a Naval Aviator was killed in an aircraft accident soon after returning to duty involving flying. He had not adjusted his insurance program when going from a non-flying status. The company was not obligated to pay benefits to the widow. Armed Forces Relief and Benefit Association made this a special case, provided \$77,000 to the widow and modified its underwriters contract to provide a 30-day grace period for aviators returning to flying status.

Don't overlook personal details. Pass the word, please.

Hornet Gunsight

McDonnell Douglas Corporation is building a new gunsight for the F/A-18. The Director gunsight uses an independent, target estimation radar to determine target speed, position and acceleration. It not only predicts target movement after the *Hornet's* cannon has been fired but also compensates for the effects of aerodynamic drag and gravity on the shell.

The gunsight moves the cross hairs on the pilot's display to the proper spot for a target hit. The pilot then places the cross hairs on the target and pulls the trigger. The gunsight continuously computes the estimated miss distance for a shell fired at any given moment, flashing a "shoot" cue whenever it estimates a hit will occur.

The gunsight relies primarily on signals from the aircraft's APG-65 tracking

radar for its target estimates. In the event that the signals are interrupted, the F/A-18 also has a conventional gunsight as backup, which is the equivalent of primary gunsights aboard current fighters.

New Home for McClusky Trophy

The Naval Aviation Museum is now the permanent home of the C. Wade McClusky Trophy. The award honors the Battle of Midway hero who led an attack on a Japanese carrier force which helped turn the tide of the war.

The LTV-sponsored award is presented annually to the outstanding Navy attack squadron. The names of the winning squadrons will be engraved on the original trophy and each winner will retain a replica.

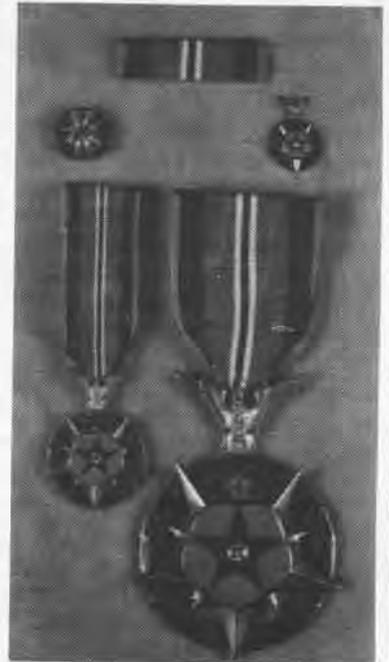
Space Medal of Honor

Six astronauts received the Congressional Space Medal of Honor from President Jimmy Carter on October 1 at the Kennedy Space Center. The award was authorized by Congress in 1969 to be presented "to any astronaut who in the performance of his duties has distinguished himself by exceptionally meritorious efforts and contributions to the welfare of the nation and of mankind."

The date also marked the 20th anniversary of the National Aeronautics and Space Administration.

The citations were given to: Neil A. Armstrong for the *Gemini 8* mission in 1966 and the *Apollo 11* mission in 1969, when he became the first person to walk on the

moon; Frank Borman, who commanded the 1965 *Gemini 7* mission and the 1968 *Apollo 8* mission; Charles Conrad, Jr., who participated in four space flights from 1965 to 1973, culminating in the first manned *Skylab* mission; John H. Glenn, Jr., the first American to orbit the Earth in the *Mercury* flight in 1962; Virgil I. Grissom (posthumously), the second American in space, who took part in *Mercury* and *Gemini* space flights from 1961 to 1967, and lost his life preparing for the first *Apollo* flight; and Alan B. Shepard, Jr., who was the first American in space aboard *Mercury* in 1961 and the commander of *Apollo 14*, the third lunar landing mission in 1971.





grampaw pettibone

Slow Roll Blues

A West Coast test facility's T-28B was scheduled for a 1300 local area familiarization flight to provide a visiting USAF helicopter project pilot with an airborne, firsthand look at the operating range and test drop areas. Following a thorough brief, the VFR flight departed on schedule. Since there was a range event of interest, the pilot requested clearance into the operating area. Clearance was granted upon departure of all other participating aircraft.

The previous range event had involved several parachute drops into a large shallow salt lake on the southern end of the range, requiring three boats to recover the test equipment.

After entering the range, the pilot flew over the area, pointing out various items of interest to his passenger in the rear cockpit.

The pilot made a series of low passes over the recovery boats at altitudes of 50 to 100 feet above lake level at about 180 knots with power set at 2,200 rpm, 30 inches, and mixture rich. After passing the recov-



ery boats, the pilot pulled up approximately 20-25 degrees and commenced a climbing steep turn to the right. After reaching 100 degrees of starboard roll, he decided to execute a full 360-degree roll to the right. The maneuver was flown to a wings-level position 130 knots of airspeed (altitude unknown) with the aircraft in a slight nose-down attitude.

At this point the pilot saw two large birds directly in front of him and pulled up sharply to avoid collision, causing the aircraft to stall. He relaxed stick pressure and attempted a recov-

ery. Insufficient altitude remained, however, and the aircraft contacted the water, tail first, and sank into the 12-foot-deep lake. Pilot and guest exited the aircraft and swam to the tail section. Recovery boats were immediately on the scene and rescued the wet, but uninjured, men.



Grampaw Pettibone says:

Great sufferin' catfish! This is one of the saddest songs I've heard in all my days! Here is an extremely experienced pilot with over 4,000 flight hours to his credit who, with his "tough-act-to-follow" routine, dang near put himself and his not-so-impressed passenger asleep-in-the-deep! Fortunately, they escaped with only a short sail-on-the-tail, giving rudder orders to their once trusty but now rusty flying machine. The only admirable act observed in this whole fandango was that of the prompt and professional rescue by the recovery boat crew.

As Old Gramps has always said, "When you assume that your thousands of hours in the air or tiger attitude makes you immune to accidents, then you are a candidate for the deep six, shallow twelve in this case, or some mighty fast tap dancin' to your swan song at the end of the long green table. A little travelin' music, please. And that's the name of that tune!"



Sucker Hole

One Sunday afternoon, six T-28s, in two flights of three planes each, were scheduled to depart a south-eastern Air Force base for a *day* VFR navigation mission on the return to home base. Each group was made up of one instructor and two student pilots.

Bad local weather all afternoon made them decide by 1600 not to leave that day. As the pilots walked to their planes to get their gear, blue patches of sky appeared and the field went VFR. Since the earlier forecast for their destination was VFR, a quick GO decision was made, and the flight members scurried to get off.

Airborne at 1629, they completed their rendezvous and proceeded on course at 2,500 feet. Twenty minutes later, encountering some cumulus clouds up to 3,000 feet, the flyers climbed to 4,500 feet. When they were about an hour out and it started to get dark, power settings were increased to 33 inches manifold pressure (mp) and 2,200 rpm (about 185 knots). As it became darker, power was again increased to 36 inches mp and 2,400 rpm to pick up speed. The two instructors discussed the possibility of landing for an RON, but decided to continue. A short cut was taken to bring them home faster.

The lead trio arrived in the vicinity of home base to find the weather had gone IFR with scud and haze. As the flight tried to descend below the clouds and come in VFR, the #2 man became separated and climbed back on top (about 2,000 feet). The #1 student, though told by the instructor to climb also, saw the runway and proceeded to land. The instructor climbed back on top, joined the #2 man and brought him in on his wing with a VOR approach. The wingman broke off when the runway was sighted while the instructor S-turned and landed behind him.

The second flight, some 10 minutes behind, had descended to 1,500 feet and, upon encountering scud, started a gentle descent to get clear of the clouds. Encountering more scud, they descended further. The instructor



pilot, flying the #3 position, ordered a right 360-degree turn to pick up the original heading.

As the flight descended toward the field, still in parade formation, it became darker. At 300 feet and in the clouds, the #2 man found himself in a 20-degree right bank, still descending. He leveled his wings and started a climb. At this point, the leader was visible only by his lights and the instructor was nowhere to be seen.

Breaking out on top at 2,000 feet, the #2 man made contact with #1 who had also climbed on top. Course was reversed to take them back along their previous flight path. A fuel check revealed #1 had only 200 pounds of fuel remaining and #2 had only 45 to 50 pounds.

Attempts to make radio contact with their instructor were fruitless, for his aircraft had struck the ground in a descending turn within three miles of home base.

The #1 man flew back along his previous route and could soon see the ground. Remembering an airfield he had seen earlier, he continued north until the lights of the field came into view where he landed at the municipal airport.

The #2 man, who was really short of fuel, climbed to 6,500 feet as he continued north looking for a place to land. He reduced power to 19 inches mp and 1,900 rpm. As he broke out

from over the clouds, he saw a small town. With only 25 to 30 pounds of fuel remaining, a bailout appeared to be in order.

He then spotted a very large field in the dim light, decided to land there, switched to guard frequency, and broadcast a Mayday. Setting himself up at the high key, he could easily see ground references, but as he flew lower, he could hardly see the field in the dark.

On final, with the gear up, the battery mags and gas were turned off, the canopy was blown open, and the radio cords were disconnected. He flew over some trees that suddenly appeared ahead, then floated on across the field. On touchdown, the plane skidded, started burning and came to a stop about 150 feet from a farmer's house. The relieved student got out fast and ran to the house. The farmer's wife came out and proceeded to put out the fire with her garden hose.



Grampaw Pettibone says:

Sufferin' succotash! These guys should'a stayed in bed! There were so many errors in judgment on this flight. I didn't take time to count 'em, but they all add up to the same thing, Trouble. You really can't blame these poor students. After following their leaders almost over the cliff, they did a good job of salvagin' the situation. (September 1968.

A LOOK AT LAKEHURST



What goes on at the Naval Air Engineering Center at Lakehurst, N.J.? One of the Navy's largest research, engineering, development, test and evaluation complexes, it boasts of having more ways of launching and recovering aircraft than any other installation of its kind. It has a 13,280-foot test runway complete with two steam catapults and a runway arresting system.

The Center's operations reflect endless hours spent at drawing boards with slide rules and computers. Let's take a look at some of them.

By Helen F. Collins



S-3A undergoes shipboard barricade arrestment certification testing on one of the high-speed tracks. Compatibility tests are made before prototype aircraft and related launch-recovery equipment are certified as operational.



Dummy is ejected from an A-4 Skyhawk cockpit during a seat ejection test at one of the Center's high-speed test tracks.

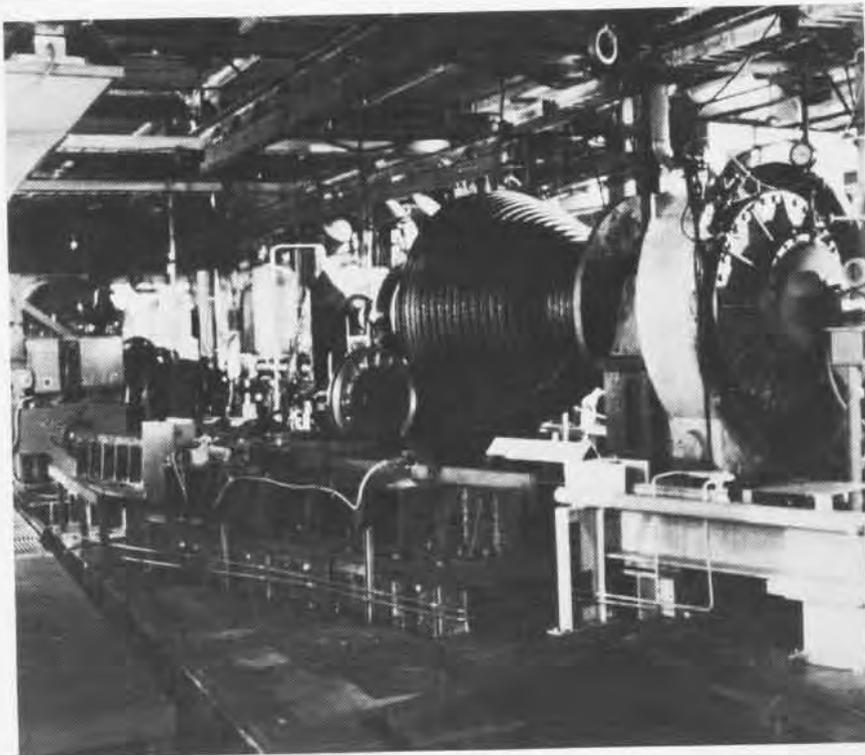


NAEC engineers test new sling for transporting downed aircraft. CH-53 is used for the test on a 12,000-foot runway. Below, Center personnel, using the integrated catapult control system installed on one of Center's two shipboard-type steam catapults, conduct rapid-cycle test for aircraft compatibility during carrier operations.





An F-14 catches the wire during Tomcat compatibility test on arresting gear. Right, a MK 14 shipboard arresting gear is installed below deck at the NAEC runway arrested landing site for testing.





Phantom is launched from C13-1 steam catapult. Carrying multiple ejection racks loaded for a ground support mission, F-4 was gathering shipboard compatibility test data. C13-1 can hurl a 5,000-lb. car nearly six miles. Left, T-2 Buckeye is launched from C13-0 shipboard-type catapult.



A-7 Corsair ingestion test on one of the steam-operated catapults helps determine how much of the catapult-generated steam is ingested by plane's intake during launch, and the possible effects.

Lakehurst has housed many activities over the years. From 1915 to 1917 it was an ammunition proving ground for the then Imperial Russian Government, and later for the U.S. Army, when it was known as Camp Kendrick. It was commissioned into the naval service in 1921 as an air station and retained this status until a 1977 reorganization ended its NAS designation. The same reorganization disestablished the Naval Air Test Facility which was located there, and consolidated it with the Naval Air Engineering Center to form today's NAEC Lakehurst complex.

During its long history as an air station, Lakehurst served as a lighter-than-air craft base for four decades from 1921 to 1961. It was the country's first transAtlantic international airport as the North American terminal for *Graf Zeppelin*, and *Hindenburg*, which crashed and burned there. At one time or another, every rigid airship in the Navy was based at Lakehurst. The station also maintained a pigeon loft where

it raised and trained homing and carrier pigeons — pigeons which won awards in many races.

Today it is home not only for the Engineering Center but also for many other activities, among them reserve Helicopter Antisubmarine Squadron 75, Navy and Marine air reserve detachments, a branch of the Philadelphia Naval Aviation Supply Office, a Naval Weather Service Environmental Detachment, and the Aviation Flight Test Activity, a unit of the Army Electronics Research and Development Command.

A major tenant activity is the Naval Air Technical Training Center. Its Aircrew Survival Equipmentman Schools division includes Class A, B and C Schools (*NA News*, May 1975). The Aviation Boatswain's Mate Schools give Class A and C training (*NA News*, August 1975). Students come from the Navy, Coast Guard, Marine Corps and Allied military forces. The Marine Aircrew Launch and Recovery Equipment School trains Marine Corps personnel in rapid construction of mobile airfields.

NAEC lays claim to its own distinguished history separate from the story of Lakehurst which became it

home in 1974. NAEC traces its lineage to the Naval Aircraft Factory established in Philadelphia in 1917, which produced more than 2,200 aircraft of all types between 1918 and 1944. As time passed, the emphasis shifted to research and development, and the Naval Aircraft Factory became the center of the Navy's aeronautical development and experimental world. In 1956 it was renamed the Naval Air Engineering Facility, and later redesignated the Naval Air Engineering Center.

It was responsible for many firsts: turntable catapult, radio-controlled target drone, rocket-powered radio-controlled missile, free-flight and guided missiles, amphibious transport glider, steam catapult and Navy's first rigid airship, *Shenandoah*. Carrier arresting gear was designed and developed there, as well as the full-pressure flying suit worn by the astronauts during the *Mercury* space program.

What goes on at the Naval Air Engineering Center? Just about every facet of an aircraft's life from the minute it lands to the minute it takes off – and then some.

Harrier conducts vertical takeoff and landing operations at the helicopter test complex.



Clement Ader (1841-1925) was one of the lesser-known figures in the history of aviation. Possessed of a brilliant mind, he spent most of his life in research on the phenomenon of flight. He incorporated his conclusions into a series of ingenious machines which would have ensured his fame, had they only gotten off the ground. Some maintain that he did make one, short powered flight on October 9, 1890; but Ader was secretive about his work and so witnesses were few. As cantankerous as he was brilliant, Ader persisted in notions about flight which led him down blind alleys. He held, for example, that the steam engine was the best power plant for an aircraft, and he designed and built one of remarkable lightness. Ader was also obsessed with the notion that man could fly only if he faithfully copied nature. He described his planes as bat-type or vulture-type, with wings that folded when they were "at rest." The wings on one of his gliders were covered with feathers!

Ader's greater importance lies in his marvelous power of vision. His book on *Military Aviation*, published in 1909 but written some years before, was a remarkably accurate prophecy on air power. Among other topics, Ader speculated on the future of Naval Aviation, as evidenced by the text which follows. While his description of carrier operations has its charmingly naive side, in its main lines it rings true. This is all the more remarkable since it was written in 1895 - two full decades before the first primitive carrier went to war. (Submitted by Lee Kennett, Professor of History, University of Georgia.)



Oracle of Aviation

Air, of course, is everywhere. While we know how airplanes should operate over land, what about over the sea? The steadily increasing power of navies presents us with the seemingly insoluble problem of doing battle with a warship. But if we cannot hope to knock out a battleship at one fell swoop, I still think that it will be possible to do serious damage to it at the outset and even to sink it if the attack is executed with a large enough number of planes. As I have already said in connection with the equipment of bombing planes, I foresee a large bomb of 100 to 200 kilograms; we have only to find the means to use it against warships. If the attack on the enemy's fleet could be executed in the coastal waters of France or her allies, operations would be simple enough, since the aircraft could land and load their bombs at airfields near the coast. But on the high seas it would be quite different, so an aircraft-carrier vessel becomes indispensable.

"These ships will be built along lines far different from those used today. First, the deck will be cleared of all obstacles - flat, as wide as possible, and without altering the nautical lines of the hull, it will look like a

landing field. The word 'landing' is perhaps not the term we should use, so we will substitute for it the word 'boarding.'

"Naval aircraft will be distinguished by several features. Their front wheels will be suspended vertically and of small diameter. They should be very strong and lock automatically at first contact with the deck. The third wheel in the rear will serve to steer. The back of the aircraft will be open to permit the pilot to get out in case it falls into the water. Possibly each naval aviator should be required to wear an inflatable belt and jacket so that he can come to the surface and maintain himself there.

"The speed of these vessels should equal at least that of cruisers, and even exceed it in order to escape pursuit by them. To achieve this, they must use the most perfected power plants. The boilers, composed mainly of tubular elements, could be made very light. I would not hesitate to apply the same principles as for an aircraft steam engine. The stoking will not be with soft coal, but with coke or anthracite to get rid of the smoke. The stacks, in telescoping sections, will be extended during ordinary steaming, but will

collapse below the deck during air operations. At such times combustion gases will be vented through two auxiliary funnels opening below the deck on port and starboard sides and as far aft as possible to get rid of the disagreeable and noxious odor of these exhaust gases.

"The opening in the deck through which the stack is raised and lowered will be closed by a trap door so as to offer an uninterrupted surface. Should there be a breakdown of machinery while the vessel is at sea and far from friendly ships, jury-rigged masts would be very useful. These could be erected and taken down using openings in the deck which would open and close like that for the stack.

"The storage of aircraft must necessarily be done below deck. There they will be solidly attached, each anchored to its place to avoid damage when the vessel pitches and rolls. Access between decks will be by means of an elevator, sufficiently long and wide to accommodate an airplane with its wings folded. A large sliding cover will fit the hole in the deck; its watertight seams will keep out rain and sea water in bad weather. Close by will be the shop where mechanics will repair the planes and maintain them ready for flight. Nearby will also be holds for stores and munitions.

"As I have explained above, the flight deck should be cleared of all

obstacles. I should add that the bulwarks should be fairly high for two reasons: to keep waves from breaking over the deck and to keep planes from falling into the sea in case of an accident. The port and starboard bulwarks will be fixed; those fore and aft will be moveable. When a plane takes off, the bow should be completely unobstructed; when one boards, the stern should be clear, while the bulwark across the bows should be raised.

"When there are hostilities, and even before general quarters sounds throughout the fleet, a plane will be held ready below deck. During a battle, with deck unobstructed and clear forward, the ship will swing smartly into the wind. The aircraft will be positioned on the stern: two launches, one on each side of the ship, will be manned and ready for lowering into the water. Pilots, officers, and mechanics, wearing their pneumatic jackets will be at their posts, calm and determined, knowing that lives depend on the sureness of their maneuvers. They will wait for the order 'Go,' transmitted by megaphone, siren, or signal flag. These majestic departures will always be moments of supreme emotion, felt by all.

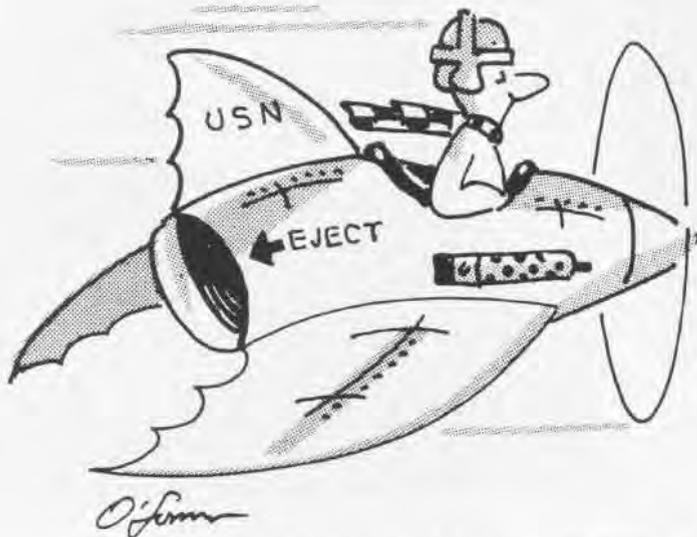
"When air operations are completed the airplane will return to the ship. As soon as they sight each other, they will exchange signals to tell the pilot the deck is ready to receive him; then the



"Pilots will be at their post calm and determined."

airplane will begin its maneuvers for boarding. It will find the ship turned straight into the wind, the stern clear for landing, the bows walled off by the bulwark, lightly padded in case the airplane should go past its prescribed stopping point. The deck will be clear of personnel, who are standing well to port or starboard. The two launches will be in the water, one forward and one aft, ready to rescue pilots should they miss the deck. Finally, flying low and straight into the wind, the plane will pass over the stern at a height of one or two meters. At that instant, the pilot will shut off all power, and with the front wheels locked, the craft will touch down and skid a short distance before coming to a stop. Then the vessel's captain will receive the flyers and express to them his admiration.

"To take off from a deck and to return to it seems today the height of temerity, its very conception has scarcely been thought of; but with practice and with our good sense to aid us, surely some day this maneuver will be an easy one . . ."



"The back of the aircraft will be open . . . in 'bat type' planes."

Water, water, everywhere, Nor any drop to drink.

The Ancient Mariner



A water pipe break recently threatened to leave 40% of Naples without water for a month because the Avellino area in which the break occurred is so inaccessible. Prospects were dim. Then U.S. Navy and Marine units entered the picture.

Charts of pipe lines in the area were studied by Lt. Col. John Solan; Col. Warren Cretney, Commander of Marine forces in Naples; an Italian worker; Cdr. Tom Thomas, head of the Navy Support Activity's public works department in Naples; AMAN Engineer Francesco Liberti; and Lt. Ronald Holst, Naval Support Activity. Italian aqueduct workers attached the needed sections of pipe to HMM-264's CH-46s. During the airlift over rugged, mountainous terrain to the damaged water line area, Marine personnel maintained ground communication with the helos. American-Italian teamwork had the water flowing again in a few days.



Photos by PH2 John Coleman



VF-142



The *Ghostriders* of VF-142, skippered by Commander F. L. Lewis, have completed a challenging and productive year.

FY 78 began with a deployment to the Med aboard *America* where the *Ghostriders* participated in numerous NATO exercises and in dissimilar ACM training against F-15 *Eagles* of the USAF's 36th Tactical Fighter Wing.

After the seven-month Med cruise, the squadron returned to NAS Oceana in April. Home, the *Ghostriders'* turnaround cycle included sending crews to Top Gun and Top Scope at NAS Miramar and participation in an invitational air war at the East Coast ACMR.

In July, VF-142 began a three-week fleet fighter ACM readiness course. Then it received its annual AdMat inspection and additional training.

In August, the squadron was awarded a safety certificate by Commander G. W. White, Jr., CAW-6, for five years of accident-free flying, believed a first for a *Tomcat* squadron.

The same month, the *Ghostriders* flew to NS Roosevelt Roads for 10 days of intensive gunnery practice. While at Rosey, every crew participated in competitive gunnery exercises. Two crews earned Es and four qualified.

Returning to Oceana, the aircrews began preparations for a Caribbean deployment on *Eisenhower* and an ORE.

It was a challenging and rewarding year. One that is repeated again and again as the Navy's fighter squadrons maintain their combat readiness.

Cdr. White presents safety award to Cdr. Lewis.



THEY WANT TO LOSE



The camera of PH2 Jerry Corbett captures a VAQ-33 A-3 returning home from Puerto Rico as AT Paul Norris gives the go-ahead to another pilot on the line.



Normally it would be an unhealthy attitude for a Navy unit to advocate losing. But when it comes to simulated combat against Navy ships and aircraft, the men of VAQ-33 really want to lose.

Tactical Electronic Warfare Squadron 33 is the Navy's professional enemy. When these bad guys lose, everyone else wins. Results show that the Navy's defenses are up to par. Of course, they don't always lose and that means more work and training for the good guys.

Flying any of five types of aircraft

— TA-3B, ERA-3B, EA-4F, EF-4B/J and NC-121 — the *Firebirds'* primary mission is providing electronic warfare training for the fleet. The 16-plane squadron is also involved with research and development. VAQ-33 is the A-3 fleet readiness squadron responsible for providing trained A-3 crew members and maintenance support personnel to the fleet.

In general, electronic warfare is the ability to interfere with and degrade radar detection systems. This is done by either electronic jamming, direct interference of the radar system itself or with chaff which causes false indications on the opposing radar. The ability to jam communications systems is also part of EW.

The squadron has three basic tasks:

- To provide electronic warfare training for ships by counterfeiting missile attacks on the ships' forces. It then becomes the job of the shipboard radar operators to act as a team and detect the presence of an attack and the direction from which it is coming, and then initiate defensive actions.

- To provide fighter training. The *Firebirds* create an electronic warfare environment for fighters to operate in. This enables the radar intercept officer to familiarize himself with jamming techniques and methods of counteracting electronic jamming.

- To develop new and more sophisticated missile detection systems and to evaluate their performance under realistic conditions.

VAQ-33 is an unusual squadron with a mission that varies. The *Firebirds*, consequently, are constantly on the road. They travel along the East and West Coasts, Hawaii, Puerto Rico, Canada, Northern Europe and many more places to provide the training necessary to help maintain the Navy's operational readiness.



AMSAN Calvin King strains to connect test equipment to an A-4 as VAQ-33 F-4B, EC-121K and EA-4F return from a training mission.



ADR2 James Tedder checks oil pressure in one of the 18-cylinder reciprocating engines of a VAQ-33 Constellation.

PEOPLE · PLANES · PLACES

Awards

Cdr. W. R. Needham and the *Tigers* of VA-65 won the MATWing-1 *Intruder* bombing derby award. The trophy, symbolic of bombing excellence in the A-6 community, was won during competition in several categories including day and night tactical bombing, and radar target identification.

Competing against the rest of the light attack community on the West Coast, the Lemoore-based VA-146 team composed of LCdr. Dennis McGinn, Lts. Marcel "Frenchy" Beaudu and Steve Firks and Ltjg. Al "Fred" Hogatt took top honors in a bombing derby. Ltjg. Hogatt won individual honors with the best bomb hit in both laydown and night dive and was named the best overall bomber in the competition. *Blue Diamond* skipper Cdr. L. H. Price presented the trophy to ADCS Joel West of the maintenance department, saying, "Maintenance personnel, as usual, played a major part in our winning this award. It is only right that the trophy be kept by them for this next year."

Top awards were announced during the Marine Corps Aviation Association convention at Anaheim, Calif., in October. Winner of the Robert Guy Robinson Award, Maj. Leonard R. Fuchs, is Naval Flight Officer of the Year. Aviation Ground Officer of the Year is Maj. F. M. Stitche and Capt. W. W. Smith, Air Controller of the Year. The Bud Baker Trophy went to Maj. W. K. Callahan, a *Harrier* pilot with VMA-513, for advancement of V/STOL technology. MSgt. E. D. Boyd won the James E. Nicholson Award for enlisted leadership. VMGR-152's WO2 T.D. Ruhter was named Fixed Wing Aircrewman of the Year. SSgt. G. T. Chavarria is Helicopter Aircrewman of the Year. Plane Captain of the Year is Sgt. D. B. Shrader and GySgt. B. B. Mertz is Electronic Technician of the Year. Squadrons of the 2d Wing

swept three of four unit awards, with HMH-362 winning Helicopter Squadron of the Year; VMA-542, V/STOL Squadron of the Year; and VMF-251, the Commandant's Aviation Efficiency Trophy.

Naval Air Reservist AT1 Steve Benefield was awarded a third set of wings in less than a year and a half by Cdr. Bill Hendricks, skipper of VR-52 Det, Washington, D.C. His latest qualification was as a C-118 flight engineer. He previously qualified as flight attendant and flight communicator on the C-118. Benefield was also designated a flight attendant evaluator in October 1977. He is unusual, not only because he has qualified in all possible aircrew positions in the C-118, but because he also remains qualified. The flight time and technical expertise to achieve this goal are very difficult. Benefield received his first aircrew wings as a radioman in the P-2 *Neptune*. Since then, he has flown over 2,000 hours.

Anniversary

On October 1, 1978, *Coral Sea* marked the 31st anniversary of her commissioning. Presently undergoing overhaul at the Puget Sound Naval Shipyard, Bremerton, Wash., the carrier was named after one of the more significant sea-air battles of WW II. *Coral Sea* has recorded over 272,000 carrier arrested landings.

The *Devil's Disciples* of VF-301, Miramar, recently celebrated their eighth birthday and 28,762 hours of accident-free aircraft operations, encompassing eight years of flight in both the F-8 and F-4. The squadron has recorded 998 day and 136 night carrier landings during this time, as well as winning three consecutive Battle Es and four CNO Aviation Safety Awards.

Rescues

Crews from HSL-33 rescued two Navy men from the waters off southern California in two separate incidents recently. LAMPS detachments from the squadron, home-ported at North Island, were operating from *Brooke* (FFG-1) and *Bradley* (FF-1041) during antisubmarine exercises. One night *Brooke's* helo crew received a rescue call from *Roark* (FF-1053). LCdr. Rob Crenshaw, Lt. Bill Fetzer, AW2 Rik Miller and AW3 Gary Clark raced to the scene. Frustrated by high wind and heavy seas, the helo commander sent Clark into the water to help a *Roark* crew member who had gone overboard. He was hoisted into the helo and delivered safely back aboard in 12 minutes. A week later, Lts. Dave Moulton and Jim Loiselle, along with AW3 Clay Rathbun, were flying a surveillance mission from *Bradley* when they were alerted that a *Bradley* crewman was in the water. The helo crew hovered over him, lowered the rescue sling and pulled him back on board within 10 minutes.

One evening VP-8's combat aircrew launched on a medevac from Bermuda to Philadelphia International Airport to transport a 33-ounce premature infant for medical treatment, because no commercial air transportation was available. The *Orion's* power supply was not compatible with the emergency portable incubator and, during the flight, the interior temperature of the P-3 was maintained at 95 degrees F. to simulate incubator conditions. Commending the crew, a doctor at Children's Hospital in Philadelphia told the baby's parents that if there had been more than a two-hour delay, their daughter would not have survived. The *Tigers* of VP-8 are commanded by Cdr. E. R. Riffle and are home-ported at Brunswick.

Et cetera

Prior to their performance in Air Expo '78 at Patuxent River, the *Blue Angels* were photographed with cadets and officers of



Dahlgren Division, Naval Sea Cadet Corps. The Washington, D.C.-based Sea Cadets worked at the air show, directing traffic in parking lots.



Enterprise, surrounded by small craft, is welcomed to Hobart, Tasmania, Australia.

PEOPLE · PLANES · PLACES

AB1 John Price (right in photo) cuts the ribbon officially opening the forward enlisted dining facility aboard *Saratoga*. Capt. Edward H. Martin, *Sara's* C.O., was present for the ceremony which marked the establishment of



the first "fast food" operation of its type in the history of the Navy. The new facility can turn out 4,500 hamburgers, 300 pounds of french fries and 220 gallons of milkshakes in a single day — for those who prefer the fast-paced atmosphere of a local hamburger palace, that is.

A former Navy steward was recently promoted to commander and became the AIMD officer at Lemoore. Robert L. Ferguson started



his naval career in 1951. "I didn't want to be a steward," he recalls, "but that was the policy for blacks in those days. I was pretty persistent in striving to change my rate and after making a 4.0 score on the airman exam, I was able to try for the aviation electronics rate, later changing to aviation structural mechanic." This led to service on board 9 different carriers, aircrewman flight time of over 1,500 hours, and more than 10 combat missions over Vietnam. During this period, Cdr. Ferguson attained an A.A. in social science, a B.A. in international relations and government and an M.A. in psychology — all by way of night school. He is now working toward a doctorate in human relations and education. In this photo, Cdr. Ferguson seems to be saying to AIMD machine shop supervisor, CPO Konrad J. Doll, "Will this be as strong as the original part?"

AC2 Debra Baker recently became the first woman to obtain full qualification in the



radar branch of the air traffic control facility at Whidbey Island. The average time required to obtain this rating is 18 months — Baker was certified for all operating positions in 16 months.

Records

Miramar's VF-213 set some impressive records during its 10 days of training at NPTR El Centro. On the gunnery range, the *Black Lions* scored over 100 banner hits, earning their second Century Banner, a first for an F-14 squadron. VF-213 sharpshooters were: Skipper Cdr. Terry Applegate, LCdr. Punches, Lts. Faharty and Lahren and Ltjgs. Loveless, Feist, Eyre and Clark. Off the range, performance by maintenance and ordnance crews kept the *Lions* flying with a better than 90 percent completion rate for scheduled sorties. The ordnance crews of "Gunner" Edenfield consistently loaded four to five aircraft in 15 minutes or less, and set a record for failure-free operation of the M-61 Gatling gun. Of the 25,932 rounds fired, not a single jam or misfire was recorded.

The *Sea Griffins* of HS-9 claim a record for an eight-plane HS squadron by flying 927 hours during one month. Flying the SH-3H they spent all but four days of the month at sea aboard *Nimitz*, participating in two NATO exercises. For the second time in 18 months, the *Sea Griffins* were awarded the bi-annual ComHSWing-1 Maintenance Trophy, the latest award covering the period January to June 1978.

The VA-115 *Eagles* recorded several *Intruder* aircrew milestones. LCdr. Mike "Rolly" Reilly surpassed 3,000 hours. Lt. Pasquale "Brigs" Brignola achieved 1,000 hours in his first fleet tour with the squadron. LCdr. Fred "Junkman" Jung became a *Midway* double centurion while Lt. John "Worm" Henson achieved first time centurion status aboard the carrier. Ltjg. Hal "Rooten" Tuten bagged his 100th *Midway* night trap, in addition to another record of 1,000 first-tour A-6 hours.

It was a memorable moment for OS1 Ken James of OI Division aboard *Midway* when he logged his 1,000th air intercept as an air intercept controller.

Change of Command

CinCLant Flt: Adm. Harry D. Train II relieved Adm. Isaac C. Kidd, Jr.

CLAW-1: Capt. H. Patrick Kober, Jr., relieved Capt. Bert Chase.

ComResPatWingLant: Capt. Richard J. Lanning relieved Capt. Donald R. Yeager.

ComResPatWingPac: Capt. Robert W. Case relieved Capt. James O. Coleman.

CVW-3: Cdr. Keith S. "Casey" Jones relieved Cdr. H. Patrick Kober, Jr.

FASOTraGruPac: Capt. Robert E. Fraser relieved Capt. Richard A. Bruning.

HC-6: Cdr. Larry W. Beguin relieved Cdr. Robert L. Cooper.

HM-12: Cdr. F. M. Dreesen relieved Cdr. E. E. Rogers II.

HS-75: Cdr. Edward A. Pencek relieved Cdr. Donald J. Coolican.

NAS Atlanta: Capt. Robert Cowan relieved Capt. Melville D. Cunningham.

TraWing-4: Capt. R. E. Williams relieved Capt. Marion H. "Red" Isaacks.

VA-94: Cdr. Paul Otto relieved Cdr. Jack Moriarty.

VA-146: Cdr. James A. Lair relieved Cdr. Lawrence H. Price.

VA-147: Cdr. Philip S. Gubbins relieved Cdr. Gary L. Harter.

VA-174: Cdr. John D. Rasmussen relieved Cdr. John F. Calhoun.

VAW-78: Cdr. William M. Mathews, Jr., relieved Cdr. John D. Summers.

VF-102: Cdr. William J. Denning relieved Cdr. Drex Bradshaw.

VF-171: Cdr. Richard J. McGuire relieved Cdr. Jerry B. Houston.

VP-5: Cdr. Charles H. Conley relieved Cdr. William R. Spearman.

VS-31: Cdr. Carl V. Lind, Jr., relieved Cdr. Henry L. Phillips, Jr.

The same day that NAF Detroit became a reality, NAS Grosse Ile was decommissioned after 40 years of training the reserve aviation community. And so, November 8, 1969, marked an ending as well as a beginning in the records of Naval Aviation.

Grosse Ile, an island in the Detroit River, had been a busy flight training center for many American and British pilots into the early Sixties. However, changing times and more sophisticated aircraft demanded a new base for the naval air reserve's modern planes. After delays spanning several years,

NAF Detroit was commissioned in 1969. It became a tenant at Selfridge Air National Guard Base, Mount Clemens, Mich., which had the jet-handling capabilities Grosse Ile lacked.

In moving to its new home, the Navy was in fact returning to Selfridge. Back in the 1920s, when Selfridge Field was an Army air base, the naval air reserve had maintained a Consolidated NY-1 trainer there from March 1927 to September 1929. The field was named in honor of 1st Lt. Thomas Selfridge, USA, the first military casualty of powered flight (be-

lieved to be the first man killed in an airplane accident). He was a passenger in a plane piloted by a youthful Ohioan named Orville Wright. The plane crashed at Fort Myer, Va., in 1908.

The Navy left Selfridge in 1929 for Grosse Ile when the naval air reserve base was commissioned. One officer and four enlisted men began training 25 reservists who reported aboard for weekend duty. They came from Michigan, Indiana, Ohio, Pennsylvania and New York. The station grew and doubled in size during WW II but, as

NAF Detroit

By JO2 Tim Padgett

FF-2s from Grosse Ile fly in formation in mid-1930s, above. The Molehill, former SAC ready facility, now houses weather, ops, BOQ and messing spaces, right. On opposite page, USAF reserve C-130s share ramp with a VP-93 Orion.





the years passed, Grosse Ile's old buildings became more and more expensive to maintain and its runways were too short for jet operations. They could not be extended and so the Navy returned to Selfridge to get the facilities it needed.

NAF Detroit has several tenants of its own, including naval air reserve force squadrons VP-93 and VR-52 Det Detroit, selected air reserve squadron VR-1 Det, a naval weather service environmental det, a naval regional medical center branch dispensary and MARTU Detroit. Based at the air facility are VP-93's nine P-3 *Orions*, three VR-52 C-118 *Liftmasters*, and one S-2 *Tracker* used for flight/navigation training.

Today, 200 active duty personnel train some 1,000 reservists monthly. They come from Michigan, Ohio, Minnesota and other neighboring states. AcDuTra deployments to overseas mobilization sites in 1977 included those to Sigonella, Italy, Mildenhall, England, and Keflavik, Iceland. Training and reserve tactical support wing aircraft commitments sent three VR-1 dets to Rota, Spain, one to Mildenhall and a one-plane det on a five-month deployment with *Unitas XVIII*.

The Navy shares the Selfridge facility with many neighbors. In addition to the Michigan Air National Guard which is headquartered there, the Army, Air Force, Coast Guard and Marine Corps all have active, as well as reserve, forces aboard. Captain Alfred N. Schaaf commands the air facility and oversees the training of its twenty-plus reserve units.

The future holds many challenges but NAF Detroit will continue the tradition begun by a small group of sailors-of-the-air in Michigan more than 50 years ago.

Amelia Earhart . . .



Paul Mantz, Amelia Earhart, Capt. Harry Manning and Fred Noonan

Spy in the Sky?

By J. Gordon Vaeth

Was Amelia Earhart on a spy mission when she and her navigator, Fred Noonan, took off from Lae, New Guinea, for Howland Island on July 2, 1937? Did their flight plan secretly call for her to deviate from her announced course in order to overfly and observe Japanese fortifications on Saipan or Truk? Had she been asked by the Navy, or even by President Roosevelt, to reconnoiter the Marianas and Carolines?

These questions — and many like them — have been asked ever since Lockheed *Electra* NR16020, stripped of every pound of excess weight and carrying every drop of fuel possible, lifted off from the runway at Lae. Earhart and Noonan were on the final stages of a world flight that had taken

them from California to South America, across the Atlantic to Africa, then on to India, Southeast Asia, Australia and, finally, New Guinea. Howland, their next stop, lay 2,550 miles to the north and east. After that would come Honolulu and then California again.

As the world knows, the *Electra* 10E never reached Howland. To help the flyer find it — the oval-shaped island is only two miles long, one-half mile wide and 20 feet high — the Coast Guard cutter *Itasca* was standing by to serve as a communications center. The hours spent by those aboard that ship during the long night of July 1-2 (Lae was on the other side of the international date line) were never to be forgotten. Neither would the confusion that reigned, the failure of Ear-

hart to acknowledge messages or transmit when expected to, and the frustration of being unable to get a directional bearing on her too-few and too-brief voice transmissions.

Her silence, plus the fact that until late in the flight she wanted to take bearings on the *Itasca* rather than the *Itasca* taking bearings on her, was puzzling to some. Although the reason may simply have been inadequacies of the radio equipment — she had left her CW key and trailing antenna behind to save weight — it contributed to the post-flight speculation that early on in the flight she might have been where she wasn't supposed to be. Also that she might have been approaching Howland from an unexpected direction.

Such speculation persisted and reached its peak in 1943 when Hollywood released *Flight for Freedom*. Rosalind Russell played Tonie Carter, an American woman flyer who agrees to get "lost" on an island in the Pacific to give the U.S. Navy an excuse to search for her in Japanese waters. Her companion on the flight, Randy Britton, was portrayed by Fred MacMurray. Although Tonie Carter and Randy Britton were depicted as fictional characters, the film left no doubt that they were supposed to be Amelia Earhart and Fred Noonan.

This movie, appearing when it did at the height of the war, shown to servicemen everywhere, and promoted as a "now it can be told," was probably more responsible than anything else for the stories and rumors that circulated during and after the battles in the Pacific about Earhart, Noonan, their "mission" and their fate. That Earhart might be found on Saipan was the subject of nervous precombat banter by the men in the landing craft approaching its beaches. Whether Earhart and Noonan had flown aerial reconnaissance over Truk was reportedly a subject of wardroom conversation by carrier-based pilots en route to attack it in 1944.

New light on an old mystery

In the early 1960s, new information was uncovered, leading to a new line of speculation.

From Saipan in the Marianas came stories of a white woman and white man, said to have been flyers and spies, held captive by the Japanese before the war. One eyewitness even pinpointed the year of their arrival as 1937. The woman was thin, had short hair and was wearing men's clothing. Supposedly she had died of dysentery in Garapan, Saipan's chief town. The man was presumed executed.

From the wreckage of an aircraft lying on the bottom in Saipan waters a Bendix-type generator had been salvaged that perhaps had been aboard the *Electra*.

And from a gravesite, also on Saipan, remains, possibly Earhart's and Noonan's, had been flown to the United States for identification.

This new information was heady stuff for anyone interested in mysteries or aviation. It was particularly so for me, perhaps in part because I once had some slight personal contact with Amelia Earhart. I had corresponded with that gracious lady when she was at the peak of her aeronautical career and I was a teenager fascinated by everyone and everything that flew.

Most of this post-war information had come to light through the extraordinary efforts, energy and persistence of Frederick A. Goerner, then of radio station KCBS in San Francisco. Intrigued by what he had found out, I arranged an evening meeting in Washington with him. I left it infected with his enthusiasm and believing that Earhart and Noonan might very well have been flying a spy mission, might have fallen into the hands of the Japanese and might have died on Saipan.

Searching for Answers

I decided to make my own investigation, working from a vantage point within the weather service rather than from outside as Goerner had been doing. My motivation was simple: I believed that if Earhart and Noonan had given their lives for their country, the nation owed it to them to recognize and honor their martyrdom. Because I was unable to find anyone in government vigorously pursuing the subject, I undertook the search for the answers myself.

Against a background of Japan's fortifying and closing her mandated islands, the U.S. Navy's hunger for intelligence information about those areas, the international competition for commercial air routes across the Pacific, and the tales of the *Electra* possibly having been equipped with cameras and unannounced higher performance engines (even swapped for another plane), it was a formidable task to sort fact from speculation.

The search for information led me to a variety of possible sources: several members of the wartime Office of Strategic Services; presidential candidate Thomas E. Dewey; three Marine Corps commandants, two of whom I talked with personally about Saipan; Vice President of the United States Wallace; Secretary of State Byrnes; four members of Franklin Roosevelt's Cabinet; Fleet Admiral Nimitz; Muriel Morrissey, Amelia Earhart's sister; Noonan's supervisor while with Pan American Airways; curators of libraries or document collections specializing in Far Eastern subjects and dozens of persons in government offices.

At no time did it appear that anyone was trying to be evasive or attempting to hide behind the screen of national security or classified information. In fact, I don't remember discussing any classified matter at all. Except for no more than perhaps a half-dozen, all of those contacted replied to my written or telephoned requests for information. I concluded that there was no cover-up of any of the facts concerning Earhart and Noonan being attempted.

Secret Assignment

I also concluded that they were not on any kind of spy mission for the government. President Roosevelt would almost certainly have known of such an assignment. If he did, none of his friends or colleagues whom I was able to locate had any recollection of his ever having said anything to that effect. It is a recorded fact that he assisted in getting the Navy to agree to refuel Earhart in flight over the Pacific (when she was interested in doing that) and later in arranging for the air

strips to be built to receive her at Howland (after she had changed her mind). The President's role in her flight does not seem to have gone much beyond that, however.

According to Elizabeth J. Drewry, director of the Franklin D. Roosevelt Library in 1964, "... There is no evidence in the papers in this library to substantiate the stories that President Roosevelt planned any part of the around-the-world flight of Amelia Earhart, sent her on any sort of 'mission,' or planned the attempts to find her. . . . There is evidence of President Roosevelt's interest in the search for Amelia Earhart but there is no record of any action taken by him."

Henry Morgenthau, Jr., Secretary of the Treasury, reportedly shared Roosevelt's increasing concern over the Japanese military buildup in the Pacific. The Coast Guard was a part of his department and it was a Coast Guard cutter that had been sent to Howland to home the *Electra* in. If there was a secret aspect to the flight Morgenthau could well have known. He advised me that he had no information about any such mission.

From a veteran airman and friend, I gained the following perspective: "... I attempted to dissuade her from the flight from its very inception. But she was adamant. Her argument to me was that as a result of the flight she could achieve financial independence. At no time did any other consideration enter the discussion of the flight. My objection to the flight was purely on the basis that the equipment and ground support were inadequate to guarantee success. The mid-Pacific target made the calculated risk a sheer gamble, in my judgment."

The real clinchers that there was no secret mission came from two names apparently overlooked by other investigators into the Earhart-Noonan puzzle: Harry Manning and Charles Edison.

Poorly remembered is the fact that Amelia Earhart made not one, but two attempts to fly around the earth at the equator. Both took place in 1937.

Both involved her Lockheed *Electra*.

Her first attempt was in a west-bound direction originating at Oakland and crossing the Pacific via stops at Honolulu and Howland. She was to take along two expert navigators: Frederick J. Noonan and Capt. Harry Manning. Noonan would leave the flight at Howland and return on the Coast Guard cutter that would be there. Manning, on leave from the United States Lines, would navigate the Howland to New Guinea leg, the leg on which any secret reconnaissance of Japanese fortifications would have taken place.

But the westbound crossing of the Pacific was not to be. The run from Oakland to Honolulu went beautifully. On takeoff from Honolulu, however, on March 20, 1937, the silvery twin-engined plane looped, severely damaging its undercarriage and a wing.

Immediately, Earhart and her husband, George Palmer Putnam, arranged for shipment of the *Electra* to Lockheed for repair. In May she was ready to go again, this time west-to-east with only one navigator, Noonan. Manning had returned to his ship.

Only two months had elapsed between Earhart's unsuccessful takeoff for Howland from Honolulu and the start of her second world flight. If she was intending to scout the Japanese mandates on her eastbound trip, it is logical to assume she had also been planning to do so on the earlier westbound. What better person to ask about her intentions in that respect than the man who was to have navigated her over that particular part of the route?

I located Harry Manning, retired and living at the New York Athletic Club. In a brief handwritten note, he said: "I am positive there was no government influence or mission of any sort . . . she, or rather we, had no official or unofficial spying mission in mind."

Charles Edison was another man who should have known, particularly if she had been on a mission inspired or arranged by the Navy. The son of

the famous inventor, he was Assistant Secretary of the Navy at the time of the flight and later became Secretary.

According to Edison: "One thing I can say is that I am satisfied Amelia Earhart was not flying on any Navy mission. The matter was thoroughly discussed at the time and no one with whom I talked in the Navy mentioned any mission that she might have been on. The island of Truk was being fortified by the Japanese in violation of treaties and the Navy was very much interested, of course, in finding out more about Japanese operations in the surrounding islands, but we were always careful not to cause any incident. I feel certain that Amelia Earhart's flight was for some purpose of her own."

To my mind, Harry Manning and Charles Edison, both now deceased, provided enough information to decide once and for all the question of secret flight. Furthermore, if it had been the former, why did George Palmer Putnam, who managed his wife's business affairs and flight arrangements, not come out sometime before his death (about 1950) and say so? He, too, would certainly have known. But, as far as I could learn, this publicity-conscious and promotionally-minded man never did so. He is said to have spent considerable time and money trying to learn his wife's fate. This included visiting Saipan.

Clues on Saipan

Saipan, again and again the trail seemed to lead to that hilly island, 14 miles long and two to five miles wide. Were Earhart and Noonan ever on it? Did they die as prisoners there?

I was never able to get satisfactory answers to those questions, even though Goerner helpfully kept me informed of developments concerning them. He made at least four trips to the Central and Western Pacific to try to search them out.

Lead after lead, clue after clue,

seemed to fall apart. The aircraft generator was found to have metric-sized threads and bearings made in Japan. The remains that had been exhumed and flown to the States were identified as those of Saipan natives. A picture or pictures of Earhart in the company of Japanese officers had allegedly been found on the island but no copy ever survived. What I thought might prove the most tangible clue of all – a book in which the mysterious white woman prisoner on Saipan was supposed to have written something for a young girl – turned out to be a blind alley.

So it went, until, in my opinion, the only remaining viable clues were the eyewitness reports of persons seen resembling the missing pair. The first of these accounts was apparently volunteered and not “suggested” as a result of anyone asking questions.

In 1964, the U.S. *Naval Institute Proceedings* published for me a request for information from U.S. Navy or Imperial Japanese Navy personnel concerning events during that period of July 1-2, 1937. I received only one reply, but it was startling.

It put me in direct touch with a former Army technical sergeant who had been on Saipan following its capture. While there, a native woman had pointed out to him an unmarked grave where, so she gave him to understand, were buried a white man and woman who had come from out of the sky. His information had apparently been the basis on which the remains had been recovered that were sent to America.

I was fascinated by what he told me. Even more so when he said he had seen the famous *Electra* in a hangar at the former Japanese airfield, Aslito, on Saipan. “You mean you actually saw the Earhart plane?” I asked him. He replied by telling me he could remember the first letters or digits of the registration number painted under the wing. He recalled, too, seeing the words Hamilton-Standard on the propeller blades. An incredible story, made all the more incredible when he

added that he had later watched that same aircraft being doused with gasoline and burned.

To this day, I cannot reconcile his story with the other Saipan information I possess.

Theories

In 1966, Doubleday and Company published Goerner's *The Search for Amelia Earhart*. In it he concluded that she had scouted Truk, missed Howland and backtracked to try to pick up the British-owned Gilberts. He believed she did find land but that it turned out tragically to have been the Marshalls instead. After crash-landing there, she and Noonan were picked up by the Japanese and later removed to Saipan where they were held until they died. Goerner did not mention it in summarizing his findings but conceivably their plane could also have been transported to Saipan, thereby accounting for the Army sergeant's claim to have seen it there.

My own conclusion is that there is no hard evidence of any kind to support a finding other than that the *Electra* simply ran out of gas and its pilot and navigator were lost at sea.

A weather analysis, prepared by a Navy meteorologist in Hawaii, showed severe weather and strong headwinds between Lae and Howland at the time of the flight. One of Earhart's few radio messages mentioned “overcast,” meaning that Noonan may have been unable to take celestial fixes.

In the absence of positive evidence to the contrary, I now believe that the flight ended when the tanks of the *Electra* went dry and its Wasp engines were stilled.

Yet there is the nagging question of those eyewitness reports, certainly not strong evidence, but strong enough to keep the door open to the possibility Earhart and Noonan were captured by the Japanese.

It was her friend Eugene Vidal, I believe, who told me, as Goerner's book suggested, that her plan was to

retrace her flight path and try to find a landing place in the Gilberts if she couldn't locate Howland. If she did this and if she was north of her projected track, she would have ended up in the Marshalls. And that's why one particular report of her being seen there is of special significance.

This information came to light through a former U.S. Navy officer who was a member of the military government established in the Marshalls after American forces landed there in 1944. This officer, now a Washington, D.C., attorney, was told by a native, considered highly dependable, that before the war a plane had landed in the Marshalls and that a woman flyer, a white woman, had been picked up and taken away by the Japanese. This native said nothing about the woman having had anyone with her. He was repeating only what he had been told by a Japanese who was presumed dead by 1944. This was thirdhand information but potentially significant enough to keep alive the thought that NR16020 might have come down in the Marshalls, and that its wreckage might still be there.

Time is running out. The trail of Amelia Earhart and Fred Noonan is growing cold. Additional information will become increasingly difficult to come by. Yet the quest will go on.

Amelia Earhart was more than America's most famous woman flyer. She was, in her day, the most famous woman in the world. The possibility of being the one to solve the mystery of her disappearance is tremendously appealing. Publication of these observations will, it is hoped, minimize future speculation and direct the efforts of tomorrow's investigators into the most promising areas.

Gordon Vaeth, Director of System Engineering at the National Environmental Satellite Service, investigated in depth the circumstances surrounding the last flight of Amelia Earhart. This article is adapted from the National Oceanic and Atmospheric Administration Magazine, July 1977, the 40th anniversary of Amelia Earhart's disappearance.

The many sides of DUTCH SCHILDHAUER

By Commander Rosario Rausa

Dutch Schildhauer can look back on a pair of full-time professional careers devoted to aviation. As a Naval Aviator he was a guiding force behind the Naval Air Transport Service, not to mention a cornucopia of other achievements. As a civilian with Pan American Airways, he was hailed by a *Baltimore Sun* reporter as "one of the world's leading authorities on large flying boats and their transoceanic operations." A spry and natty octogenarian, the Captain is retired now, quite content with his unparalleled record of accomplishments and a memory book abundant enough to fill the mammoth Do.X flying boat he piloted between labors for the Navy and Pan American. He has traveled to the far corners of the earth and, in one sense, has been a master of the globe.

Dutch Schildhauer remembers Veracruz. It was 1914 and as a teenage hospital corpsman assigned to USS *Arkansas*, he was part of President Woodrow Wilson's naval force dispatched to Mexican waters to protect American interests during a conflict there.

"We dyed our whites in tubs filled with a chemical solution," he says, "which gave our uniforms a coffee color for camouflage purposes."

After two years as an enlisted man, Clarence Henry Schildhauer, born on December 29, 1895, in New Holstein, Wisc., passed the necessary exams and moved on to Annapolis. He graduated with the class of 1919, got his commission and joined the surface Navy.

After several "black shoe" assignments which took him to France, Russia and the Baltic, Dutch opted for Naval Air. Just before Christmas 1922, he was designated a Naval Aviator.

He flew with Scouting Squadron One and then served at the Naval Aircraft Factory in Philadelphia where he carved a notch in aviation history. He headed a four-man crew which flew a PN-9 on an epic, nonstop flight for seaplanes. The durable flyers set an endurance record of 28 hours and 35 minutes in the air. They landed only after all fuel had been exhausted and the engines were sputtering to a stop. On page 37 of this issue, a graphic account of that event is reprinted from *The Philadelphia Inquirer*, complete with reference to the cold coffee that an evildoer supplied the unsuspecting crew before they took off. That was in May 1925. Befitting the oscillatory life of a pioneer Naval Aviator, he was flying in a landplane out of NAS Lakehurst that same month when the engine quit at 300 feet. He was forced to hit the silk and earned membership in the Caterpillar Club.

Transferred west, he was assigned as the second alternate

pilot for a proposed, nonstop flight from San Francisco to Honolulu in the same PN-9 which set the endurance record. Commander John Rodgers, Naval Aviator No. 2, captained the aircraft on its crossing. He and his crew were forced down short of Hawaii, were lost for nine days, and forced to sail backwards to Hawaii. Not a resounding success, the flight nevertheless served notice that man and his flying machines would continue in their quest to conquer the ocean expanses.

Schildhauer later did considerable experimental work before taking command of VX-1 (the first experimental squadron) in the summer of 1927. In this assignment he was instrumental in the development of the radio compass



and the first auxiliary power plant for operating emergency radios in flying boats. The need for these was spawned by Rodger's Hawaiian flight experience when the PN-9's transmitter became inoperable due to lack of fuel to run the plane's generator.

Schildhauer's device, which cost \$20, was an auxiliary power plant and was mounted on the wing above the V struts in the flying boats. He experimented with the Bellini Toss direction finder, which he had first seen on an Italian ship berthed in Norfolk, and tried to apply it to aircraft. It had a single mast and antenna and, after some modification it worked. He also advocated development of a left-hand sextant which allowed navigators to more comfortably write with their right hands while taking their readings. Schildhauer also helped develop one of the earliest fuel flow meters made from an airspeed meter and contributed to improvements in bubble sextants. He served again at the



Schildhauer, a flyer in furs, poses in 1924, left. Below, jaunty sailors in dyed uniforms man a Fiat captured at Veracruz and used for delivering messages. Most of these and succeeding photos come from the Captain's scrapbook. Bottom, U.S. sailors are relieved by Army soldiers on a Veracruz thoroughfare.



Naval Aircraft Factory in Philadelphia and skippered Utility Squadron Three where he made important aerial surveys of the coastline of Cuba and lighthouses along the Gulf of Mexico in support of the U.S. Hydrographic Office.

Next, he flew with Torpedo Squadron Nine and Patrol Squadron Eight until early 1930 when he resigned from the Navy and affiliated with the Naval Reserve as a lieutenant. He went to work for General Motors Corporation but was given leave to fly the Dornier Do.X flying boat. It was considered the largest successful airplane in existence at the time. Schildhauer test-flew the machine after it was equipped with a dozen American-built, 600-hp engines. His flights took place on the Bodensee (Lake Constance), a body of water which borders on Germany, Switzerland and Austria.

He was copilot on the giant bird's transAtlantic flight from Lake Constance to the Canary Islands and on a

journey from Rio de Janeiro to New York. He then joined Pan American Airways and after two years as assistant manager of Caribbean operations, took over as operations manager of the Pacific Division, based at Alameda, Calif. He made many trips to the field closely monitoring the first 100 transPacific flights by Pan American flying boats. Importantly, he spearheaded a training program for flight crews, focused on weather patterns, navigation techniques and planning for flights covering long overwater legs.

He insisted that captains file reports on every flight, covering crew performance, weather and overall conduct of the hops. A backlog of data was built up which, in the long run, led to safe and expeditious Pacific crossings by aircraft.

In 1933 he made a survey of the mid-Atlantic areas for flying boat operations from New York to Europe via the mid-Atlantic, Bermuda, Azores, Lisbon and Bordeaux, France, and, in 1938, was operations manager of Pan Am's Atlantic Division for the entire initial operations.

After Dutch left Pan American in 1939, he worked for the Glenn Martin Company and helped convert the Martin Mars from a bomber to a seaplane transport for the Navy. In June 1941, he also made recommendations to the Navy Department which fostered formation of the Naval Air Transport Service. He had maintained his reserve status during this civilian interlude, drilling at various locations and, six days before the Japanese struck at Pearl Harbor, he was recalled to active duty as a commander. Wisely, the Navy made him officer in charge of the Naval Air Transport Service which was sanctioned by the Secretary of the Navy shortly after the outbreak of hostilities.

In the fall of that year, he was assigned to the Naval Attache at the American Embassy in London and made studies of transAtlantic air transport operations in the British Isles. He visited Northern Ireland in 1943 and was

next assigned to the Commander U.S. Naval Forces, Europe, again working on air transportation matters. His logistics planning made use of Port Lyautey, Morocco; Bathurst, Dakar; and Fisherman's Lake, Sierra Leone for Naval Air Transport operations. In 1944 he toured Saipan, Australia and New Zealand, inspecting all Naval Air Transport Service units in the field.

Back in the U.S., he became Assistant Director, Plans and Logistics, for the Naval Air Transport Service in the Office of Deputy Chief of Naval Operations (Air). In March 1945, he was transferred to Patuxent River as coordinator of project JRM which involved accepting the Martin Mars seaplane transports and organizing their operations from the West Coast in support of war efforts in the Pacific theater.

Dutch retired from the Naval Reserve in August 1947, went back to work for the Martin Company and the aviation bureau of the Baltimore Association of Commerce. But in the summer of 1951, he moved once again. He became vice president and assistant general manager of General Chennault's Flying Tiger Airline, Civil Air Transport, and was headquartered in Formosa. The airline operated throughout an area extending from Korea to Thailand.

He returned to the U.S. in May 1953, joined California Eastern Aviation, Washington, D.C., and later served with Bendix Field Engineering until 1968. He now lives in Owing Mills, Md.



Schildhauer, center, and record-breaking PN-9 crew wait while seaplane is secured at Philadelphia after flight, above. A spiffy-looking Lt. Dutch Schildhauer in the early days is below. After leaving the Navy the first time, Schildhauer flew the Dornier Do.X, shown high and dry for some repair work at Lisbon, Portugal, bottom.



Pan Am

An analysis of the entire navigational data of the flights (two separate San Francisco to Honolulu Pan American flights) indicates that it is impossible to determine consistently accurate positions during extended overwater flight, but that a degree of accuracy which will insure safe navigation and reasonably direct tracks may be obtained by careful consideration of existing conditions when utilizing dead reckoning, radio direction finding, or celestial navigation.

F. J. Noonan



Above, Dutch evaluates bombsight, one of his projects at the Naval Aircraft Factory. Basic devices for the navigator in the 1920s included sextant, howgozit chart, time pieces, compass and parallel rule, left. At far left interested parties examine direction-finding equipment on a VS-1 PN-9.



Fred Noonan was the Pan American navigation instructor when he wrote those words on April 29, 1935, two years before his ill-fated flight with Amelia Earhart. His remarks fairly reflected state-of-the-art navigation techniques which existed for transPacific flying at the time. Dutch Schildhauer had worked closely with Noonan, especially during his Caribbean days.

"Fred was a rated master mariner," recalls Dutch, "and when he was the airport manager at Port-au-Prince, Haiti, I sought his assistance in setting up a training program for navigators and pilots. We had no books, so we generated our own texts with examinations to match.

"We enlisted the help of the International Correspondence School in Scranton, Pa.," he continues, "which published the texts based on a syllabus we provided. We told an apprentice pilot what to study and what stages he had to complete before being promoted up the line. We looked at each flyer's educational background, plotted a mean learning curve and developed a method so that we could track the individual throughout his career all the way to the top position of Master of Ocean Flying Boats."

Says Dutch, "Fred did an excellent job on the navigation portion of the syllabus. He was a very sincere man with better than average intelligence."

He believes that Amelia Earhart and Fred Noonan got lost on their record-setting trip in 1937 (see article, page 28). "There is no other logical conclusion on that matter," he states. "I met Amelia once, by the way. We had a business breakfast one morning at the Mark Hopkins Hotel in San Francisco. In attendance was the steel company

executive involved in building the Golden Gate Bridge. I found Miss Earhart to be a delightful person. She gave the impression of being a most respectable young lady. In retrospect, I'm not sure she knew an awful lot about navigation and, of course, that's why she chose Fred to accompany her on the round-the-world journey."

Juan Trippe, long time head of Pan American, directed Dutch to make a comprehensive survey of the Pacific air route structure, such as it was in the early 1930s. Schildhauer visited Hawaii and Midway, among other places, gathering knowledge and defining the problems that transPacific flyers faced. As early as 1925, during the PN-9 days, Dutch already was interested in flying the Pacific: Hawaii, Midway, Wake, Guam, and finally Manila.

Key concerns were weather and navigational equipment. Radios were of some aid and celestial navigation conducted with a trusty sextant was most helpful — if the skies were reasonably clear. Otherwise, dead reckoning was the principal method of finding a way to the next checkpoint, not a simple task when traveling over great distances of open sea.

Weather information was rudimentary at best and primarily supplied by surface ships, augmented by limited ground station reports. Ship routes varied and ships themselves were often scattered about. Sometimes several vessels were bunched together resulting in very limited meteorological information along the full breadth of aerial routes. Reports gave a far from accurate weather picture. Meteorological equipment wasn't always properly calibrated and consistently accurate information was more a dream than reality.

Drift meters and floating smoke flares, for obtaining drift readings day or night, helped the flyers. Direction-finding stations along the way in California, Hawaii, Midway, Wake, Guam and Manila were eventually established.

In any event, Schildhauer had an ideal background for the task given him by Trippe. He remembers what he learned from the Hawaiian flight experience:

"I was a lieutenant in 1925 attached to the Naval Aircraft Factory but assigned as chief test pilot for the Hawaiian flight which began in San Francisco. I had also been in charge of assembly and preparation of all the PN-9s which made it logical for me to assist Cdr. Rodgers. There were strategic overtones to conquering the Pacific as well.

"Hawaii is 2,100 miles from San Francisco, [then] 25 hours by air. This translated to a combination day and night flight to cover the distance and constituted our major challenge. Key stepping stones across the Pacific after that were Midway, Wake, Guam and, finally, Manila. These interim legs involved a 1,500-mile flight to Midway, 1,035 to Wake, 1,335 to Guam and 1,500 to Manila.

"Midway is only 2 1/2 miles long and pear-shaped but has two inlets ideal for sheltering seaplanes. Wake has a coral-bottom lagoon which forms a seaplane anchorage. Guam towers 1,300 feet above sea level, making a perfect landmark and has excellent anchorage. In fact, in 1925 the Marine Corps had a small aviation detachment there. Manila also had reasonably good facilities. Importantly, along much of the route after Hawaii, there were prevailing easterly winds to push aircraft along.

"By making our outlying possessions potential aviation bases, the security of our far eastern possessions was increased. Thus, the flight across the Pacific, an air route of about 7,000 miles, could be made in 100 flying hours circa the mid-1920s. With the exception of the first leg to Hawaii, the others could be flown from dawn to dusk."

Pan American concerns were more business related than strategic. It was delivering mail and people and meeting departure and arrival times.

"If we couldn't get a hop out within a five-day span," Dutch says, "we cancelled that run and instituted another."

Dutch felt that airport managers, especially those at Midway and Wake, had to know the principles of dead reckoning and radio direction finding almost as well as the flight crews. As he did in the Caribbean, he organized a well standardized training syllabus for Pan American's Pacific crews.

Some of the first Pacific flights exposed the shortcomings of ship weather reports. One of his assistants reported "...weather reports from ships at sea are not reliable, neither as to observed conditions nor as to accuracy of instrument readings. Several ships in the same vicinity will report data of such diverse nature that no other conclusion can be drawn...The uncertainty of actual front locations makes it difficult also to forecast wind directions and velocities. Even with an accurate analysis of pressure center movements, wind directions and velocities



Schildhauer, Sutter, Woolson and Kyle after milestone PN-9 flight.

can only be surmised. Two or more upper air observations taken from ships at sea on the route would be of great value, not only for the exact wind direction and velocity data that would be utilized by the pilot, but also such information would assist in determining the position or vertical thickness of air masses."

It was apparent that the U.S. Weather Bureau, which had already participated to a limited degree by providing information, had to step up its activity.

As the aircraft became more complex, Dutch advocated even more intense training for the crews and improvement of the flying boats' air and seaworthiness. He believed it critical to very carefully evaluate the abilities of flight personnel, not only to measure their dexterity in handling the machines but their meteorological and navigational knowledge as well. Because there were no field runways in the Pacific to accommodate landplanes, Dutch became a strong advocate of improving what facilities were available.

"The safety factor with flying boats was greatly increased over landplanes," he says, "for the simple reason we had plenty of adequate surface for setting down. That is, of course, if the sea state didn't get out of hand.

"The majority of the transPacific flights were made above existing cloud layers which, generally, were at an average altitude of about 8,000 feet. As the hours droned on, crews were occupied by the meticulous monitoring of fuel consumption and tracking their path over the sea. Unlike air route structures of today, the policy then was, in summary, 'get to where you want to go as expeditiously as you can but avoid bad weather when possible.' Serpentine tracks through the sky were not uncommon.

"We had to keep in mind that flight crews weren't superhuman. We tried to simplify their duties; eliminate some of the paperwork involved with celestial navigation for instance. We proposed simplification in the planes themselves which were beginning to get complicated. This meant more work for the crews.

"It was a learning process," he adds, "something we had to go through to conquer the Pacific. We had our problems but we prevailed."

Those who travel by air along the ocean routes of the planet Earth owe a tip of their hats to Dutch Schildhauer and the people like him. They were the pioneers who built the foundation of knowledge and experience which make such travel almost routine today.

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TEN CENTS

PN-9 Smashes World No-Stop Flight Record

"The flight of the PN-9 more than demonstrates the fact that, with trade winds, the seaplane can make the flight from San Francisco to Honolulu this summer."

This was the enthusiastic statement made by Henry Cocklin, project engineer of the flight of the PN-9, as the giant seaplane drifted down as gently as a bird, from the air, yesterday afternoon, at 2:58 o'clock, after having been in the air 28 hours, 35 minutes and 27 seconds, almost doubling the previous record, and the flight ended only because the gasoline supply was exhausted.

As the machine, alternately controlled by Lieutenant C. H. Schildhauer and Lieutenant J. R. Kyle, roared its triumphant way through the night, the enthusiasm of the officials of the aircraft factory and the entire Navy Yard personnel became more and more vociferous.

The fifteenth hour was passed, the infrequent messages dropped from the duralumin plane by the crew having given no indication of anxiety, and the official world's record for continuous flight by a seaplane had been topped.

End of record flight

A few minutes before 3 o'clock yesterday afternoon the watchers had ceased to gaze so expectantly at the sky. The vigilant camera men had taken comfortable seats at various points along the cement retaining wall in front of the hangar and the naval officers were gathered about in small groups, discussing baseball and their individual affairs. Several thousand feet above the low-lying Jersey marshes the wings and the fuselage of the plane were etched in silvery gray. As it turned in its shortened flight back and forth across the river, the propellers were seen to cease their revolutions, and the blunt gray nose dipped sharply toward the rippling waters of the river.

"She's coming down!" an excited photographer cried, as he

made a dive for his camera. In an instant the slip was a scene of frantic activity. A motor launch nosed its way out from the shore, while a crew of workmen hastily donned their canvas wading boots and laid hold of the heavy landing ladders lying on the causeway.

Down, down, down, the ship plunged at a sharp angle, the wind singing a hoarse melody through its metal wings and rigging. When but a few feet above the water, the pilot brought the nose up gently, and straightening out into a beautiful glide, the boat hull took the water, driving before it in a cresting wave a long breaker of spume. The steam whistle on a donkey engine nearby set up a shrill shrieking — the only articulate voice to welcome back to security the hardy men who had achieved another victory in the conquest of the air.

Crew temporarily deaf

As the seaplane, like a huge, prehistoric bird, came to rest, gently rising and falling in the trough of the river, one outrigger resting on the water, four bundled figures rose from the cockpits. A conglomerate roar of applause rose from the crowd assembled on the pier.

As they stripped of their goggles, and unfastened the chinstraps of their leather flying helmets, it was not difficult to see lines of deadly weariness in their faces, although Lieutenant Schildhauer grinned his perpetual, irrepressible grin, as he swung down the gangplank to the pier. A fellow officer stepped to the very edge of the inclined causeway, and took him by the hand, murmuring a few words of congratulation.

"Can't hear a thing!" shouted Schildhauer, thumping the side of his head with one gloved hand. Lieutenant Kyle, following him, was also rubbing one ear energetically. The ceaseless roar of the powerful, 500-horse-power motors had rendered the entire

crew temporarily deaf.

Previous figures almost doubled

Captain L. M. Woolson, aeronautical engineer, and Chief Machinist's Mate C. J. Sutter were the two other occupants of the ship that almost doubled the previously existing world record for continuous seaplane flight. The former record was for 14 hours, 53 minutes and 42 seconds, established on July 11 and 12 at Washington, D.C., by Lieutenants F. W. Weed and J. D. Price. In 1919 a seaplane at Hampton Roads established an unofficial record of 20 hours and some minutes, but the flight was not allowed.

The four men, all of them with wind-reddened and grimy faces, bloodshot eyes and sagging shoulders, were literally mobbed by the crowd of braided and brass-buttoned officers, overalled workmen and a number of stenographers from the aircraft offices.

Who supplied cold coffee?

But what was it that the men themselves thought of, above all else, as they climbed the concrete causeway and entered the frame flight office, in front of which the seaplane had come to rest? An unforgettable deed? Heroic? The glory of the service? Possibly those, but Lieutenant Kyle struck the keynote of their innermost thoughts when he flung his fur-lined coat over the back of the chair, tossed his helmet and gloves to the table, and then, swinging around on the group who stood admiringly by, exclaimed:

"Who is the man who put that cold coffee in our thermos bottles?"

Schildhauer, who was rummaging in a nearby locker, straightened up to add his voice of indignation:

"That was the rottenest coffee I ever drank!"

Then Sutter, who, with a beatific smile on his face, was inhaling the fumes from a gigantic cupful of steaming Java, returned from his blissful state long enough

to give added emphasis to his "kick," which his planemates were registering.

"Cold as ice and full of . . ." but he didn't finish his declaration, to tell what the coffee was full of, for the temptation of the fragrant aroma of the brew was too much, and he buried his nose and drank deep and long. Woolson, who disappeared shortly after the seaplane taxied to the landing slip, had disappeared, was not present to give vent to his emotions on the score.

Napoleon's oft-repeated axiom concerning the army and its stomach, apparently applies as well to the sea and the air.

Too interested to sleep

Kyle was tired after his all-day and all-night 2,230-mile jaunt, and, apparently, had seen enough of plane and yard to satisfy him until he had completed some hours of much-desired sleep, so he shortly left. Schildhauer also left the flight office, after turning over the records of the trip. Sutter, however, though red of eye and face, lingered happily over his coffee, which had returned him to a wakeful state.

"Sleep?" he queried in answer to a question. "No, I didn't. You see, I had to watch the gauges and the engines for leaks, and the tanks for the fuel supply, and then I was interested, so I just didn't. The pilots dozed in their seats once in a while, and Woolson would sort of doze once in a while during the flight, but none of us got enough sleep to mean anything."

He looked at his heavy leather flying vest, the canvas trousers, the heavy wool vest, the gauntlets buttoning over the wrists, the fur-lined coat and the close-fitting helmet, all of which were thrown over a chair.

Just like an ice box

"It was terribly cold this morning," he muttered reminiscently. "Along about 3 o'clock, it

Continued on page 40

NATS

Dutch Schildhauer and the men and women of the Naval Air Transport Service during WW II seldom stood in the limelight. "The word 'transport,'" Dutch says, "does not conjure up exciting pictures of pilots shooting at each other with machine guns or dropping bombs on the enemy. It sounds as dull as a middle-aged commuter's daily haul to and from the city."

Nevertheless, what Cdr. Schildhauer and his charges accomplished was instrumental to the outcome of the conflict.

"We were flying 30,000 miles a day," he says, "performing a variety of missions — evacuating wounded, moving personnel to and from the combat zones, delivering critical supplies and parts for the war machines, even importing material and commodities from far-flung countries to meet the needs of manufacturers in the U.S. who were building the planes and tanks and other equipment required. Balsa wood, needed for gliders and mosquito boats, was brought in from Central America, for instance. Great quantities of rubber seeds for planting in the Western Hemisphere were imported from Liberia. At one time a cargo of beetles was flown from the Fiji Islands to Honduras to check a weevil that was destroying hemp on an experimental plantation.

Comments Schildhauer, "I believe that an exchange between a WW I congressional committee and a naval officer summarized the value of an operation like ours before it even existed.

"How many torpedoes will we need to fight this war?" the officer was asked by a committee member.

"His reply: 'Just half as many if we have a good transport system.'"

Surface vessels carried the cargoes then but it was inevitable that aircraft would one day become just as essential as ships. Obviously, aircraft could respond quicker to requirements and had tremendous flexibility.

In 1943 Dutch wrote, "When Hitler's hordes began swarming over Europe in 1939 a new kind of warfare, in which control of the air was paramount, took shape. This was a war covering long distances: quick thrusts by legions of big bombers and fighter planes effected the capitulation in a very short time of armies and navies far distant — that would previously have taken months to attack successfully."

Once Secretary of the Navy Frank Knox authorized establishment of NATS in 1941, Schildhauer and his staff had to establish a force which augmented the surface ship transport system. Schedules had to be worked out and, perhaps most essential, personnel had to be found with the expertise to make air transport functional.

"In the 1930s when we studied the transPacific routes, I had the good fortune of collecting a cadre of very skilled people to support our endeavors. The same was true for NATS except our numbers were much greater.

"We flew just about everywhere," recalls Schildhauer, "but the southwest Pacific presented the most hazardous schedule because of the extreme distances involved. That's

where the Martin *Mariners* and Consolidated *Coronados*, stripped down for cargo hauling, came in so handy. My familiarity with that part of the world didn't hurt either."

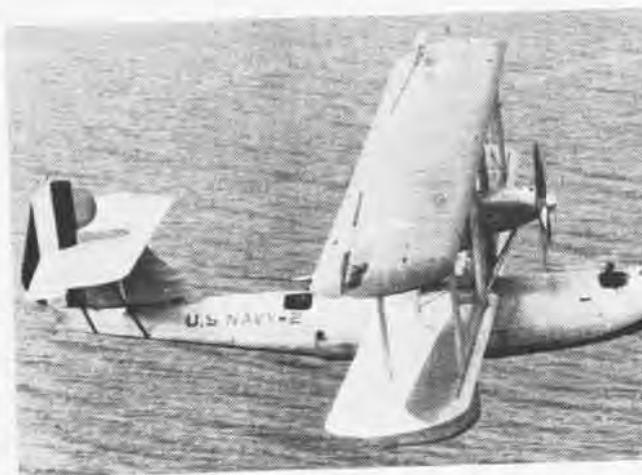
It was fitting that the military and commercial airlines combined their efforts and that Dutch Schildhauer was there to oversee this "...splendid cooperation. The Navy contracted the civilian units to assist on certain routes. Pan American, for example, flew the Martin M-130s and Boeing 314s carrying cargo and personnel between San Francisco and Pearl Harbor."

Dutch Schildhauer rightly proclaims that it "would be impossible to laud too highly those Navy heroes who directly fought the enemy. At the same time, it was the people of the transport service, unsung and anonymous, who kept them in the fight."

Nowadays, Captain Schildhauer still maintains an interest in ocean flying. He points out that "navigation can still be a headache even in this age of satellites and Loran and what have you. The incident of a South Korean jet liner's incursion into Soviet airspace a while back illustrates that all the problems haven't been licked yet."

Having been all over the globe in his lifetime, has Dutch Schildhauer, the octogenarian with a remarkably thick portfolio of adventures, had his fill of travel?

"I don't know about that," he smiles, "but I would like to get on a train and ride in the observation car on a trip to California."





Opposite page, top, PN-9 cockpit with drift indicator forward of small windscreen and, bottom, PB-1 which Dutch once flew. At left is the octogenarian himself, as lively in spirit today as he obviously has been all of his remarkably eventful life. Above is an unusual view of an unidentified naval officer and a civilian walking a street in Alaska, just one of the multitude of faraway places Capt. Schildhauer has visited. Top, an R5D taxis at Kodiak.

Record (Cont.)

was just like an ice box. There was some fog, but the wind just cut through those flying togs like paper."

The principal part of the flight was made between Fort Delaware and the Navy Yard, a distance covered just about every hour. Early yesterday morning the speed became somewhat slower, according to Navy Yard officials, due to an attempt on the part of the pilots to conserve fuel. Several hours later, instead of again disappearing into the distance down the river, the plane swung on a short course across the river to the Jersey side and continued that course until the flight ended. This, Sutter explained, was deemed advisable because of a slight leak in the port engine, which might possibly have developed into a major leak.

"The gas was exhausted to the last spoonful," he said, "so that the performance of the engines was practically perfect during the entire flight."

Test's object achieved

Engineer Cocklin, who, according to one of the naval officers, "knows more about the construction and the design of the PN-9 than any other man living," declared the test flight to have been entirely satisfactory.

"We will not make any changes of design or construction in the ship before she leaves for the Pacific flight," he declared, at the conclusion of the flight yesterday. "Some time next week she will be sent up again for an eight or nine-hour test, for endurance and speed, loaded with

2,000 kilos of shot. Shot, as inert weight, is better than sand, because it does not absorb moisture.

"The flight which ended this afternoon was intended to demonstrate whether the unit of the whole plane would function for a period of time, even approximately thirty hours, and that in my opinion has been demonstrated conclusively. Although the distance from San Francisco to Honolulu is more than 2,400 miles, and although the PN-9 covered only about 2,200 miles, the Pacific trade winds will add about fifteen percent additional mileage, which will easily permit the plane to make the trip."

The seaplane's remarkable success came after two previous flights had failed. In the first attempt the PN-9 was forced down by engine trouble near Claymont, Del., after having been in the air nine hours and twenty-one minutes. The second attempt was ended within three hours by a driving rainstorm.

After she had made her twenty-seventh round trip between the Navy Yard and Fort Delaware the PN-9 had exhausted her gasoline supply of 1,300 gallons, but instead of quitting her gallant crew began drawing on the seventy-six gallons reserved in the emergency tank, and not until the motors gave their final cough did the pilots turn the huge craft's nose into the wind and dive rapidly to the surface of the Delaware.

By that time the PN-9 had been in the air longer than had the army plane flown by Lieutenants John A. McCready and Oakley Kelley in their transcontinental hop from Mineola to San

Francisco which they accomplished in twenty-six hours, fifty minutes and thirty-eight seconds. The PN-9 had used enough gasoline to carry an ordinary touring car, with four occupants in it, once around the equator, with a trip from New York to Chicago thrown in.

Alternate control possible

Alternate control of the seaplane was made possible by the construction of the cockpit, so that Lieutenant Schildhauer or Lieutenant Kyle could assume charge of the ship without changing position.

The PN-9 is the first plane of its type.

The ship is fully fifty feet long, with a wing spread of seventy-two feet. It is equipped with two geared 475-horsepower motors, the gearing permitting greater propeller thrust with a sacrifice of some speed. The ship's high lift planes are an improvement over those of other cruiser type seaplanes.

Completely equipped with gasoline and military supplies and a crew of five men the PN-9 weighs nine tons, of which only four and a half represent the actual weight of the plane. Gasoline is the other principal factor in weight. With all her extra gasoline tanks ripped out and with only 400 gallons of gas on hand, naval experts estimate the plane could carry sixty-five persons, almost as many as in a Pullman car, about 365 miles in four hours.

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Air Board (Cont.)

A-6Es. This issue is open to further staffing.

The question of selecting TAR officers for command of operational squadrons was discussed. Screening of TAR officers for such commands in the same manner and at the same time

as regular officers is considered acceptable and is being examined.

Support for the Tailhook Association was again voiced and a brief resume of the Tailhook Convention was provided.

The next meeting will be held in approximately five months at a yet to be determined location.



Historical officer at work on the story of a squadron that didn't send in the dope. (Reminder: Unit histories are due March 1.) Reprinted from NANAews, December 1944

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Patrol Squadron 5, home-ported at NAS Jacksonville, Fla., is tasked with providing antisubmarine warfare power to the fleet under the control of Commander, Patrol Wing 11. Led by Cdr. Charles H. Conley, the squadron flies P-3C Orions. Its insignia depicts the sly vigilance of a Mad Fox prepared to confront the unsuspecting enemy at a moment's notice.



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