NAVAL AVIATION NEWS

FLASH:

Gramps' First Accident

MARCH 1970

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NAVAL AVIATION NEWS

FEATURES

THE STAFF

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COVERS

PH2 William R. Curtsinger shot from an A-6 cockpit to show the pilot and CVA-42 in a vast expanse of sea and sky for this month's cover. JOC James Johnston found a future Naval Aviator at NAS New York for the back cover. Above, one of the Reserves' F-4's at Los Alamitos, Calif.

REEQUIPPED RESERVES

This F-4 being readied for a gunnery flight at NAS Los Alamitos portrays one aspect of today's Naval Air Reserve Force which is now in the process of being reorganized and reequipped to provide quick response to fleet needs in time of crisis. Details of the new plan appear on pages 18 and 19.

NAVAL AVIATION NEWS

NTPS Reunion and Symposium

Apollo 12 Crew Slated to Attend

Apollo 12 astronauts – Captains Charles Conrad, Richard Gordon and Alan Bean – are scheduled to speak at the 22nd annual Naval Test Pilot School reunion and symposium at NATC Patuxent River, Md., on May 9.

The school annually invites alumni back to the test center to hear authorities on aeronautical subjects. Conrad graduated in August 1958, Gordon in July 1957 and Bean in October 1960. All three served at the NATC as engineering test pilots after graduation. Conrad was on the TPS staff in 1959.

One of four test pilot academies in the Free World, the NATPS trains experienced aviators, naval flight officers and engineers to become qualified engineering test pilots and test project engineers.

Graduates of the school are used to meet the requirements of the test center and other research, development, test and evaluation activities.

Captain R. B. Prichard, Jr., a former distinguished graduate, is the 13th director of the school.

Harrier Negotiations Finalized

McDonnell-Douglas is U.S. Supporter

. Final negotiations with the British government have been completed for the purchase of 12 Hawker-Siddeley *Harrier* V/STOL jets for the U.S. Marine Corps.

Hawker-Siddeley Aviation, Ltd., of England, and the McDonnell-Douglas Corp., have agreed on support and future licensed production of the ground attack fighter in the United States. Hawker-Siddeley is McDonnell's supporting organization in England for the F-4 *Phantom*.

The *Harrier*, introduced into military service by the RAF in April last year, is the only operational jet V/STOL in the Free World. It is capable of operating from amphibious ships or extreme forward areas ashore, which makes it consistent with the Marine Corps' philosophy of vertical assault.

Deliveries to the Marine Corps are scheduled to begin in January 1971.

Apollo Recovery Net to Museum

Inventor, Billy Pugh, Has His Day

The rescue net used to hoist *Apollo 12* astronauts from their capsule to the recovery helicopter is now on permanent display in the Corpus Christi Museum, the result of a series of events and festivities which culminated in a "Billy Pugh Day" in Corpus Christi, Texas.

Billy Pugh invented the recovery net at his company in Corpus Christi where he grew up. The *Apollo 12* net is a newer, smaller version of a personnel transfer net the Billy Pugh Co., Inc., has produced for offshore oil drilling operations since 1952. The nets were adapted for use in Vietnam, replacing the horse collar sling formerly used in SAR operations. The Navy and Coast Guard have used the nets successfully for some time.

When the *Apollo* recovery net was turned over to the Corpus Christi Museum less than a month after it was used, Mayor Jack Blackmon proclaimed the day "Billy Pugh Day." The

USS GARRETT COUNTY (LST-786) *recently logged its 5,000th accident-free helicopter landing when LCdr. Victor Beck landed his Huey gunship on the ship's helicopter deck. LCdr. Stanley F. Wass was the copilot. Seawolf helicopters have operated from the ship, shown above on the Co Chien River, since it arrived on station in Vietnam in March 1967.*

inventor was lifted from his business establishment to the city's bayfront in a Billy Pugh net hoisted by a Navy helicopter which was piloted by Commander Warren E. Aut, executive officer of HS-4, NAS Imperial Beach, Calif. The squadron used the net to recover astronauts from *Apollo's 8, 10, 11* and *12* in the Pacific. *Apollo 9* was recovered in the Atlantic by another squadron.

NASA and Navy officials attended the ceremonies honoring the inventor.

New Hangar for NAS Lemoore

Three Attack Squadrons Move In

A new $4.2 million hangar was formally opened at NAS Lemoore, Calif., recently.

The hangar's more interesting aspects include large side-rolling hangar bay doors which weigh five tons each but can be moved by one man. Office spaces are centrally heated and fully air-conditioned, while the hangar bay area is serviced by gas-fired infrared heaters which provide continuous radiant heat to the work area below. The hangar has 40,000 square feet of work area and can house offices for three fleet squadrons and an air wing staff, including training and support elements.

New facilities exterior to the hangar include 643,000 square feet of aircraft parking and maintenance aprons and 85,000 square feet of taxiway.

Immediate occupancy of the new hangar is planned for Attack Squadrons 113, 192 and 195.

NATC Testing HH-3A System

SH-3A Modified for Combat SAR

NATC Patuxent River, Md., currently is testing the Sikorsky HH-3A's firepower capability before it is assigned as a combat SAR helicopter. The HH3-A is a modified SH-3A. The SH-3A was first built as an ASW craft, but has also seen service in Southeast Asia in a SAR capacity.

The most significant and obvious modification on the HH-3A is in the firepower category. Two electrically-powered mini-gun turrets are mounted behind the sponsons, where the SH-3A has a torpedo station. The mini-guns, with six barrels each, are capable of firing 1,200 rounds per minute at slow fire or 4,000 rounds per minute at fast fire. Crewmen use two separate sights, mounted in the cabin, that swing through the door or aft window. The co-pilot can also aim and fire the guns with a pistol grip in the cockpit.

The guns swing in a near-180-degree arc on either side of the helicopter. Fixed forward, they can be fired by either pilot or co-pilot much like the fixed guns on fighters. When the guns are swiveled, automatic stops protect the helicopter's underside and landing gear.

There have been other modifications on the SH-3A for its new role, including complete armor installation, selfsealing fuel cells and more powerful engines.

All ASW equipment has been removed and the sonar well has been covered and a reenforced cargo floor has been placed in the cabin.

HS-1 Passes 45,000-Hour Mark

Over Six Years Without An Accident

Helicopter Antisubmarine Squadron One recently passed the 45,000-hour mark in almost 6½ years of accident-free operations.

Commanded by Commander David H. Bowling, the Key West, Fla., squadron flies SH-3A/D *Sea Kings* and trains pilots, aircrewmen and maintenance personnel for East Coast HS units.

LIKE VINTAGE *automobiles, some antique aircraft have the pedigrees that mark them as classics. Jim Lewellyn, a NARF Pensacola employee, made a model of the Curtiss Model F flying boat, the first Navy aircraft to be launched from a ship, and donated it to the Naval Aviation Museum at Pensacola. It was accepted by the museum's curator, Capt. J. H. McCurtain.*

REAR ADMIRAL *Howard E. Greer, above, became the 15th officer to head CNAResTra when he recently relieved Rear Admiral W. S. Guest. RAdm. Greer stated that he accepted command of the Naval Air Reserve "at a time when the Reserve Forces must assume greater responsibilities for the defense of our nation." (See pp. 18 and 19.)*

GRAMPAW PETTIBONE

Head for the Hills

Navy's crusty old safety officer departed an East Coast station for a period of rest and relaxation. He was intent on a test run of a new mode of transportation, namely, one toboggan.

At the test site, the intrepid aviator and his passenger checked terrain, gear and weather conditions. The terrain was rough and hilly with numerous obstacles, mostly trees. Snow covered the ground, contributing to an already icy condition, and temperatures were below normal. After the preflight, the ancient sage of *NANews* and his passenger began a test hop – and almost immediately sideswiped a tree. The passenger was unhurt but the Peerless Pilot suffered a knee injury which put him in the hospital for several weeks and in a cast for several more weeks.

Grampaw Pettibone says:

@#%&*@#!! Thunderation! This'n *really* frosted me! Goes to show yah that you gotta be mighty keerful no matter whatcha do, whether you're drivin' flying machines or toboggans! (Grumble, grumble, grumble!)

Riderless Horse

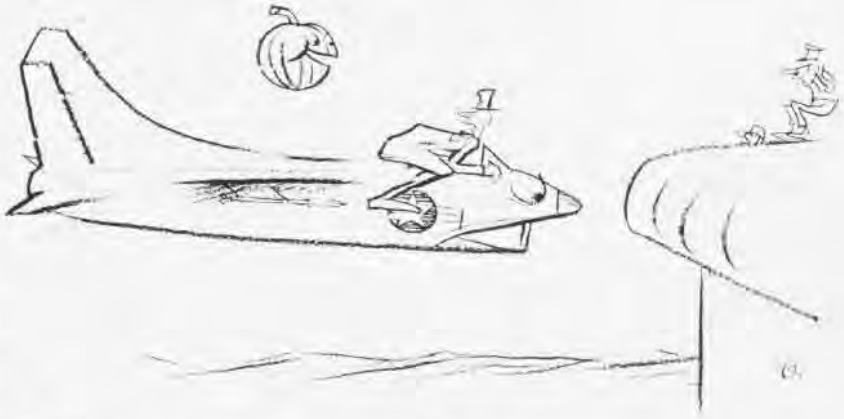
Reveille came at 0400 for the A-7B pilots of a light attack squadron deployed aboard an attack carrier. Briefing was scheduled at 0445 with the first launch at 0600. Two of the four scheduled *Corsair II's* completed the launch and, after the mission was completed, returned for an IFR recovery. The two pilots separated for individual Case III approaches. The wingman, a lieutenant (junior grade), marshaled on the 220 degree radial of the carrier's TACAN, 31 nautical miles at 17,000 feet. Ship's weather was given to him as 1,200 feet overcast with 3/4 to one mile visibility in fog, tops at 10,000 feet.

Departing marshal on schedule, he called "platform" at 20 miles, 5,000 feet, and took a cut to the final bearing of 035 degrees. Change to landing configuration came at ten miles with the J.G. electing to make a Mode II approach, using the cross needles because of a previous problem with the pitch mode of the automatic flight control system.

At one mile, he was on centerline and slightly low. Looking for the ball without success he called "Clara" (no ball) and disengaged the automatic throttle. In response to the LSO's call that he was a little low and to drop his hook (which he had forgotten), the pilot raised his nose and added some power. The engine chugged slightly and about that time the ball came into view on the lens. Because the ball was rising, power was reduced. The *Corsair* promptly started to settle. The LSO called for power and the J.G. went to military thrust.

For several seconds there was no response from the engine. The pilot felt he was either going to hit the ramp or the water. Thinking the engine had quit, he immediately pulled the face curtain and ejected, wings level, 125 knots at 150 to 200 feet. He was deposited in the water aft of the ship while his A-7 continued the approach.

Leveling off, the empty *Corsair II* proceeded straight ahead, passed the ship, then turned downwind. As the aircraft left the 180 degree position on its next approach, the angle of bank gradually increased to past 90 degrees, and the *Corsair* hit the water, the engine still running smoothly.



ILLUSTRATED BY Osborn

Grampaw Pettibone says:

Oh my achin' bones. Don't think this didn't happen, 'cause it really did. It's hard to second guess the pilot who's on the spot, but seems as though there's one factor missing in this guy's impetuous decision to get out: What happens to the bird afterwards?

These driverless airplanes ain't quite like the horse who throws his rider and then trots home to the barn. They seldom make it and often wreak considerable havoc on the way. One which recently did make it practically destroyed the barn and all its contents in the process. Another, an F-4, took off after its crew had ejected and flew more than a mile toward home plate before crashing into a house. What next? If this guy had been coupled to the ACLS, the bird might have completed the approach to an arrested landing without him. Careful young 'un, you can be replaced by a black box.

Kick the Tire and Light the Fire

The skipper briefed his division of three lieutenants for a transcontinental cross-country in their new F-4J *Phantoms*. Home-based on one coast, they were scheduled to deploy to the other for training. The #2 man, the C.O.'s wingman, prepared the flight log containing the route of flight, navaids, and courses and distances. This was then xeroxed for each member of the flight. The flight plan (DD-175) which had been prepared previously called for a distance of 1,053 miles to destination and a no-wind ETE of two hours and five minutes at flight level 310 with two hours and 30 minutes of fuel on board. It was filed at NAS operations by #2 who also received the weather brief for the flight. The only significant weather was a predicted 75-knot average headwind, gradually increasing toward the destination.

The first section took off at about 0915, getting airborne with a calculated 16,400 pounds of fuel on board. A 450-knot and .82-Mach climb was made to 31,000 feet where the power was set to an eyeball 3,000-pounds-per-hour fuel flow on each engine. This was not changed until letdown. These settings gave them an indicated Mach of .88 and a true airspeed of 523 knots, with a ground speed of seven miles per minute.

A mental fuel calculation, 454 miles from destination, showed that their estimated fuel reserve of 1,500 pounds had shrunk to a little over 1,000 pounds. Beyond that point, their ground speed showed a decrease to six and sometimes five miles per minute. As late as 178 miles from destination, when it was estimated that there would be only 400 pounds of fuel reserve and a safe divert could have still been made, the decision was made to continue. An idle descent from 50 miles out was begun at what was stated as 600 pounds fuel remaining: nozzles at 1/2 closed and 250 knots. By the time #2 reached 15,000 feet, he had zero fuel remaining and the port engine flamed out. The ram air turbine was extended and, shortly thereafter, the starboard engine quit.

The lieutenant and his NFO stayed with the stricken aircraft until it reached 1,500 feet and only 3½ miles off the approach end of the duty runway. Two hours and twenty-one minutes after takeoff, they made a precision ejection, landing without mishap, and were picked up and completed the trip via Navy helicopter.

The skipper landed about one minute after the crash with zero fuel indications. During roll-out, both his engines flamed out. He asked the tower to have ATC divert the second section, about an hour behind, to an alternate air field.

Grampaw Pettibone says:

If this ain't the consarndest, goldangdist spectacle of airmanship I ever saw in all my born days. It's not only a reflection on the C.O. involved, but a purty fair indictment of those who selected him for the job in the first place.

Flight planning? What's that? Their flight log contained no provision for a fuel plan or fuel log, and there were no entries for time en route. The DD-175 didn't even show who actually was flying in each aircraft and did not include any wind conditions.

The most basic inflight fuel calculations would have shown that the situation was deteriorating below required minimums by the time they had flown halfway. Even after that, the flight leader showed mighty poor headwork in continuing instead of turning back when he eventually did realize that they would be short of fuel.

The almost non-existent jet-cruise-control techniques applied to the flight resulted in over 1,000 pounds excessive use of fuel. Cruise-control techniques are somethin' most pilots are supposed to learn in flight school.

This is precisely the type of accident for which there is no possible justification and, until responsible supervisors and leaders in the Navy are held *responsible*, they will continue to occur unabated.

A Day in the Life

A Photographic Essay

by PH2 William R. Curtsinger

Text by Michael G. McDonell

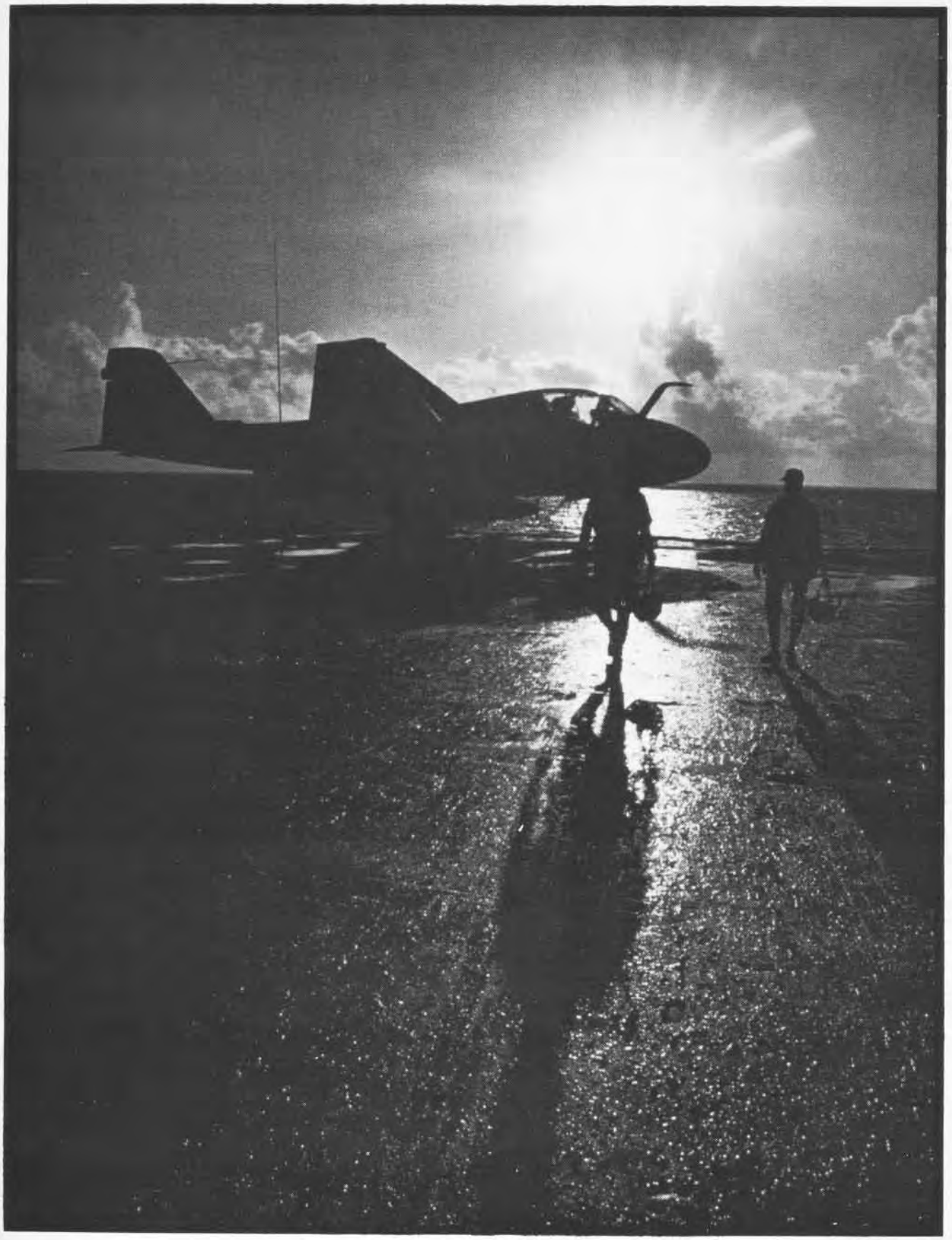
Duty bound to vigilance,
to watch and warn,
he and I, pilot and navigator,
mount this metal bird
and prepare to fly.

On deck,
behind a squadron mate,
we wait our turn to launch.
Hooked up,
the cat man thrusts forward,
touches the deck,
and hurls us from the ship.
The steam from the catapult
is the only
sign of our departure.

Above the cumulus,
we join our flight
and soar.
Bent upon our mission,
we fly in hopeful peace.
Alert.

Our ship steams below us,
miniature in her bright blue sea.
The problem lies in getting aboard;
we have done it hundreds of times before,
but each time seems just like the first,
and the same wary caution applies.

Into the groove,
I see the LSO and call:
"502," steady,
"Intruder," easy,
"Ball," nose up on the ramp,
"4.8."
No more assistance;
grab the three wire. Done.
Down on the deck.



The Dragon Masters of One & Four & Ho

By ADJC B. V. Houser

Clan Scribe

Editor's note: This item from never-never-land is an interesting approach to the ever present problems of periodic maintenance. Mary's Land, where November, Alfa, Tango and Charlie are, of course is NATC Patuxent River, Md. The place within that place would be the Weapons Systems Test Division (140).

Once upon a time in Mary's Land, there was a place of testing called November, Alfa, Tango and Charlie. In this place of testing, there was another place of testing called Whiskey, Sierra and Tango, where winged dragons were used to test lightnings, large objects to drop and other horrendous things.

In this testing place within a testing place in Mary's Land was a group of dragon repairmen in a center called One & Four & Ho. At one time this group was just four. Helpers were gleaned from other centers, such as One & One & Ho, One & Two & Ho, One & Three & Ho, etc. Now this was rather ineffective for they were never the same helpers any two days in a row, and this in turn was quite demoralizing to the dragons. As a result much red showed on *Ye Boarde* and this was quite demoralizing to the Dragon Masters.

About this time, it was decided that this group called One & Four & Ho, should be increased and have a Chief Dragon Repairman placed in charge. Here in the technical terms of the dragon clan is the manner by which *Ye Boarde* was blackened – even while the clan was very short of men and the parts were slow to come.

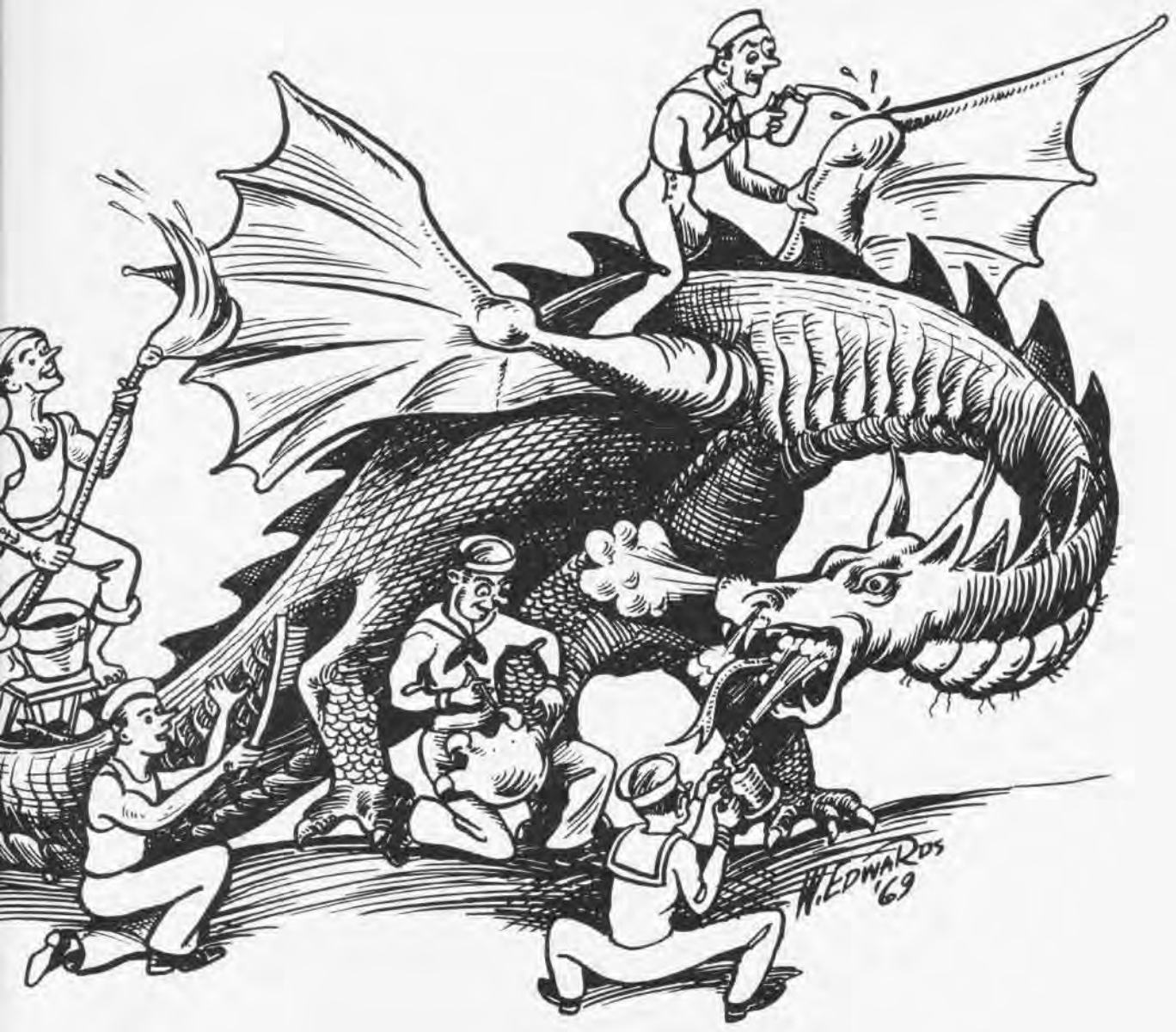
The chief dragon repairman was given more working space for his shop, and a group of men of the various dragon ratings – such as internal powermen (concerned with dragon fire and motion power), internal powermen (concerned with reciprocation), lightning controllers (of the one wire type), dragon fluid (red) controllers, dragon skin and plate experts and some dragon voice controllers – were assigned. Some dragon repairmen still had to be borrowed as needed.

Now in this particular place of testing, there generally were some 36 dragons of some 16 different species.

Each of these animals had to be groomed and repaired every 13 to 17 weeks. Thus 90 groomings per year, or two a week, with a different species to groom each time, are necessary.

Through all this, a mixed group called project officers, civilian project workers and dragon farm representatives could be found working in and around the grooming crews.

Enough to demoralize even the most motivated of dragon repairmen, eh! Not this group. The chief dragon repairman (being of the older and bolder type) simply drank his acid (called "joe"), growled and snarled



things like, "Overtime, weekends, double shifts, then liberty." He pounded his desk, saying other things such as, "Where is me parts, why are my motors not back?" And by and by the work rolled out and *Ye Boarde* grew even more black.

Once more it had been proven that the clan chiefs and dragon masters cannot treat their men as less than men and expect to get the work out. Any man expects to be required to do a man's job.

Overtime there will be, but pride in a job well done goes far in the area of morale. Remember, chiefs of dragon clans, hard of nose you must be at times and firm all the time. Respect lost is hard to regain.

Through judicious use of available men, materials, grooming cards and a shop-sized work center, the large problems of periodic grooming have been reduced to smaller problems with an occasional bunching of grooming dates due to such things as project extensions and new dragons.

True, the clan is still very short of men, and the parts still come slowly, but the grooming cycle is no longer a bottleneck.

Both the morale of the men of One & Four & Ho and their pride of accomplishment are high. Even though their pride at times is almost obnoxious in quantity, the dragon masters feel that they have proven a point: that the crew system is the safest and fastest way to complete periodic groomings. The men work as a team, with the pride and cohesiveness of a team.

For Whiskey, Sierra and Tango, the crew system is the answer to our problems. It could be the answer to yours. A good look at your situation will tell you – but it must be a good honest look.

The Survivor

Ens. Barbara Powell takes a sandwich break en route to deep water environmental survival training off San Diego. Miss Powell, enlisted personnel officer for RVAW-110, participated in one day's worth of simulated parachute drags, life raft familiarizations and helo pick-ups. She even managed a smile and a thumbs-up at the end of it all.

A New Title

Rear Admiral George P. Koch accepts the Gray Eagle Award from Rear Admiral Robert J. Stroh, retiring Gray Eagle, as he becomes "the most ancient Naval Aviator on active duty." Mr. Paul Thayer, president of LTV, sponsor of the award, looks on.

News 'Blues' Leader

The "Blue Angels" have a new leader: LCdr. Harley H. Hall, above, relieved Cdr. Bill Wheat at NAS Pensacola, Fla. The team has four other new members: Capt. Kevin O'Mara, USMC, and Lieutenants Jim Maslowski, Skip Umstead and J. D. Davis replaced Capt. Vince Donile, USMC, and Lieutenants John Allen, Rick Adams and Rick Millson who completed their tours.

Gone Are the Days

The days of missing muster because of a late ferry boat are over for personnel commuting to NAS North Island. The new San Diego-Coronado Bay Bridge now links the air station with the city of San Diego.

Me and My Shadow

Sailing in sparkling Pacific waters, a Russian fishing trawler is silhouetted as the Ticonderoga steams across the horizon.

SEAWOLVES IN THE DELTA

Photographs by
PHC Arthur Hill

Teaming up with U.S. Navy river craft in the Mekong Delta are the *Seawolf* helicopters supporting the Navy's Operation *Game Warden* and *Sea Lords* forces. Light Helicopter Attack Squadron Three (HAL-3), the first armed helicopter squadron commissioned in the U.S. Navy, flies the heavily armed UH-1B *Huey* helos, which Navy pilots have nicknamed *Seawolves*. In addition to providing support for friendly ground and waterborne units, the *Seawolves* are also called upon for rocket and machine-gun strikes on enemy targets and cover fire for medical evacuations.

Operating all over the Mekong Delta, from airfields ashore and from helo pads aboard LST's at sea, HAL-3 and the versatile *Seawolves* provide the necessary airpower to support the Navy's mission in Vietnam.

Army aviation pilots observe ADJ2 Jim Piccolo make adjustments to an M-134 mini-gun at a floating base in the Mekong Delta. Seven tube 2.75-inch rocket launcher shares same mount.

A typical day for HAL-3 Seawolves is depicted in this series of pictures. A Seawolf gunship circles a Swift boat on Can Lon River, top left, and a door gunner directs M-16 fire on a camouflaged VC sampan, top right. Above left, crewmen reload from ammunition boxes in preparation for their next mission, while others repair a battle-damaged tail section, above right. At the end of a long day, a Seawolf returns to USS Windham County in the South China Sea.

THE NEW NAVAL AIR

The Chief of Naval Operations recently directed a message to all the Navy clarifying the future role and status of the Naval Air Reserve. In his comments he emphasized his intention to strengthen Reserve readiness even though budget reductions and other restrictions might appear to impede this goal. He cited the reduction in active-duty force levels and stated that the Naval Air Reserve must be counted on for a more active role in any future crisis.

To take up the slack and fill the empty flight decks in the event of a national emergency, two Naval Air Reserve carrier air wings (CVWR's 20 and 30) will be established under the new "total force concept." Initial outfitting will be with aircraft corresponding to a *Hancock*-class CVA wing, i.e. F-8K, A-4C, RF-8G, EKA-3 and E-1B. This concept envisions a closer operational and training relationship between the Selected Reserve and fleet type commanders.

Each Commander, Reserve Carrier Air Wing, will be a USN commander. His wing staff will consist of both Regular and active-duty Reserve (TAR) officers and enlisted men.

The CVWR's will be composed of specially selected Reserve squadrons, fully manned and substantially augmented by TAR personnel. Where feasible, they will be based at fleet naval air stations with the support equipment and training devices necessary to keep them in a state of readiness at all times. The first CVWR will be established during FY 70, and the second wing as soon thereafter as aircraft are available. The two CVWR's will be considered as ready fleet forces with a potential for at-sea training periods of short duration and deployment to sea duty under conditions of CVWR mobilization.

The responsibilities of CVWR commanders will parallel those of the fleet CVW commanders — to exercise training and readiness control of the air wings. Although operating within the Reserve structure, a close liaison will be maintained with fleet forces for standardization exercises and planning. The fusion of Regulars and Reserves is expected to produce a higher state of readiness than would otherwise be possible. The plan also calls for two modern carrier ASW groups (CVSGR's) and 12 VP and 3 VR squadrons—which will continue to receive emphasis in training—as well as an effort to provide modern equipment and strong support from fleet activities. The Naval Air Reserve Force under this plan will consist of about 475 operational and support aircraft.

This new concept will require restructuring of the Naval Air Reserve into two major areas to improve its management. The selected hardware squadrons previously described make up one area. Support units will constitute the other. The support units will train individuals and units without hardware in support mobilization roles in Naval Aviation. They will train at hardware force sites, as well as at additional facilities to be located convenient to population centers or near disestablished Reserve air stations, such as Kansas City and Minneapolis.

Rear Admiral H. E. Greer, Commander, Naval Air Reserve Forces, will support this program by improving peacetime training, which will be tied to current fleet procedures and techniques, thereby providing minimal transition to operations with the fleet.

The plan for increased readiness initially received impetus from a post-*Pueblo* crisis study. This study examined the lessons learned from previous Reserve mobilizations. Some of the most prominent problems developed in the areas of assigned aircraft and support equipment, most of which were fallout from the fleet and largely below the standards of material condition and state of modernization of the active forces. Aircraft frequently lacked certain mission-essential subsystems necessary to perform assigned primary missions. This problem was often due to a lack of sufficient aircraft maintenance support equipment which limited maintenance functions at the intermediate and organizational level. These shortages also affected the maintenance training of Reserve maintenance personnel.

The new readiness reporting in the Reserve force is patterned after the fleet readiness reporting system and highlights those factors required to provide remedial management attention.

The study of lessons learned caused Vice Admiral F. H. Michaelis, then ADCNO(Air), to develop, in early 1969, a paper entitled "Goals and Expectations for Naval Air Reserve Planning during CY 69." It called for a more specific role for the Reserve in meeting the Navy's total force requirements by improved organization, adequate read-

RESERVE

F-8K's, newly acquired by the fleet, above left, will be part of new Reserve CVWR's. A-4C's, now at some Reserve stations, and EKA-3 Skywarriors similar to those above will also be assigned to these carrier air wings.

iness training and more and newer equipment. From this paper grew the development of a Naval Air Reserve Five Year Plan. A sequence of reviews had revealed that the existing structure of the Naval Air Reserve could not adequately respond to mobilization requirements. The new concept places emphasis on increased readiness for mobilization through a vigorous hardware modernization plan and meaningful measurement of readiness tied to fleet standards.

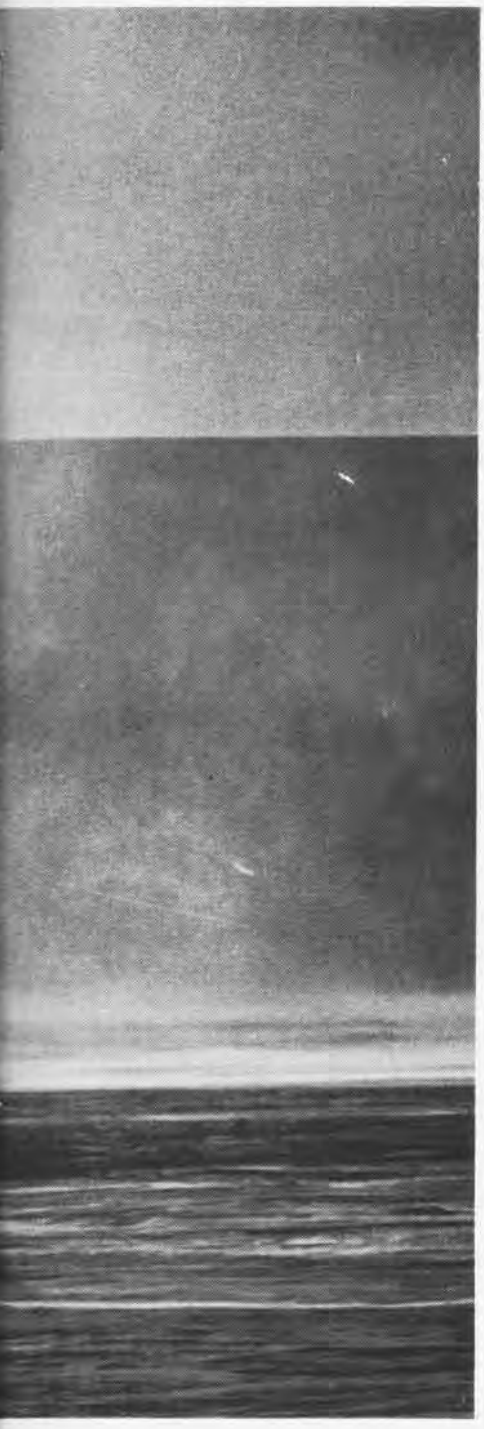
Due to increased budget cuts, airspace limitations and various population pressures, a review of all Naval Air Reserve facilities is also being conducted to improve readiness posture. A construction deficiency of $160 million which is expected to increase an additional $70-90 million is one factor which forces a search for better facilities. These facilities for the most part are expected to be found at active duty air stations where necessary ground support equipment and required training devices are available to ensure an adequately maintained and properly trained augmenting force.

The CNO's final clarifying remark, "Our aim is to strengthen and improve the Naval Air Reserve. Maximum drill-pay strength consistent with stated requirements is desired," expresses the Navy's plan for its Air Reserve Force.

E-1B Tracers, above, and RF-8G photo-reconnaissance planes, below, are other types of aircraft which will be assigned to modernized Reserve squadrons.

The Task: Build Survey Camp on the

Topographic
assiter Coast



Deep Freeze '70 personnel are silhouetted against the rising sun on Wetmore Glacier, left, while setting up camp for Lassiter Coast topographic party. A VXE-6 crewman, above, uses a scarf to protect his face from the cold,blowing snow during refueling stop at Byrd Station.

One of the early projects of *Deep Freeze '70* was to establish a topographic survey camp on the Lassiter Coast of Wetmore Glacier. The site is about 800 miles northeast of Byrd Station.

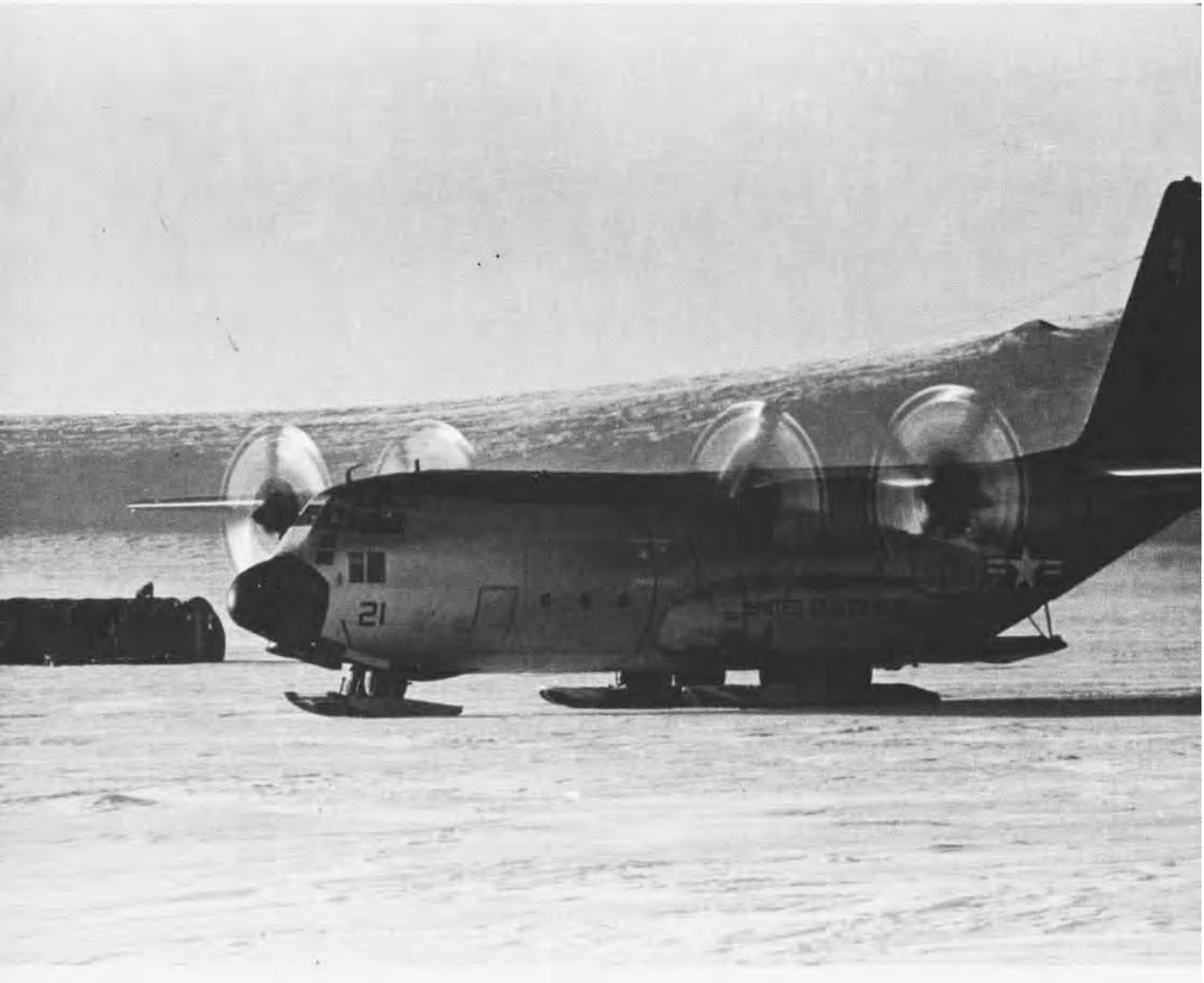
After a refueling stop at Byrd, the construction crew set out for the Lassiter Coast in a VXE-6 LC-130. Its cargo compartment was loaded with prefabricated huts and equipment.

While construction crews erected a Jamesway hut to house the eight-man party, an electronics technician strung equipment to establish communication with McMurdo Station. The LC-130's engines, meanwhile, were turned up to keep them warm for the flight back.

A Photographic Essay

by PHC B. M. Andersen

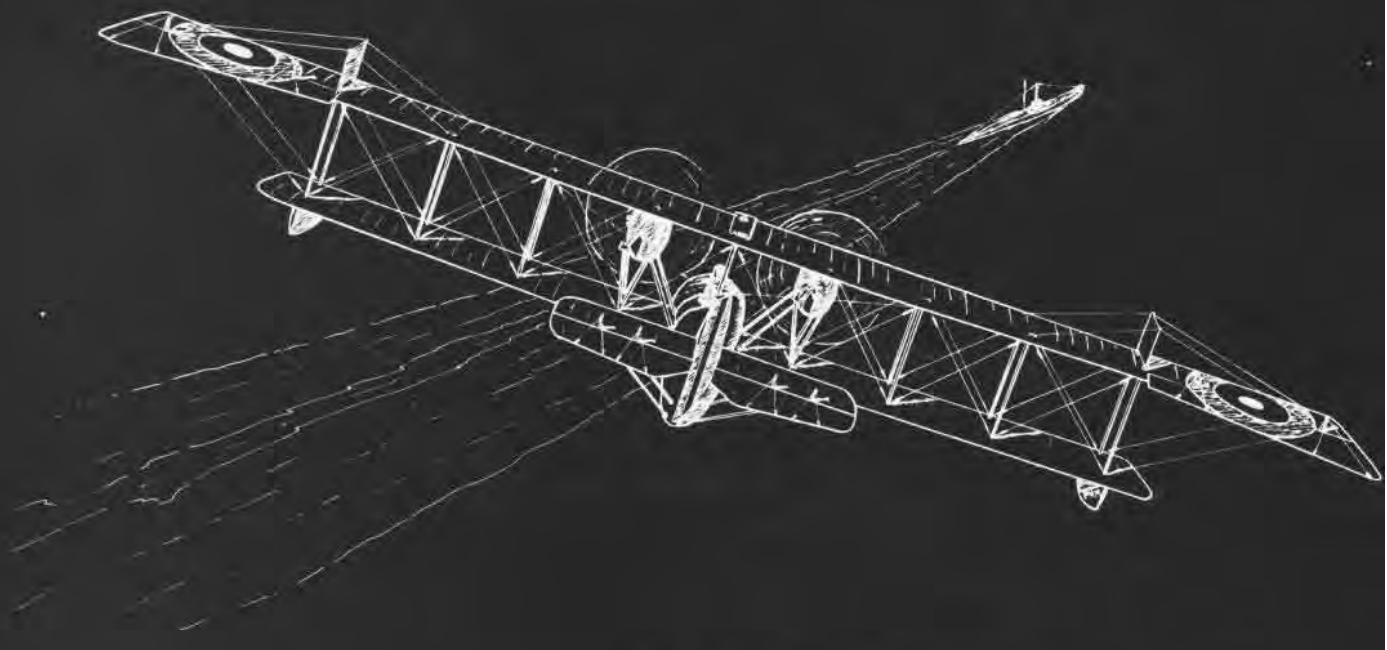
LC-130 pilots get a view of the Ellsworth Mountains en route to the Lassiter Coast. Below, on Wetmore Glacier, the Hercules' engines are left running to keep them warm.



The construction crew unloads equipment from the plane's rear-loading ramp to begin camp site, top left. A Jamesway hut, top right, is erected to house the topographic survey team. An ET, above, strings antennas to establish communications with McMurdo Station. At left, a positive thought on the brief case.

ASW AIRCRAFT

PART 1: 1912 - 1918



By LCdr Paul Mullane

Immediately upon sighting the enemy, the pilot nosed over and brought his plane down, full throttle, from the altitude at which it was flying to that agreed upon for bombing. The observer, if not already in position forward, crawled from his seat beside the pilot into the front cockpit, picked up the submarine, and kept his eye continually on it. The radio operator prepared to make the recognition signal. The engineer took position at the stern, camera in hand. By this time the pilot had descended to the desired altitude, had leveled off, and was holdin his course at constant speed. The ob server checked the bombsight. The rec ognition signal was given. The observe watched intently to see whether it wa answered. If no answer came, th plane held its course straight for an over the target, the pilot being guide by the hand signals or nods made b the observer. At the proper momen the observer released both bombs."

This contemporary description of aerial ASW operations in 1918 may sound somewhat rough and ready, but actually it was a refined technique developed during years of frustrating efforts to overcome the submarine.

Submarine's role was not anticipated

American interest in the use of aircraft against submarines appeared within a year of the Congressional appropriation of $25,000 for the Navy to procure its first aircraft in 1911. The Navy's General Board in 1912 directed that tests be conducted to determine if aircraft could detect submarines from the air. Lt. John Towers, Naval Aviator #3, investigating this capability, reported that no difficulty was encountered in spotting a submarine running awash or at periscope depth but that it was quite difficult to spot if the boat was submerged only a few feet. He felt, however, since tests had been held in the muddy Chesapeake Bay, better results might be obtained in the open sea. This proved to be the case when in 1913 an aviation group, set up at Guantanamo to work with the fleet, found it could visually locate submerged submarines at sea when they were close to the surface and conditions were right.

By 1915, training of Naval Aviators included antisubmarine patrols. The usefulness of this training, soon to be employed, was graphically demonstrated when the German U-53, following a friendly visit to a U.S. port, sank five Allied merchantmen off the East Coast in 1916.

At the outset of WW I, neither the Allies nor the Central Powers anticipated the eventual role of the submarine. Because it was thought capable of serving only as an auxiliary to main battle forces of the fleet, it was not until 1915 that the Germans began calculated use of their *Unterseebooten* against merchant shipping: an attempt to overcome the world's leading naval power by slow strangulation of its Atlantic supply lines. In 1914 at the start of hostilities, Germany had a maximum of 30 U-boats. England and France each had over twice that many. Even the United States had more. The Germans, however, scored early success when, in September 1914, U-21 sank the cruiser HMS *Pathfinder* and, later the same month, U-9 sent three more British cruisers to the bottom in a single action.

That turn of events brought about an increased interest in antisubmarine operations. In the search for improved methods to combat this threat, use of the airplane, then newly emerging as an effective weapon, was investigated. In 1914, LCdr. J. C. Porte, RN, a retired British aviator and noted aircraft designer, worked with Glenn Curtiss to develop the flying boat *America* with which to attempt the first trans-Atlantic flight. WW I interrupted this ambitious plan and Porte returned to England. The British government soon thereafter purchased the plane from Curtiss and Porte devised an improved hull design. Designated the Felixstowe, it was produced in successive modifications, from a later Curtiss design of larger size, as the F.2A, F.3 and F.5, and became the primary British ASW plane. These flying boats were flown by U.S. Navy pilots when they first arrived in England in 1917. The F.5, with different engines and hull modifications, was designated the F-5L by our Navy and saw service as our standard seaplane until 1929.

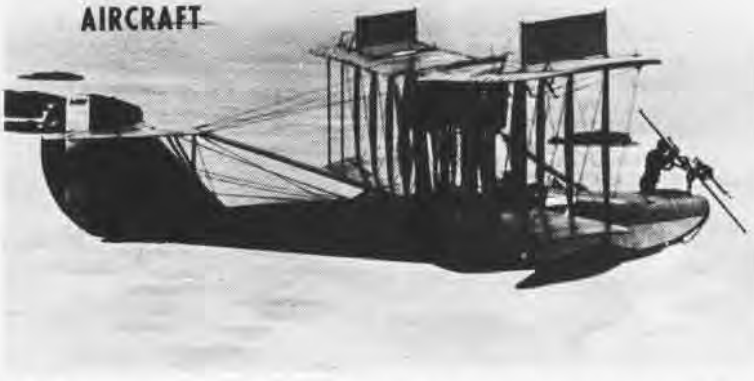
The British introduced aerial ASW by sinking a submarine off the Belgian coast in late 1915. Although many types of aircraft were used during the war, the Felixstowe series came the closest to being the first true antisubmarine patrol plane, flying relatively long-range ASW missions over the North Sea area on a regular systematic basis.

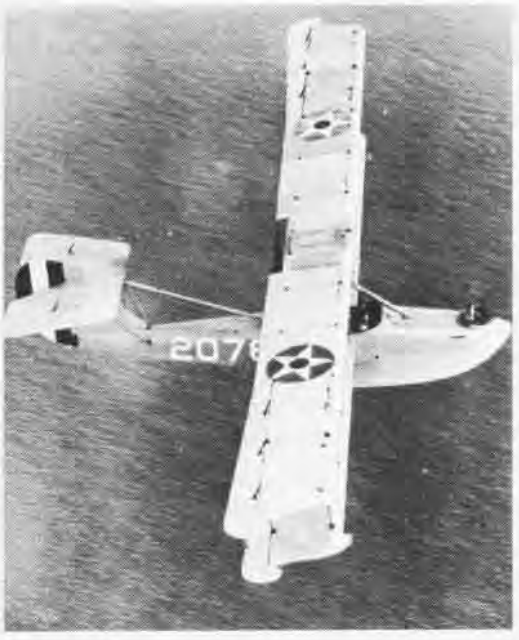
Smithsonian Air and Space Museum

F.3, above, was almost indistinguishable from F.2A; both were developed from the Curtiss H-12. Powered by two 375 hp. engines, it cruised at 85 mph with an endurance of up to nine hours. Armament included four Lewis machine guns and bombs.

LePen, above, Donnet-Denhaut, below, and Tellier flying boats were the first aircraft to be flown by U.S. Navy airmen in ASW from France in WW I. Later, American aircraft were supplied.

ASW AIRCRAFT





HS-2, above, was powered by a 400-hp. Liberty engine. It carried a crew of three, a Lewis machine gun, two 165-lb. bombs and was capable of four hours' flight. Here it is also armed with a Davis recoilless gun which was used for antisubmarine attack. With the HS-1's 62-foot span lengthened to add 800 feet, they were redesignated HS-2's, right. National insignia indicates it is post-war photograph.

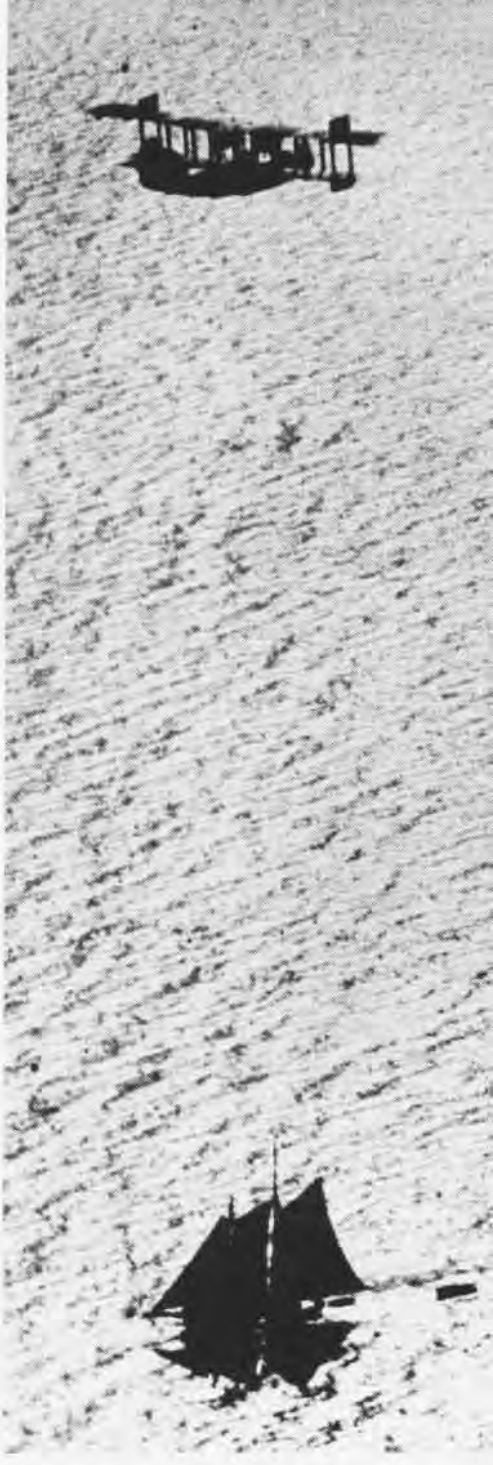
U.S. Navy developments during this period consisted of a few training float planes and flying boats. The HS-1, originally designed for private use and later adapted by the Navy, became one of the first U.S. aircraft to be sent overseas. At the same time, American development of the Curtiss *America* produced the H-12, the basis of the British F.2A. Later an improved version, the H-16, was developed.

With the U.S. entry into the war, Admiral William S. Sims, Commander U.S. Naval Forces Europe, recommended building flying boats which would be used to reinforce British ASW efforts in the English Channel. Though he thought surface craft most effective, he also found aircraft helpful in protecting convoys. A joint Army-Navy commission in 1917 recommended production of flying boats for ASW, as well as manned kite balloons which were to be towed behind destroyers. Later the same year, the Bolling Commission noted that the British and French had only recently realized the importance of aircraft in ASW and recommended that the U.S. expand its air patrols along the coasts of Ireland, France and Portugal. Further impetus was given the program when Rear Admiral David W. Taylor recommended that an air offensive against U-boats take precedence over all other Naval Aviation activities. Naval Aviation efforts in Europe were organized under the U.S. Naval Aviation Force, Foreign Service, which encompassed units in France, England, Ireland and Italy, and was assigned the primary mission of antisubmarine warfare.

While U.S. Navy pilots in the British Isles were flying Felixstowe-type aircraft, their counterparts in France were provided French flying boats such as the Donnet-Denhaut, Tellier and Le Pen. The French bases were the first to go into operation with initial U.S. facilities at NAS Le Croisic. There were nine French patrol bases by war's end. The first operational U.S. Navy patrol took place in November 1917. In the British Isles, five U.S.-operated bases were eventually established: four in Ireland, to patrol northern and western coasts, and one in England, to take care of submarines in the North Sea. The station in England – at Killingholme opposite the German U-boat bases at Heligoland Bight – became one of the most powerful in Europe with over 2,000 personnel and some 50 seaplanes. To extend convoy protection and prevent U-boats from using the area for refueling, the First Marine Aeronautical Company was dispatched in January 1918 to Ponta Delgada, Azores – the first completely U.S.-equipped aviation unit to be sent overseas. The Marines flew their ASW patrols with a mixed bag of obsolete and short-range aircraft including ten R-6 scout planes, two N-9 trainers and six newer, but still with limited endurance, HS-2L flying boats.

By April 1918, one lighter-than-air, one kite balloon and three seaplane stations were in operation in Europe. At this time, the German submarines had begun to center their campaign northwest of Scotland. U.S. pilots began assisting the British by flying patrols in F.2A's and F.3's from Killingholme and the Royal Navy bases at Felixstowe and Portland. By September, regular patrol flights were being flown from four stations in Ireland.

By May 1918, a U-boat campaign developed off our own East Coast when six German submarines attacked trans-Atlantic and coastal shipping. One of these, U-156, laid numerous mines in U.S. coastal waters, one of which caused the sinking of USS *San Diego* off Fire Island, New York, in July 1918; another mine damaged USS *Minnesota*. The sinking was first discovered by two HS-2's on regular ASW patrol from NAS Montauk. Two days later, U-156 was spotted on the



H-16, top, first produced in March 1918, was overseas by summer. It carried a crew of four, had nine hours' endurance and a 675-mile range. Top speed of 95 mph limited flight to four hours. Span was 95 feet, length 46 feet; armament included two 230-pound bombs and four machine guns, above. A variation of the design, F-5L, patrols off the U.S. East Coast, right.

surface off Cape Cod and unsuccessfully attacked by an R-9 and an HS-2. Though their bombs fell near the submarine, they proved to be duds and the U-boat escaped. At the time, a systematic patrol of the U.S. coast had been established. It extended 75 miles seaward and employed, by the end of the war, some 300 HS-1L, HS-2L and R-9's. Ten months after our entry into the war, H-16's were added to our patrolling aircraft. Blimps of the B and C types augmented antisubmarine efforts, and F-5L's were sent to patrol stations toward the end of hostilities.

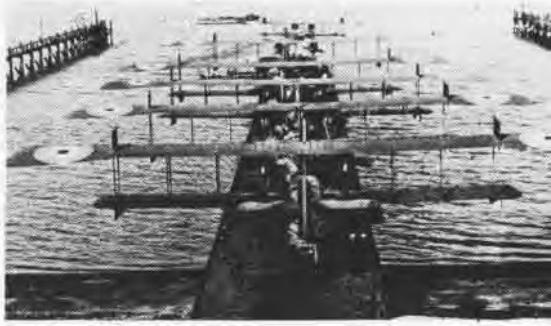
To meet the submarine threat, a string of air patrol stations was established from Canada down the East Coast to Key West. The base at Halifax, commissioned in August 1918 under the command of Lt. Richard E. Byrd, conducted patrols over the sea lanes on the northern approaches to the Atlantic coast. The approaches to the recently opened Panama Canal were watched by aircraft from Coco Solo which was placed in commission in May 1918.

Aircraft normally flew patrols only in daylight hours or in bright moonlight. Usually two planes patrolled together when escorting channel convoys. Sometimes larger groups operated together, which was fortu-

Seaplanes prove worth in antisubmarine campaign

ASW AIRCRAFT

H-16, above, at Brest, France, is prepared for a patrol flight. A Navy ground crew checks its two 400-horsepower Liberty engines while pilots wait.

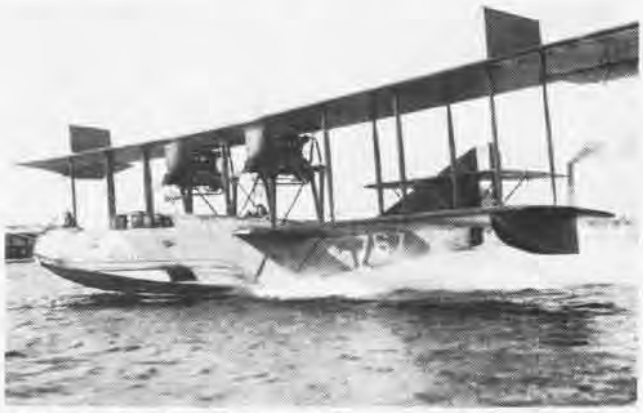


F.2A's, workhorses of North Sea patrol, line up for launch. They had endurance of 7.5 hours and range of 450 miles.

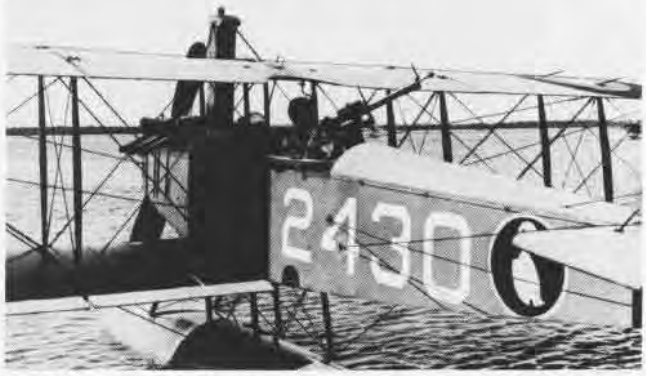
nate for Allied pilots when they encountered German aircraft. In one such meeting, four F.2A's and an H-12 were attacked by 14 German seaplanes. The five Allied planes accounted for six of the attacking aircraft without a loss.

ASW aircraft were mainly useful in providing information about submarine movements for use in cooperation with surface vessels in the North Sea and Channel area which was divided into a grid system. However, until radios were installed late in the war, communication from aircraft proved a real problem. Aldis lamp, Very pistol and message buoy provided contact with surface vessels, but the home station could be kept informed only by messenger pigeon. In addition, it was found that aircraft fighting the submarine needed larger and better designed bombs, improved navigation equipment, some system for disseminating information gathered, and coordination of air and surface operations. Later, with radios installed in ASW planes, land stations directed seaplanes to the SOS position of a ship under U-boat attack. This coordination, however, was delayed until successful adaptation of the aviator's helmet with which radio communications could be clearly received in a plane during flight. Even then, the radio's range, under ideal conditions, was limited to 50 nautical miles using voice and 120 miles using code.

Meanwhile other ideas for attacking the submarine were being developed. LCdr. Kenneth Whiting, commanding officer at NAS Killingholme, was supervising a plan to tow F.2 seaplanes on lighters behind destroyers to a point within range of the German submarine bases where the lighters would be partially submerged, floating the seaplanes. As the whole plan hinged on the element of surprise, it came to an abrupt end when a Zeppelin appeared overhead during a full-scale



H-12's, produced mainly for British use, were similar to F.2A and F.3 flying boats. Though performance was limited and they were structurally weak, they accounted for two Zeppelins and three U-boats.



The N-9, though designed as a trainer, often saw service doing offshore patrol over U.S. coastal area. Two were sent to the Azores as part of the Marine Air Detachment patrolling that area.

Allied approach to ASW marked by a variety of ideas

Smithsonian Air and Space Museum

F-5L, developed late in the war from British F.5, carried 1,300 lbs. of ordnance and had greater range than the H-16. Two 200-hp. Liberty engines gave maximum speed of 102 mph.

The America, above, was designed to cross the Atlantic, but instead became the prototype for British and American ASW aircraft. The NC-4, below, was built to provide long-range patrol, but instead became the first aircraft to fly the Atlantic Ocean.

practice in the North Sea.

An alternate plan first proposed by LCdr. Whiting in the summer of 1917, eventually gained approval and land planes of the specially organized Northern Bombing Group were assigned the task of bombing the German bases. But the war ended before more than a few flights could be launched. Captain H. I. Cone, aviation aide to Admiral Sims, in a report to the Navy Department noted that the English had begun using landplanes instead of seaplanes whenever possible, particularly for convoy work. However, throughout the war, flying boats continued to be the mainstay of the aerial antisubmarine effort, and remained so in our Navy well into WW II.

Since the seaplane was slower and less agile than the landplane, it suffered restrictions on its area of operation. One particularly attractive U-boat hunting ground – the shoal waters off the Belgian coast which German submarines were forced to transit close to the surface – was effectively denied to Allied seaplanes by German fighter aircraft which maintained superiority there. The French-supplied Hanriot float planes were not capable of providing the protection needed and several British attempts in that area ended in disaster.

R-6's, designed as scouts, provided bulk of aircraft assigned to the First Marine Aeronautical Company at Ponta Delgada, Azores. This Curtiss-designed plane had a 200-hp. Curtiss V 2-3 engine.

The R-9 closely resembled the R-6, including the Curtiss power plant. These planes spent many hours patrolling U.S. waters and made several attacks on U-boats. Note the unusual bomb release system.

ASW AIRCRAFT

Seaplanes, airships and kite balloons combined to protect convoys for considerable distance from friendly coasts.

Long hours in open cockpits in all kinds of weather, with limited navigation and communication equipment, lacking nearly all present day amenities, was the lot of the World War I patrol pilot. He was seldom rewarded with a U-boat kill.

Anti-Antisubmarine

Attacks by German float planes severely limited the activity of Allied ASW aircraft in certain areas of the English Channel and North Sea. Dogfights frequently developed. Two of the more typical types were the Friedrichshafen 33L, left, and the Brandenberg W-19, right. Of interest is the unique rudder arrangement of the latter which gave the gunner a clear field of fire rearward.

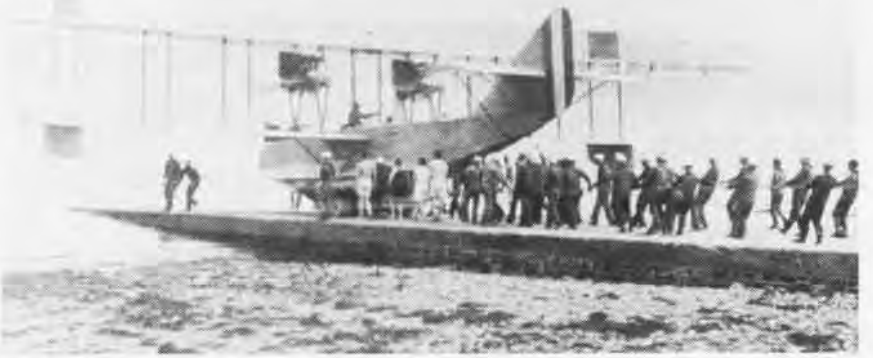
The greatest number of aircraft produced in the U.S. for patrol use during the war were 659 HS-1's and HS-2's; followed by 274 H-16's. The first of these to arrive overseas was an HS-1 which was delivered to Pauillac, France, in May 1918. By November, 570 U.S.-built aircraft had been delivered. Meanwhile another aircraft was being developed by the U.S. to provide longer range ASW patrol. It was to be capable of crossing the Atlantic under its own power, thus avoiding the dangers of a shipboard crossing in submarine-infested waters. The aircraft, the NC of trans-Atlantic crossing fame, was approved for development by Acting Secretary of Navy Franklin D. Roosevelt, in August 1917. Though this giant plane was completed prior to war's end, it was not available in time for active service.

An objective assessment of the airplane's effectiveness in ASW operations during WW I would have to mention that its most valuable function was as a supporting unit to surface antisubmarine forces. Though aircraft were found particularly effective in suppressing U-boat operations against convoys, their actual box score was unspectacular. During the war, U.S. Navy aircraft attacked some 30 submarines: ten attacks were at least partly successful – four probably sank the quarry. Overall, 178 U-boats were sunk during WW I. Surface vessels accounted for 45 percent of these, with mines in second place with 30 percent. Other submarines accounted for ten percent, and aircraft, along with all other causes, were credited with the remainder.

Still, we had gained a considerable amount of valuable experience. The U.S. Naval Aviation Force, Foreign Service, operating from 14 overseas patrol bases with 19,455 officers and men, had made some 20,000 flights and searched 791,398 nautical miles in countering a new form of naval warfare. Pilots and crews in the western hemisphere at ten stations ranging from Canada to Panama, added greatly to this experience.

H-12 at an East Coast naval air station is readied for a flight prior to an antisubmarine sweep. The N-9 in the background was also used on occasion to patrol inshore waters.

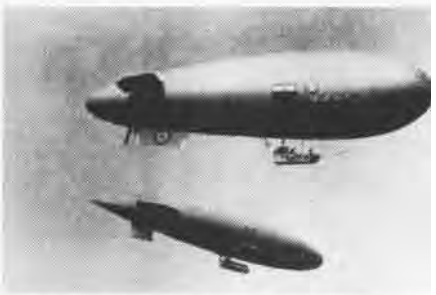
Numerous HS-1 flying boats line the parking ramp at NAS L'Aber Vrach, France, in 1918. These planes were the first U.S.-built seaplanes to be sent to Europe by the U.S. Navy.



This H-16 being eased into the water at NAS Queenstown, Ireland, was one of many which provided convoy protection for the northern and western approaches to the British Isles.

ASW AIRCRAFT

The German lead in LTA is evident by comparing the L-30, above, with those below. It had an endurance of 30 hours, speed of 63 mph, was powered by six 240-hp. engines and had 64,000-lb. payload.



Typical British airships in use for ASW patrol were the SS type, upper, and the older German-designed Parseval, lower.

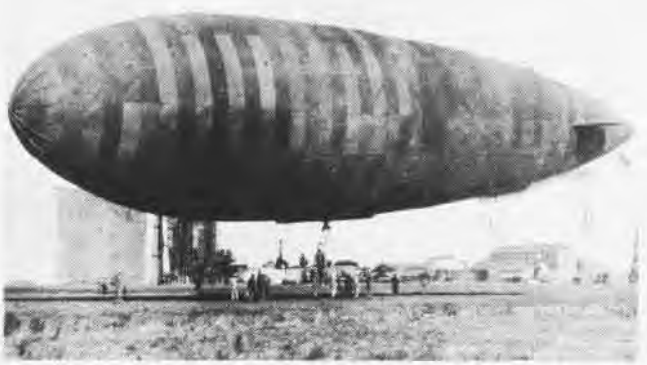
One of the earliest airborne actions against submarines in WW I involved the hydrogen-filled airship. It was not Allied craft against U-boats, but German Zeppelins against British submarines in the North Sea where they maintained almost continuous surveillance during 1915 and 1916. The British, also recognizing the possibilities offered by the airship, developed several types during the war to augment the assortment of ex-Army blimps and French and German designed LTA craft they already had on hand when the war began.

The first U.S. Navy LTA pilots to arrive overseas in August 1917 reported to RNAS Cranwell, England, and received further training in these ships. However, as it was soon determined that U.S. lighter-than-air efforts would originate from French bases, by November 1917, LTA pilots were sent directly to France for familiarization with the French airships which they flew on patrol.

Though the U.S. Navy developed airships of its own during the war, none went overseas. All American overseas ASW operations in blimps were conducted in French-built airships. Five of these non-rigids were acquired by the Navy for antisubmarine patrols over European waters. They consisted of two Astra-Torres and three Zodiac-Vedettes which operated from a U.S.-manned LTA station on the French coast. The station, NAS Paimboeuf, was turned over to the Navy together with one blimp of each type (AT-1 and VZ-3) in March 1918. The First Navy Airship Detachment was established there under Commander L. H. Maxfield who directed American airship activities. Airship operations which centered in

The Navy's first airship, DN-1, delivered in 1917, was dismissed by Jane's as being of small size and of no practical value.

French-built Astra-Torres had two 170 hp. engines and 10-hour endurance if not operated at top speed of 50 mph. The first of these tri-lobe non-rigids was transferred to the Navy in 1918.



This Zodiac-Vedette was received by U.S. forces at the time NAS Paimboeuf was commissioned in March 1918. In left background is the French designed canvas hangar used for maintenance.

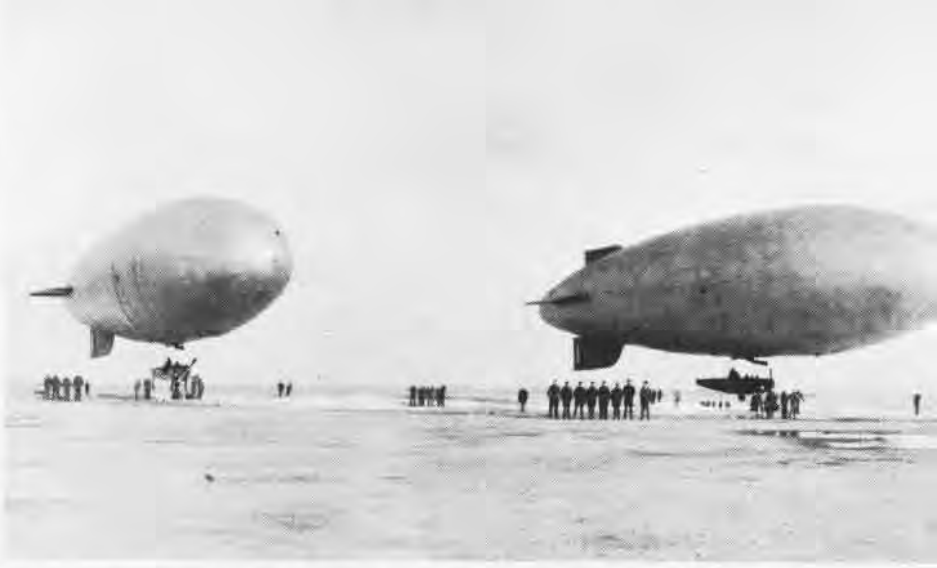
the Bay of Biscay, resulted in frequent convoy escort duties and occasional submarine sightings and attacks. Lt. F. P. Culbert on a flight from Paimboeuf in 1918 set an endurance record in the AT-1 by flying 25 hours, 43 minutes, while escorting three successive convoys through hazardous waters.

U.S. airship development began in 1915 with an order for the DN-1, the Navy's first non-rigid. The airship, however, was poorly designed and shortly after delivery, in April 1917, had to be scrapped. Meanwhile, a newer design had been approved and, in February 1917, the Secretary of the Navy ordered 16 B-class non-rigids. These blimps, using hydrogen as their lifting force, were planned for use in training LTA personnel. The first B-class airship was delivered in July 1917 by the Goodyear Company and, on its first flight, set a distance record for non-rigid ships. By the end of the year, five more had been delivered. Though all remained in the U.S., they were distributed to East Coast bases and made regular ASW patrols, two of which resulted in attacks on U-boats.

In 1918 the C-class non-rigid made its appearance. Carrying a greater load of depth charges and traveling at higher speeds with a longer endurance, this airship was designed for convoy escort duty. A few of these craft were completed before the Armistice but saw little service.

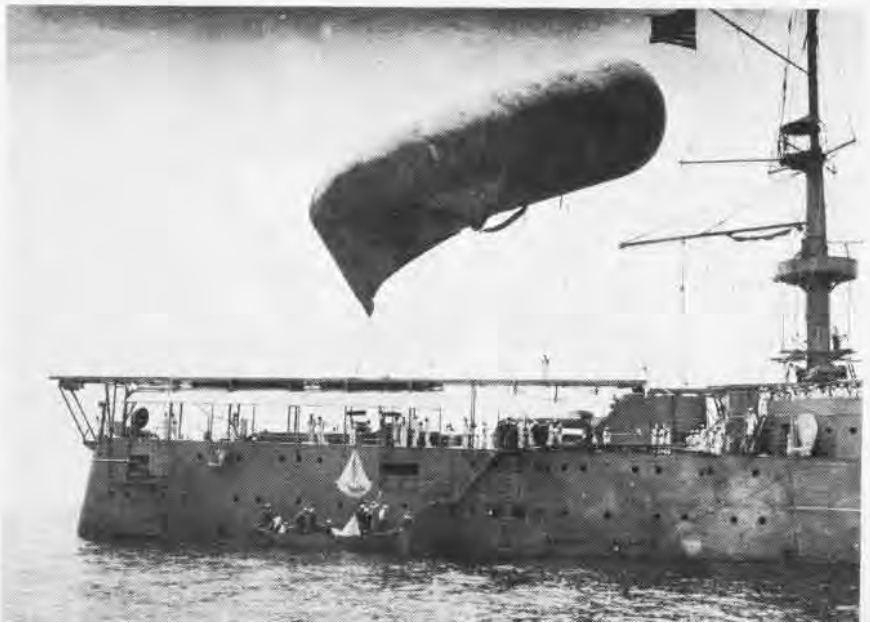
One other LTA development saw extensive service – the ship-towed kite balloon. This unpowered non-rigid was tethered to the stern of an escorting naval vessel and sent aloft. Suspended below the envelope in a basket was a "pilot" whose job was to watch for enemy submarines. In charge of one such unit on the cruiser USS *Huntington* during convoy escort duty in September 1917 was Lt. Marc A. Mitscher, senior officer of the aviation detachment aboard.

Kite balloon units were also based in France and Ireland with specially equipped ships assigned to tow them during escort duty. These included five destroyers and the yacht *Harvard*. Five more destroyers and two more yachts were being equipped when the war came to an end.



The B-class blimps, above, at Pensacola in 1918 were the principal LTA antisubmarine craft used in patrolling waters off the East coast of the United States. Only a few C type, below, were received in time to see service before the Armistice was signed.

USS Huntington (CA-5), below, tows a kite balloon to locate submarines during trans-Atlantic convoy duty in 1917. Though equipped with a catapult (over the fantail) no aircraft were launched as recovery operations at sea were thought vulnerable to attack.



Letters

WW II Aircraft

I need detailed information and recollections of maintenance and characteristics of four WW II naval aircraft: the F4F *Wildcat*, F6F *Hellcat* (particularly its night fighter version), F4U/FG *Corsair* and *The Beast* — the SB2C. As you probably know, the Royal Navy's Fleet Air Arm used certain versions of these aircraft during the war. I am gathering comparative data for an officially sponsored volume on the subject and would appreciate hearing from any old hands, especially former ground personnel — AMM's, metalsmiths, etc. — who worked on them.

Any U.S. Naval Aviation vets interested in this little Royal Navy project are invited to write to:

J. David Brown, Esq.
Naval Historical Branch
Ministry of Defence
Old War Office Bldg.
Whitehall, London, S.W.1, England

QT

We enjoyed the December 1969 *Naval Aviation News*. As a former PPC of VP-44 in WW II, I have wondered if they are still looking for subs and sighting whales.

The spook QT-2PC (modified Schweitze SGS 2-33) brought a chuckle from this ex Naval Aviator. I have flown the SGS 2-3 with six souls (children and babies) in the rear seat. I have a new fiberglass soarin plane with a glide ratio of 40 to 1 tha makes you feel like a big albatross in the silent world of flight.

The best glider pilots are Naval Aviators Keep them coming off the line as we are always looking for glider pilots.

Don Davis, LCdr. (USNR-Ret.
39 Nieto Avenue
Long Beach, Calif. 9080
Certified Glider Instructor #332695

Whoops!

Things are not always as they seem! Page 2 of the January 1970 issue of *NANews* has a picture of an A-7E/TF-41 ready for a heavy weight launch. The loading shown - tanks bombs, etc. - would lead one to believe tha the external loading weight was approximately 19,000 pounds, as stated in the accompanying article. This was not the case the external tanks were empty and inert bombs were used. Total external weight was approximately 14,000 pounds.

F. J. Gilligan
Head, Performance Branch
Naval Air Systems Command

Boilermaker

On page 30 of your January issue, an MM is pictured as controlling the speed of the shafts. I find this difficult to believe since his forward and astern throttles are chained together. The reason for this is prominently displayed between the two: "Jacking Gear Engaged." I presume the *Wasp* was in port and her plant cold.

Robert W. Stakel, Lt
Pers C-412
Bureau of Naval Personne
Washington, D.C. 2037

Inflation

I know the last year has been pretty inflationary, but to jump your subscription rate almost three times what it used to be seems to be a little much, doesn't it?

Or are you just trying to weed out the deadwood. That is, people like myself, a retired airedale, who has been a faithful subscriber for over 20 years in order to try to keep up with naval aviation.

Forrest B. Miller AC1 (Ret.)
6809 Larchmont Drive
North Highlands, Calif. 95660

¶ Editor's note: This letter is typical of the many we have received since the increased subscription rate. We regret the increase, but the price is set by the Government Printing Office, and we have no control over paid subscriptions.

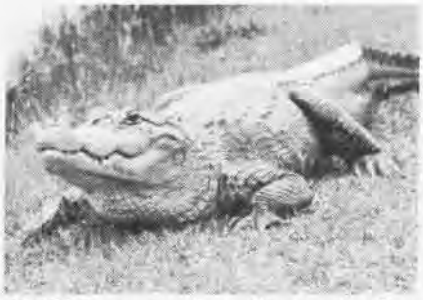
EDITOR'S CORNER

THE LIEUTENANT LIFTER is a unique piece of ground support equipment developed by the maintenance department of VC-5 to meet the needs of one of its pilots. Ltjg. Edward E. Ehrlich found that at 5' 4.4", he required a bit of assistance in climbing aboard his F-8 *Crusader*. Previously he had to use an oil drum or some other item to reach the first step. While deployed to Cubi Point from his home station at NAF Naha, Okinawa, the *ground raiser* was custom built to solve the problem.

Planning a trip to Cuba? If not, maybe you should. With the growing number of skyjackings, particularly among Florida-bound aircraft, it would be prudent for military personnel to consider the possibility that they might end their flight temporarily enjoying the hospitality of Mr. Castro. Here are a few suggestions which may help to prevent attracting undue attention:

- Civilian clothing should be worn whenever possible. (Military personnel are isolated from other passengers and questioned concerning their jobs in the service.)
- Carry a state driver's license or other civilian identification which may be used in lieu of your armed forces identification—in addition to your I.D. card.
- If questioned or interrogated in a foreign country, common sense and judgment are the best guide on general subjects. Questions concerning official matters are best answered with "no comment."
- On return to the U.S., an investigator may want to debrief you. You can assist him by mentally noting the methods and procedures used by those detaining you and reporting this information.

THE NICKEL-SNATCHER has retired. Those of you who remember returning from San Diego liberty and searching frantically through your pockets for a dime as you watched the water taxi making ready to cast off may wish to pause and recall those pleasant, if sometimes damp rides back to North Island. With the completion of the new bridge to Coronado, the boats are ending 43 years of trans-bay passenger service (see page 15).



ALFRED, *a seven-foot alligator that lives in well-fed luxury at CGAS Mobile, Ala., is symbol of Coast Guard's only aviation training base. Stencil of Alfred is used to decorate not only air station vehicles but also any aircraft visiting the station.*

The Apollo moon exploration series can never project the same sense of adventure it did before a recent General Services Administration announcement. GSA has issued a catalog and invited bids on spare parts and support equipment used in the *Apollo* program. So, if you see a spacesuit hanging in the window of your local Army-Navy surplus store, don't be surprised.

FOUR UC-45's *from NAS Cubi Point, R. P., roar through Philippine skies as they make what is probably the last formation flight of the Navy's once large fleet of Bugsmashers.*

King of the Road

Aircraft Ferry Squadron 32 logs thousands of flight hours, but "owns" no airplanes.

NAS North Island-based VRF-32 and Norfolk-based VRF-31 control the movements of all Navy and Marine Corps aircraft ferried to and from air stations, squadrons, factories, and overhaul and storage facilities. In fulfilling their mission, the squadrons fly practically every type aircraft in the Navy inventory.

VRF-32 and 31 pilots come to the squadrons from operational flying billets. Most of them – either when they report for duty or through squadron training programs and schools – are qualified to fly several different aircraft types.

For a 12-month period, ending in October last year, some 4,000 aircraft were ferried by the two squadrons. VRF-32, with an average of 50 pilots on board, ferried 1,622 of the total.

Below a VRF-32 complementary flight plan board in El Paso, Texas, LCdr. Poes files information for a leg of his cross-country flight in CH-53 Sea Stallion. At right, the CH-53 in flight.

By PH1 Robert E. Woods

A typical assignment for VRF-32 was to ferry an overhauled Marine CH-53 *Sea Stallion* helicopter from the North Island Air Rework Facility to MCAS New River, N.C., where it was assigned.

LCdr. Aron Poes, a pilot qualified to fly all Navy and Marine Corps helicopters as well as some fixed wing aircraft, was assigned the mission. Two enlisted men, ADR1 Joseph P. Rabey, a trained aircrewman, and ADR2 Harold B. Stevens, Jr., a trainee, were also assigned to the flight. While the crewmen checked the aircraft and loaded baggage, LCdr. Poes signed the transfer papers. The cross-country helicopter flight was under way.

The twin-turbine *Sea Stallion* is the largest of its type in military service. It can carry heavy combat equipment within its fuselage, or in a sling underneath, while carrying two platoons of combat-equipped Marines.

CH-53's carry approximately three hours of fuel, a restriction which made necessary several stops at military and civilian airfields during the cross-country flight. Because there are more military bases and civilian airports and more favorable weather conditions on the southern route, VRF-32 normally flies that way to the East Coast.

The flight to New River took six days because a faulty part grounded the helo in Texas for two days.

After the *Sea Stallion* was delivered to the Marine squadron in North Carolina, the ferry crew was transported to VRF-31 in Norfolk for transportation west. The crew flew back toward North Island in two fixed wing aircraft. Poes and Rabey flew to Mississippi where they picked up a westbound UH-34 *Seahorse*, grounded by mechanical trouble, and Stevens continued westward in a fixed wing aircraft.

The Marine Reserve UH-34 was ferried to Davis-Monthan AFB, Tucson, Arizona, where it was put in desert storage. All military aircraft no longer needed in service, or those awaiting other disposition, are stored in the "corrosion free" Arizona desert.

The UH-34 was the first helicopter used in vertical envelopment and was the first Marine aircraft to serve in Vietnam. After more than 15 years' service in the Marine Corps, the *Sea-*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LCdr. Poes and ADR2 Harold B. Stevens, Jr., check the CH-53's rotor head in San Diego before starting the cross-country flight, upper left. Stevens and ADR1 Joseph P. Rabey, top right, make final overall check. As USS Iwo Jima (LPH-2) returns to San Diego from a cruise, LCdr. Poes prepares for the ferry mission to New River, N.C., left. Approaching Guadalupe Pass, Texas, at right, ADR1 Rabey checks the charts.

ADR2 Stevens passes the time reading a Sunday newspaper in the after compartment of the CH-53. At right, downed by mechanical difficulties in Texas, the crewmen go to work.

horse is being phased out (*Naval Aviation News*, November 1969, pp. 32-33).

The round trip to the East Coast took eight days. It is not uncommon for helicopter crews to log between 40 and 80 hours of flight time monthly.

Ferry squadrons first became necessary in the Navy during WW II, and the first VRF-2 squadron was commissioned during that period. A second VRF-2 (the one known today as VRF-32) was commissioned in 1946. In 1948, it was redesignated VR-32 and, in 1957, the unit became VRF-32. The squadron celebrated its 23rd anniversary last July.

While most flights are in the continental United States, overseas ferry flights to Pacific bases, including Vietnam, are not uncommon for VRF-32.

Some historical flights have been made by VRF-32. In 1968, Captain Hugh J. Tate, VRF-32 commanding officer, piloted the last P-5 *Marlin* seaplane from San Diego to Patuxent River, Md., where it was presented to the Smithsonian Institution for display. The flight marked the end of an era for Navy patrol seaplanes.

VRF-32's motto, *Rex Itineris*, loosely translated, means "King of the Road."

During a refueling stop of the UH-34 on the return trip, LCdr. Poes talks with an aircraft service maintenance man at NAS Dallas, Texas, top. At left, Poes and Rabey in the cockpit of the UH-34. Over desert country in the southwest, the Seahorse casts a shadow on the mesquite.

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