NAVAL AVIATION NEWS

42nd Year of Publication

SEPTEMBER 1961

NavWeps No. 00-75R-3

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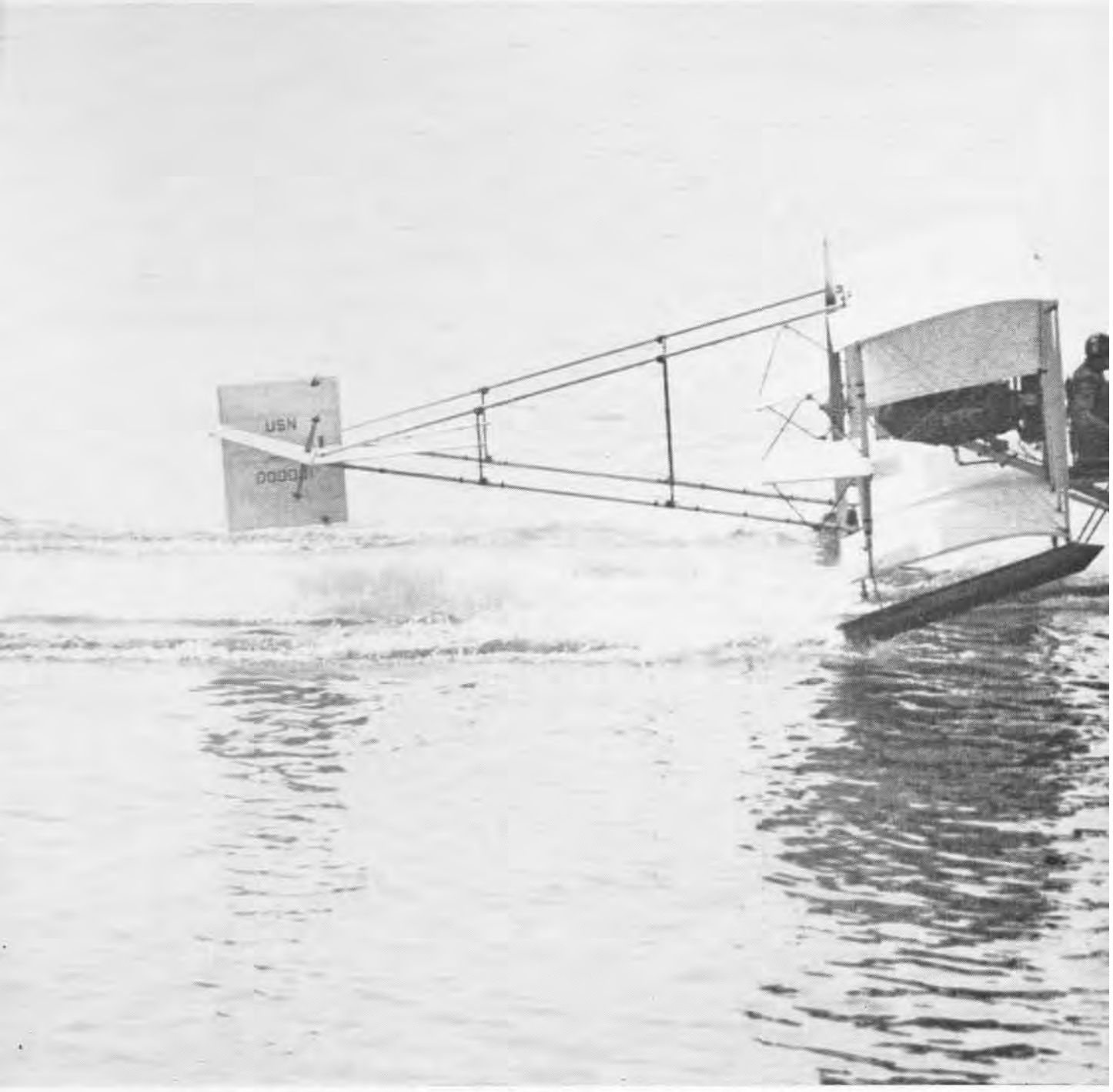

VIM, VIGOR AND A. V. VERVILLE

This 1911 airplane rushing into the wind in the best 1911 fashion made it into the blue a few weeks ago. How it got there would be giving away the story we present on pp. 20-25. Down to the last stitch of pure linen thread—and pat of glue—it is the A-1 reincarnated, because a young (70) BuWeps engineer named Fred Verville, Industry, the Institute of Aerospace Sciences and a hefty segment of NAS North Island decided it could be done. So it is that the A-1 flies again from familiar waters as it did when Naval Aviation and Fred Verville were very, very young indeed.

NAVAL AVIATION NEWS

FORTY-SECOND YEAR OF PUBLICATION, SEPTEMBER 1961

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USS Hancock demonstrated the amazing versatility of carriers when she launched the A3D while at anchor. Powerful steam catapults make this accomplishment possible. In all, two Skywarriors, four A4D Skyhawks and two AD Skyraiders were catapulted.

Issuance of the publication was approved by the Secretary of the Navy on 3 April 1961

Published monthly by Chief of Naval Operations and Bureau of Naval Weapons to disseminate safety, training, maintenance, and technical data. Send mail to Naval Aviation News, Op 05A5, Navy Department, Washington 25, D.C. Office is located at 2306 Munitions Bldg. Telephone: Oxford 62252 or 62259. Annual subscription rate is $2.50 check or money order ($1.00 additional for foreign mailing) made payable to Superintendent of Documents, Government Printing Office, Washington 25, D. C. Single copy, $.25.

NAVAL AVIATION NEWS

Two Stations Commissioned
Lemoore and Meridian Now Open

NAS LEMOORE, Calif., commanded by Capt. Howard M. Avery, was officially commissioned 8 July; and NAAS MERIDIAN, Miss., skippered by Capt. W. F. Krantz, was commissioned 14 July. Under Secretary of the Navy, Paul B. Fay, Jr., was the guest speaker at Lemoore.

On hand for the ceremony at Meridian was a host of military and civilian officials, including Sen. John C. Stennis and Rep. Arthur Winstead of Mississippi. McCain Field was designated in honor of the late Admiral John S. McCain. The plaque was unveiled by RAdm. John S. McCain, Jr., who was accompanied by his wife and their son, Ltjg. John S. McCain, III.

Representing the Navy Department were Kenneth E. Belieu, Asst. SecNav for Material; VAdm. R. B. Pirie, DCNO(Air); RAdm. Frank Johnson, Office of Naval Operations; RAdm. Peter Corradi, BUDOCKS; RAdm. P.D. Stroop, BUWEPS; and RAdm. R. E. Ward, Chief of Legislative Affairs.

Lemoore, the largest installation of its type on the West Coast, held an "Open House" which featured static display, aerial and ground demonstrations, the Navy's crack parachute team, the *Chuting Stars*, military bands, and many other attractions.

The commissioning of the one-hundred-million dollar master jet base was a highlight of the 50th Anniversary of U.S. Naval Aviation.

NATTU Instructor is Cited
Gets SecNav Commendation Medal

T.L. Bolin, AECS, has been awarded the Secretary of the Navy's Commendation Medal. It was presented in ceremonies by Capt. Robert J. Fleming, commanding Naval Air Technical Training Unit, Jacksonville. Bolin is an instructor at the Class (A) Aviation Electrician's Mate School.

From September 1959 to March this year, Bolin modified his school's varidrive units and associated test panels, thus making for an annual electric power saving of $8000. This job, completed last summer, improved the instructional atmosphere by reducing the heat and noise level.

Then Chief Bolin was notified that his student quota had doubled. He expanded and further developed the varidrive units, so that available equipment was adequate to meet schedules.

CAPT. FLEMING PINS ON SECNAV MEDAL

CONGRESSMAN GEORGE MILLER *of California and Postmaster General J. Edward Day listen as VAdm R. B. Pirie, Jr., describes Navy's first aircraft 50 years ago. The Curtiss A-1 model (on table) from the Smithsonian Institution was inspiration of Post Office designers in bringing out a commemorative stamp (enlarged in background) in honor of the Golden Anniversary of Naval Aviation. On August 21st, the stamp went on sale at post offices throughout the country.*

TV Aids NAS Oceana Tower
Camera on End Instrument Runway

NAS OCEANA has installed closed-circuit TV to enable tower operators to observe aircraft awaiting take-off from 12,000-foot runway five-right during instrument weather. On clear days the air controlmen use the system to check landing gear of approaching planes.

The TV camera can be trained and focused for long-range or close-ups by air controlmen in the control tower.

Phame Phinds 'Phenagler'

Phetching Pheat in Phantom II

It was a philicitous day at Oceana, Va., when Capt. William A. Shryock was presented a certificate upon the occasion of his phirst phlight as a pilot of a *Phantom II*. This qualified him as "Phenagler No. 2." He commands Carrier Air Group Four.

The award read, in part: ". . . and in so doing, demonstrated phabulous phortitude in pheats of phenomenal phlights in this phastest, pharthest phlying and most pherocious of all

CAPT. SHRYOCK IS MADE #2 PHENAGLER

phighters, making him phit for membership in the *Phantom* Phraternity."

He was presented the certificate by Cdr. Gerald G. O'Rourke, OinC of VF-101, Detachment Alfa. "Phenagler No. 1" honors are held by Cdr. Charles Baumeister, C. O. of VF-101.

CVG-4 is the first unit on the East Coast to receive the McDonnell F4H. It is a twin-jet, Mach 2 fighter.

ASW Exercises Have Begun

Navy Units Visit South America

Combined anti-submarine warfare training exercises in which the navies of the United States and eight South American countries are participating for a four-month period commenced 7 August 1961. Elements of air forces of some of the countries are taking part.

RAdm. Louis A. Bryan, USN, Commander of the Atlantic Fleet's Destroyer Flotilla Two, commands U. S. Naval units in Exercise *Unitas II*, which consist of four destroyer types, the submarine USS *Clamagore* and a detachment of P2V *Neptune* patrol aircraft of VP-11.

United States naval units are circumnavigating the South American continent commencing with a trip down the West Coast, exercising en route with ASW units of Venezuela, Colombia, Ecuador, Peru and Chile. Adm. Bryan's force will then transit the Chilean Inland Passage and the Magellan Strait to the Atlantic and proceed up the East Coast of South America, exercising with ASW units of Argentina, Uruguay and Brazil.

United States units are spending approximately 34 days in South American ports. They are scheduled to return to their East Coast homeports by 7 December 1961.

Unitas II is similar to the first *Unitas* exercise held last year from 22 August to 14 December.

U. S. Navy participation is under the direction of Adm. Robert L. Dennison, CinC, U. S. Atlantic Fleet.

HOLLANDERS HAVE *good words for it! We like the title of an article in the official organ of the Royal Netherlands Navy. It's a simple one: "Half a Century of American Naval Aviation." NANews has superimposed the name of the publication, an echo of our own "Alle Hens."*

Ney Award Goes to Pax

Ten Other Air Units Recognized

Naval Aviation did well in competition for the Ney Memorial Awards for outstanding general messes.

NAS PATUXENT RIVER received the coveted award for the outstanding Navy general mess ashore. Three carriers and seven naval air stations were among the 35 other ships and shore establishments to receive special certificates in recognition of leadership in food service. More than 1100 general messes competed for the awards.

Food Service Executives' Association sponsors the Ney Memorial Award Program. The Association is a national non-profit educational and fraternal organization comprised of executives in the fields of food procurement, preparation, management and service.

Certificates were awarded the carriers *Antietam*, *Independence* and *Yorktown*, and Naval Air Stations Corpus Christi, Glynco, Johnsville, Moffett, Seattle, Olathe and Oceana.

Pilot Wins Essay Prize

Freedom Foundation Gives Medal

At NAS GLYNCO, Ga., Cdr. Stanley Montunnas was awarded third place in Freedom Foundation Essay Contest. Capt. W. W. Bush, Jr., commanding officer of the Naval CIC School, presented the medal. Cdr. Montunnas' prize-winning essay was entitled, "My Vote—Freedom's Privilege."

This is the second consecutive year Cdr. Montunnas has received an award. He took fourth-place honors last year.

Before reporting to the CIC School, he was commanding officer of Attack Squadron 75 aboard USS *Independence*.

GRAMPAW PETTIBONE

Check and Recheck

Two experienced pilots with more than 1000 hours of Beechcraft time between them were out on an instrument refresher hop in their trusty SNB.

After their seventh GCA practice approach, the pilots tried to raise the landing gear, but got an unsafe gear indication with a red warning light in the wheel handle. Continuing around, they made another GCA approach, retarded the throttle, lowered the gear and saw the red warning light go out as the horn stopped glowing. Apparently, the wheels had locked down normally.

Completing the run but with no touchdown, the pilot waved off, placed the gear handle in the UP position, again got a red light in the handle, and the landing gear motor circuit breaker popped. Visually the gear appeared to have remained in the normal DOWN position, but now they got a warning horn when power was retarded.

Leaving the GCA pattern, they attempted to correct their wheel problems. All attempts to correct the electrical trouble failed, for the circuit breakers popped immediately after they were reset, and the gear would not move electrically.

Using his Emergency Flip Chart for the SNB-5, the pilot went through the procedures for manually lowering the gear. With gear handle down and circuit breakers pulled, he uncovered the emergency clutch, pushed the clutch forward, engaged the manual crank and pulled up and aft on it. The handle didn't move! Exerting more force on it, he only stopped when he became afraid of breaking the crank off. Pulling the clutch aft with his toe and heel he covered it again, and both pilots checked the gear visually. It appeared down and locked, but the red light stayed on. The horn just kept on blowing!

Talking it over, the pilots decided they had done everything that could be done, that their trouble was in the

electrical system and that their best line of action was to go on in and land. They were pretty certain the wheels were locked.

The copilot called the tower, informed them of the situation and asked for crash equipment to stand by. The tower rogered and cleared them for a straight-in approach.

A good approach and a smooth touchdown were made although the light remained on and the horn blew all the way in. On the roll-out, the landing gear slowly retracted and the SNB slid to a stop on its belly. The wheels weren't locked!

Grampaw Pettibone says:

Jumpin' Jehosophat! I wonder how many of our light bomber pilots know the procedures for manually lowerin' the gear by heart or how many carry the Emergency Flip Chart these lads had along? Not that the chart helped any since the pilots missed on a couple of real important points.

First of all, SLOW DOWN! Second, put the gear handle down, pull the gear circuit breakers and leave 'em pulled. Third, depress the emergency clutch ALL THE WAY and after the wheels drop, KEEP IT DEPRESSED while you engage the crank and crank like CRAZY! Visually check the clutch and then if the horn blows with the throttle retarded, they're NOT locked, and you go through it all again.

Both pilots KNOW they should have had a maintenance or safety officer come to the tower for a check of their situation before landing with a horn blowing, so Ol' Gramps won't beat them to death on THAT subject! How are YOUR emergency procedures?

Rush Job

A couple of gents with some 7000 total flight hours and almost 1300 hours in the *Beechcraft* between them made their final approach to a landing after an uneventful 4.5 hour flight. The touchdown and roll-out were normal, a real greased-on job.

At about 45 knots as the tail started to lower, the pilot reached down to open the cowl flaps. The left cowl flap opened easily, but as he was pulling up on the right cowl handle, it slipped out of his hand and turned to the right. He pulled it again, but as he did so he felt something bump the back of his hand.

The warning horn started blaring, and both pilots realized with horror that the gear was retracting! Since their speed was too slow even to attempt a wave-off, both pilots immediately secured ignition, batteries, and fuel. With props turned to clubs, the SNB slid to a stop on the runway. The landing gear handle had been accidentally bumped to the UP position.

Grampaw Pettibone says:

Sonofagun! What all the blasted rush to open cowl flaps and raise landing flaps is, I really can't figure out!

First, you gotta land the bird, and that isn't completed until you either turn off the runway or have to apply power to taxi.

Cylinder temp is usually pretty low after a normal landing approach and touchdown. Why sweat it?

Raisin' the landing flaps can be lots of help in a crosswind and help you maintain directional control on a roll-out, but remember: as they come up,

ILLUSTRATED BY Oblon

be prepared for an increase in lift on the upwind wing as they pass through 10 to 13 degrees of flap! This can be the start of a whooperdo of a groundloop.

Head Up and Locked

Scheduled for a night proficiency hop in a T-28 were a couple of instructors. In order to expedite their departure, the front seat pilot performed the preflight while the rear seat man filed the necessary flight plan. Returning from OPS, this man found the pilot all strapped in and waiting to "fire her up." As he strapped himself in, the rear seat man asked if the preflight was completed. His buddy answered "I got the gear, gas and oil."

After taxiing out to the duty runway and completing a thorough engine run-up, they received take-off clearance. At 40 knots rolling, they had a slight left drift. The pilot applied a little right rudder pressure—no effect. He tapped right brake and the T-28 straightened out.

At 80 knots he tried to pull the nose wheel off—the stick would not move! He tried to shove the stick forward—it seemed frozen! Chopping the throttle he called "Tower, aborting" and went from brisk taps to hard braking, but the brakes seemed completely ineffective. About now the copilot called the tower, "Going off the end," cut the mixture and gas, while the pilot got the mags and battery off and blew the canopy.

As they hit the perimeter fence after a bumpy ride through the rough overrun, the nose wheel sheared and they ground to a halt. The controls gust lock was STILL ON!

Grampaw Pettibone says:

Sufferin catfish! There's nothin' in this flyin' business that can take the place of a check-off list. The throttle lock didn't work in this case, but No. 1 item both on entering the cockpit and before take-off is to check the flight controls for free and proper movement. If these lads don't straighten out and get with it, some day they're gonna rush out and "buy the farm."

Hairy

The pilots of a couple of A4D-2N's had filed a DD-175 for a night instrument training hop. After an extensive briefing and a thorough preflight of their aircraft, they started engines and ran through the pre-taxi check-off lists. During taxi to the duty runway, check lists were run through again and re-checked after taking position on the runway for a section take-off.

The wingman found everything checked O. K. and placed his lights on bright and flashing to signal he was ready to roll. Both pilots released brakes, and the initial take-off roll was very smooth.

At about 130 knots, the flight leader lifted his nose off, and the wingman attempted to do the same. He received no response from back stick despite heavy control movements. Thinking his nose strut had deflated, he tried one rocking motion with a good amount of forward stick and then full back stick. No response! He had to decrease power to keep from over-running the lead plane as he was accelerating faster, owing to his own lower angle of attack. He had also been applying intermittent nose-up trim, but had not used the console trim over-ride switch.

Right now he decided to abort the take-off. He had used up about two-thirds of the runway and the arresting gear was still ahead of him. Speed brakes were extended, power cut to idle, maximum brakes short of tire blowout applied, and the tail hook handle to the down position. He now saw some colored lights to the side of the runway and got off the brakes since he thought they marked the arresting gear. After what seemed an endless wait, there was no arrestment, and he realized he was going off the end. He looked at the airspeed indicator with ejection in mind. He had slightly less than 100 knots and about 1500 feet of the runway remaining.

He quickly decided on ejection, pushed on FULL THROTTLE and pulled in the speed brakes! He alternated between watching the runway end, the approaching airfield boundary fence and the airspeed indicator. Finally he felt he could wait no longer and as the airspeed was passing through 110 knots, pulled the face curtain!

The whole cockpit lit up with a white glare and he felt a steady acceleration, not a jolt as he expected. As he tumbled, he could see the sparks and flame of the rocket and almost instantly the parachute began streaming out between his legs, gleaming sort of pink from the reflected glow of the burning plane. If it would only blossom, he felt he'd be O.K.!

He felt no opening shock of the chute and hit the ground with what seemed a tremendous impact. He did not lose consciousness, but the wind was knocked out of him for 10 or 15 seconds. About this time, he realized he had driven his legs into soft marshy ground almost to his hips! Heat waves from the burning A4D washed over him as he lay mired in the mud. He had to get away before it blew!

With tremendous effort he managed to unstrap, unzip, and climb out of the torso harness, leaving the whole works in the mud. He crawled about 50 feet further away from the fire where he met the crash crew and final rescue. His injuries? A sprained left ankle, left knee and some chipped teeth!

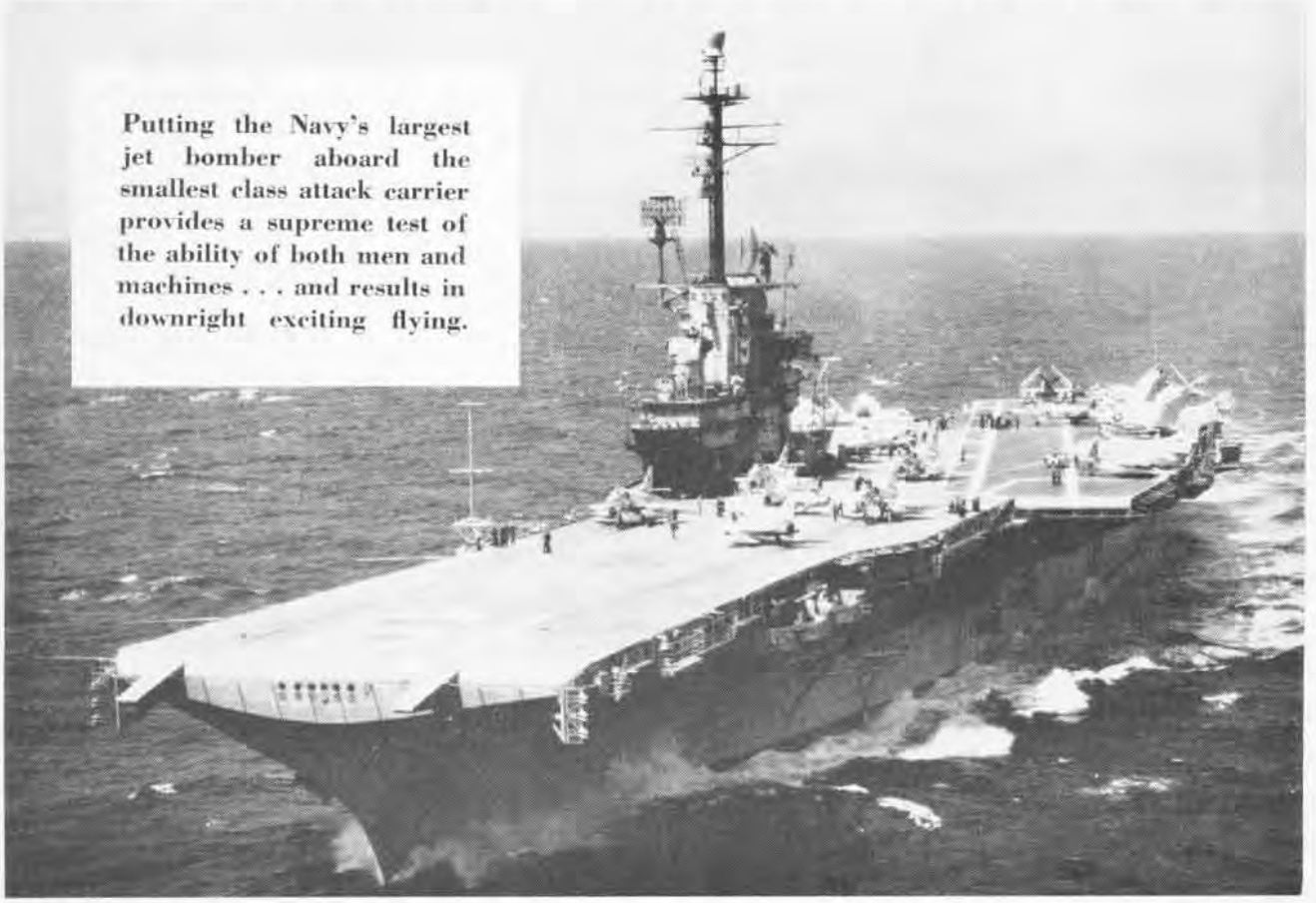
Grampaw Pettibone says:

Great balls of fire! This is the hairiest ejection I've run across yet! The RAPEC seat and all the associated hardware functioned exactly as advertised, but the NB-9 chute only streamed and did NOT blossom! It had not been packed in accordance with the Handbook of Maintenance Instructions! The HMI was in the maintenance office, not in the parachute loft—the riggers claimed they didn't know it existed!

Today's ejection seats are highly complicated mechanisms. Maintained perfectly, they work perfectly. This is a life-or-death one-shot mechanism. There can be no deviations or compromises allowed where seat maintenance is involved. Answer this critical question: How's *YOUR* quality control?

'LAST PLANE IN THE GROOVE!'

Putting the Navy's largest jet bomber aboard the smallest class attack carrier provides a supreme test of the ability of both men and machines . . . and results in downright exciting flying.



By Ltjg. Gary Caron, VAH-4

WHEN THE CALL of "Last plane in the groove" is sounded during flight operations, a shuffle of excitement always passes through the off-duty spectators perched high in the 0-6 level ("Buzzard's Row") of the attack carrier USS *Hancock*.

Invariably, that "last plane" lining up for landing aboard the *Hancock* is an A3D *Skywarrior* heavy attack bomber.

CVA-19 returned to the United States and her home port of Alameda in March 1961 after an eight months Far East cruise with the Seventh Fleet. But they still talk about the "heavies" aboard the "Hannah."

A3D *aficionados* are attracted by the same instinct of imminent danger which draws people to the bull fight ring or to sports car races. Is it safe? . . . Well, its being done every day.

Skywarrior crewmen allege that heavy attack pilots are among the coolest, and most capable, tailhook aviators in the trade. No doubt, fighter and light attack pilots are equally courageous . . . and capable. Looking at it objectively, however, we see that the A3D is a multi-engine heavy jet bomber. There's only one man aboard to drive the bird. It's a full-time job.

It requires some skill and a bit of forethought to jockey in at around 150 miles an hour, at the controls of a machine weighing twenty-five tons, and score a bullseye every time on a narrow strip of floating real estate—such as the *Hancock's* flight deck.

But, day and night, the *Hancock's* all-weather, radar-equipped A3D's were on call during the cruise, capable of ranging for thousands of miles with their deterrent punch.

A popular American weekly newsmagazine recently listed the Navy A3D as one of the United States' seven most lethal offensive assets, alongside such headlined performers as the B-52, *Polaris* submarine, *Atlas* missile, *et al.*

Carrying a crew of three—pilot, radar bombardier, and gunner/navigator—the A3D is capable of speeds in excess of 600 knots. In its natural habitat, the A3D can usually be seen nosing around the Navy's fast attack carriers.

The *Hancock's Skywarrior* detachment, "Det. Charlie," was another typically fine group to be sent out by Heavy Attack Squadron Four, of Whidbey Island, Washington. Heavy Four supplies bomber detachments for the smaller *Essex*-class attack carriers, such as USS *Hancock*, USS *Lexington*, USS *Ticonderoga*, USS *Bon Homme Richard*, etc. The parent squadron does not deploy, but remains at Whidbey, continually training replacement detachments.

Heavy Four is presently commanded by Cdr. A. Thomas. His predecessors of the past few years were Cdr. J. J. Emanski, Jr., and Cdr. T. H. Moore.

VAH-4's own global striking force comprises a considerable armada of aircraft and manpower.

On any given day, VAH-4's big Douglas *Skywarrior* bombers may be pulling contrails through the skies over many far-flung places—Tokyo, Manila, Honolulu, Anchorage, Denver, Phoenix, etc.

Specializing in sound maintenance procedures and well-trained flight crews, Hatron Four detachments have consistently dominated the ComFair-Whidbey, ComNavAirPac, and all-Navy competitive bombing exercises in the past few years.

During Fiscal 1960, the squadron completed an unprecedented "Grand Slam" in heavy attack by winning the AirPac Bombing Derby, the U. S. Naval Air Weapons Meet (Operation *Top Gun*), and being awarded the annual Navy E for Excellence among Pacific Fleet heavy attack squadrons.

Det. Charlie, aboard the *Hancock*, is typical of the Heavy Four Dets. sent to the Far East during this period. Many of the "ground-pounders" and flight personnel in Det. Charlie were veterans of these high-pressure Navy competitive training exercises.

Det. Charlie, commanded by Cdr. Al Marn, scored the highest grade among the squadron/detachments of Carrier Air Group 11 in the ORI operation, prior to the USS *Hancock's* departure for the Western Pacific. (Four of the past five detachments sent out on deployment by Hatron Four have ranked as the top outfits in their respective Air Group ORI's.)

The ORI (Operational Readiness Inspection), conducted by ComFair-Hawaii, consists of a comprehensive series of long-range strike, navigation, and photo-reconnaissance missions. The exercises are designed to measure each individual unit's readiness for combat. Ground inspections on maintenance capabilities and techniques, weapons loading procedures, as well as intelligence briefings and de-briefings also figure into the final grades.

At the post-ORI critique, the chief observer for the heavy attack phase of the test commented particularly on the "professional performance" of Det. Charlies's flight crews and ground support personnel.

Det. Charlie's bomber crews achieved a score of 97% (High Outstanding) on their various high-altitude, radar-bombing missions.

Although Det. Charlie excelled in bombing, this was by no means its sole purpose in being aboard the *Hancock*.

The A3D's performed a variety of tasks aboard the carrier during the cruise, including photo reconnaissance (really radar recco), high-altitude radar-bombing, low level attack, "path-finder" escort for other aircraft, long-range precision navigation, and "charter jet" air mail service between ship and shore.

One of the spectacular highlights of the cruise was the *Hancock's* participation in the 1960 Philippine Aviation Week festivities, held in Manila, 20-27 November 1960. Air Group 11 represented the U.S. Navy in the annual aerial exhibition and also helped sell the story of Naval Aviation throughout the Southwest Pacific, over radio and television networks.

A live television show, from the flight deck of the *Hancock*, featured interviews with A3D crewmen and pilots from the Air Group.

Perhaps the most impressive single scene on the TV show, and of the entire Aviation Week event, was the catapult-launching of seven jet aircraft while the carrier was at anchor in Manila Bay. Not surprisingly, the greatest interest and excitement was created when one of Det. Charlie's A3D's—the largest planes aboard—was thrust airborne.

Grand finale of the week was an all-day air show at Manila International Airport, featuring combat air units from Nationalist China, the Philippines, Great Britain, New Zealand, Australia, the U.S. Air Force and the U.S. Navy.

Carrier Air Group 11 showed itself to be a poised and professional power for peace, by using the theme of straight combat and tactical flying in contrast to colorful acrobatics.

The Air Group performed mass jet and prop fly-bys, sonic booms, tactical

CDR. AL MARN, DET. CHARLIE'S O-IN-C

SHOP CHIEF AND HIS ELECTRONICS CREW

PLANE CAPTAINS CHECK FUEL QUANTITY

FRESH WATER WASH-DOWN ON HANCOCK

maneuvers, helicopter demonstrations and simulated carrier landings for some 300,000 spectators.

Det. Charlie's A3D's led the mass jet fly-by, and later landed and taxied around the field to give the crowd a closer look at the aircraft.

In addition to performing in the Philippine Aviation Week Air Show, Air Group 11 also flew in periodic training exercises in the Philippines, Taiwan and Japan.

These exercises were designed to maintain the operational readiness of the air group and to provide training for the defense capabilities of our allies in the Far East.

Det. Charlie's proficiency in heavy attack was demonstrated by several high altitude radar bombing "Bullseyes," including two consecutive Bulls on the same mission by Ltjg. Gregory Snow. Ltjg. Snow received an official message of commendation from ComSeventhFleet for this feat.

The detachment flew over 1000 hours during the cruise, and averaged 31 hours flight time a month per crew, which is believed to be a new high for heavy attack crews while on deployment in the Western Pacific.

The 31 hours a month per crew may not necessarily be a new record. By any standard, however, it's an impressive figure in the light of the handicaps and inherent hazards of operating A3D's off a *Hancock*-sized carrier.

The *Hancock*, an *Essex*-class carrier, is physically the smallest type of aircraft carrier now being used on the line by the Navy. (Oddly enough, the *Hancock's* small flight deck always seems to look smaller at night.) Yet strategic considerations require the *Hancock* to maintain a balanced, versatile assortment of aircraft aboard.

Owing to space limitations, A3D maintenance must be accomplished under the worst possible working conditions. Repair work is done topside where the planes and the men are exposed to weather. Despite all this, Det. Charlie maintenance produced an outstanding aircraft availability percentage from the first to the last launch of the cruise.

The story of the A3D detachment aboard the *Hancock* typifies in many respects, the spirit of dozens of other outfits in Naval Aviation today—a group of well-trained men dedicated to perfection in performance.

LCdr. Al Howard, maintenance officer, returned from the cruise with the somewhat dubious reputation of being one of the biggest scroungers in the Western Pacific. Fred Gibson, AMC, Richard Miller, ADC, Leonard Payne, ADC, Myron Ruffing, AD2, and Pete Kaess, AN, received letters of commendation for their consistently outstanding work.

Success of the *Hancock's* A3D detachment can also be attributed to LCdr. M. J. Harrington, X.O. and LSO, and LCdr. John Priest, operations officer for the unit.

AN AIR INTELLIGENCE OFFICER GIVES A3D FLIGHT CREW BRIEFING

DET. CHARLIE PILOTS HANDLED 'HEAVIES' ABOARD THE HANNAH

HS-1 Gets its First HSS-2's

Pilot and Crew Training Underway

Ten Sikorsky HSS-2 helicopters have been flown from the Sikorsky Aircraft Plant at Stratford, Conn., to NAS KEY WEST for the training of pilots and ground crew in the fleet introduction program.

Thirty pilots and 100 maintenance personnel will be trained for three months in the operation of the HSS-2. Both pilots and maintenance personnel completed ground training prior to delivery of the new craft.

The 30 pilots, who will return to their squadrons on completion of the introduction program, are from HS-2 and HS-10 at Ream Field, San Diego, HS-3 at NAS NORFOLK and HS-1 at NAS KEY WEST.

Cdr. Robert E. Hickle, C. O., is in charge of the training program.

Navy Trains Local Staff

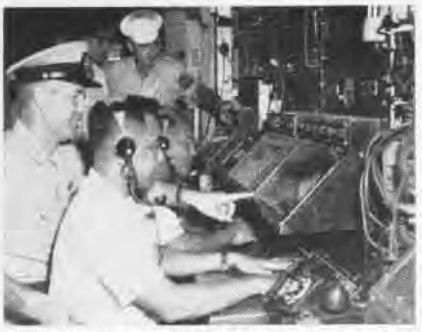
Radar Unit Given Manila Airport

A U.S. Navy aircraft surveillance radar unit for the control of aircraft in the Manila area was turned over to the Philippine Civil Aeronautics Administration in formal ceremonies at Manila's International Airport 18 July.

RAdm. David J. Welsh, Commander U.S. Naval Forces Philippines, presented the keys to Col. Urbano B. Caldoza, Philippine CAA Administrator.

The radar unit consists of a large truck trailer containing the radar operators' controls and radar antenna, a power van with two diesel engines which drive 15kw generators, and a spare parts van with truck and workshop. It was transferred from NS SANGLEY POINT, where it has been in operation since 1957.

With the unit installed, Manila International is the only airport in the



PHILIPPINE CONTROLMEN GET THE WORD

Philippines with radar coverage. The unit is capable of tracking as far away as 30 miles and up to 5000 feet altitude.

Four Philippine Civil Aeronautics Administration technicians from MIA completed an intensive training program on the unit at Sangley Point.

The CAA men—Conrado Rosales, Timoteo Villate, Arturo Crespo and Dominador Clavio—studied everything from actual tracking of Manila and Sangley Point aircraft on the unit's radar scopes to making emergency repairs to the complex unit.

Communications facilities of the unit include three ultra high frequency, two very high frequency and one high frequency radio sets. These will cover all aircraft frequencies.

HS-5 Passes Safety Mark

Tops 16,000 Accident-Free Hours

Sixteen thousand consecutive accident-free flight hours is the record reported by HS-5. The squadron, which currently operates 16 Sikorsky HSS-1N all-weather helicopters, is home based at NAS QUONSET POINT and deploys aboard *Lake Champlain*. During the accident-free period the squadron was engaged in evaluation of new planes and tactics.

A high state of operational readiness is also reported with "15 fully qualified night crews, ready to pursue a distant contact under any weather conditions." Additional flight crews are expected to be night-qualified in the near future.

HS-5 claims constantly improving maintenance and equipment and expects 16,000 more safe flying hours.

Space Age Has Problems

Wary Experts Fix Faulty Igniter

The Aerojet-General Corp. of Azusa, Calif., came up with a *Case of the Non-Igniting Igniter*, which caused them considerable consternation, according to a recent release.

Technicians at a rocket test site were in the countdown for a test firing. As the count neared zero, expectancy heightened. Even their ragged little mongrel mascot wiggled its tail more vigorously with each count.

After the firing button was pushed at the sound of "Zero," nothing happened!

In any instance of a malfunction or defect in any space project, the detectives assigned to the case are engineers and chemists. When the engineers track down the mechanical culprit and the cause of its guilt can't be found, the chemists take over the problem. The heart of the guilt may be a tiny speck, visible only to the microscope, but which can be chemically analyzed to pinpoint the blame.

Trouble was traced to the "igniter," a wire-mesh device shaped like a thermos jug and filled with chemical igniter pellets. But nobody knew why it failed. The company's chemical experts were called in to investigate. They discovered a foreign substance on the igniter, submitted it to analysis and promptly banished the hydrant-hungry hound from the test site to other finer, cylindrical pastures.

GRUMMAN'S FLIGHT LINE *has been busy lately with two new Navy models undergoing flight development. Photographed during a lunch time rest on a busy day are the W2F-1 Hawkeye and the A2F-1 Intruder. On this particular day, a series of Navy evaluation flights by NATC pilots in the A2F-1 were concluded, while the first of such flights in the W2F-1 commenced. Both feature advances in avionics.*

ANTARCTIC TERRAIN, *desolate, a flat icy plateau for the most part, is viewed by a trimetrogon camera installed in a ski-equipped P2V-7 Neptune assigned to VX-6. Many new features are discovered during planned "photomapping" flights, conducted during Antarctic summers.*

ANTARCTIC NAMES HONOR VX-6

IN A RECENT publication of names assigned to recently discovered features on the Antarctic continent, the U.S. Board on Geographic Names honors 22 officers and men of Air Development Squadron Six (VX-6) which provides air support for scientific studies during Operation *Deep Freeze*.

In a previous listing of accepted names, the Board honored 11 more, two aircraft used in photographing the continent, and the squadron itself.

Near the head of the list appears Airdevronsix Icefalls, an ice formation in Victoria Land. This selection honors all officers and men who have served in or are still assigned to VX-6.

Two names, Neptune Range and Mount Takahe, were selected by the Board in recognition of two types aircraft flown by the squadron. The first refers to Lockheed P2V's used extensively in trimetrogon photography, and the second refers to a name assigned by its crew to an R4D *Skytrain*.

Early members of the squadron, honored in the Board's first supplement include Captain Douglas Cordiner, a former commanding officer, Captain William M. Hawkes, liaison officer between Task Force 43 and the squadron, SSgt. Robert Spann, USMC, a navigator, LCdr. John H. Torbert, a P2V pilot, Hartford E. Blount, AD2, Frederick J. Ferrara, ADC, Francis Gorecki, ATC, and Jack O. Hill, PHC.

More recent members of the squadron appearing on the list include Frank Kazukaitis, PHC, aerial "photomapper," GySgt. Winfred C. Noxon, USMC, navigator, and Lt. Bryan Simpson, P2V pilot.

In its second supplement, published this year, the Board has honored 24 officers and men of the squadron, including six of the seven fatalities the squadron has suffered since Operation *Deep Freeze* began in 1955. A feature for the seventh, Nelson R. Cole, AD2, is currently being considered and will probably be accepted.

These features honor Capt. Rayburn A. Hudman, USMC, Lt. David W. Carey, Charles S. Miller, AT2, and Marion O. Marze, AD1, who died in the crash of a P2V at McMurdo Sound on 18 Oct. 1956; Lt. Harvey E. Gardner and Ltjg. Lawrence J. Farrell, killed in a UC-1 *Otter* crash at Marble Point on 4 January 1959. Cole was killed in a helicopter crash at McMurdo on 12 July 1957, during the wintering period of *Deep Freeze II*.

Honored for flights in the southern part of the Ellsworth Mountains are LCdr. Conrad S. Shinn, pilot of the first plane ever to land at the geographic south pole, Lt. Robert M. Epperly, Ltjg. Forrest M. Allen, MSgt. Henry Strybing, USMC, Lt. James E. Waldron, L. H. Liptak, AD2, and TSgt. Thomas E. Southwick, USMC, each of whom has a mountain named after him.

Three others involved in these flights have peaks named after them: Patrick G. Milton, AD2, James H. Wilson, AT1, and Alton L. Lishness, AT1.

Honoring squadron personnel who obtained aerial photos of the Sentinel Range, the Board has authorized the usage of Newcomer Glacier, Mounts Cornwell, Warren, Malone and Reimer, and Bracken Peak.

These features are named for Cdr. Loyd E. Newcomer, P2V pilot and previous executive officer, Lt. James W. Cornwell, co-pilot, MSgt. Cecil O. Warren, navigator, Donald V. Malone, AT1, John D. Reimer, PHC, aerial photomapper, and Harold J. Bracken, AD1, plane captain.

Also singled out were Ltjg. John B. Hansen, for whom a glacier is named, and Chester W. Segers, CSC, who now has a mountain bearing his name. Segers spent the winter months of *Deep Freeze II* (1956-57) at the Amundsen-Scott South Pole station.

A LANDMARK FAMILIAR *to officers and men of VX-6 is Mount Erebus on Ross Island, about 40 miles from McMurdo Sound camp. It is an active volcano, 14,989 feet high. Most photo missions originate from the runways at McMurdo and Byrd Station, 700 miles to the east.*

RADM. DAVID M. TYREE *is head of Operation Deep Freeze, of which VX-6 is a unit.*

The Board is currently considering names for new features found in recent *Deep Freeze* operations. Many other VX-6 men may find their names on future maps of the continent.

A wide area of the continent has still not been seen by man. Trimetrogon cameras will expose more of it in this season's operation, *Deep Freeze* 62, headed by RAdm. David M. Tyree.

Airdevronsix Icefalls are located at 77°31′S, 160°25′E. Coordinates for other VX-6 associated features are:

Allen, Mount	78°43′S,	84°56′W
Blount Nunatak	83 30 S,	50 30 W
Bracken Peak	77 51 S,	85 24 W
Carey Glacier	78 53 S,	83 55 W
Cordiner Peaks	82 50 S,	54 00 W
Cornwell, Mount	77 40 S,	86 09 W
Epperly, Mount	78 26 S,	85 53 W
Farrell, Mount	78 21 S,	85 03 W
Ferrara, Mount	82 00 S,	38 00 W
Gardner, Mount	78 23 S,	86 02 W
Gorecki, Mount	83 35 S,	53 00 W
Hansen Glacier	78 20 S,	84 35 W
Hawkes, Mount	84 26 S,	54 00 W
Hill Nunatak	84 35 S,	52 00 W
Hudman Glacier	78 54 S,	84 12 W
Kazukaitis, Mount	72 05 S,	100 43 W
Liptak, Mount	78 45 S,	84 54 W
Lishness Peak	78 53 S,	84 45 W
Malone, Mount	77 52 S,	85 36 W
Marze Peak	78 52 S,	84 32 W
Miller Peak	78 49 S,	84 14 W
Milton, Mount	78 48 S,	84 49 W
Neptune Range	83 20 S,	52 15 W
Newcomer Glacier	77 47 S,	81 27 W
Noxon, Mount	72 16 S,	99 44 W
Reimer, Mount	77 48 S,	86 12 W
Segers, Mount	78 25 S,	85 22 W
Shinn, Mount	78 27 S,	85 46 W
Simpson, Mount	72 12 S,	100 23 W
Southwick, Mount	78 46 S,	84 55 W
Spann, Mount	81 45 S,	59 00 W
Strybing, Mount	78 42 S,	85 04 W
Takahe, Mount	76 16 S,	112 14 W
Waldron, Mount	78 27 S,	84 54 W
Warren, Mount	77 43 S,	85 57 W
Wilson Peak	78 52 S,	84 57 W

50 Years of Naval Aircraft

EYES OF THE FLEET—AND EARS

THE FIRST use of airplanes envisioned by the Navy was to extend the eyes of surface units. Fleet officers were quick to appreciate the airplane's value as an observation post which could provide sight far beyond the range of shipboard eyes.

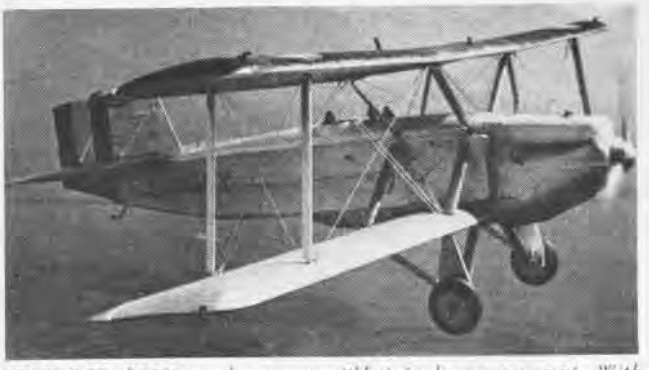
In the early Twenties, with the advance in technology, long-range scouting became a major mission of Naval Aviation. By 1930 this mission was performed chiefly by VP squadrons. Observation or scouting planes, assigned to capital ships and shore bases, and carrier scouts continued in service with missions largely unchanged well into the WW II period. The advent of radar and other advances then began to bring about a complete change in the part played by aircraft as eyes of the Fleet.

In the post-WW II period, helicopters took over as battleship and cruiser-based aircraft. The Edo XOSE-1 (above), the last airplane type developed for this role, never entered service. Radar, electronic countermeasures gear and other advanced electronics equipment largely replaced the scouting operations and brought about the "W" airplanes of today, as well as the "Q" types, extending the electronic "ears" as well as the "eyes" of the Fleet. At the same time, fighters and other combat types were converted for high speed photography to provide long-range photo coverage of enemy forces. In the future, these types will continue to be a major part of the striking power of our carrier task forces and Marine amphibious forces.

The capability of the early Navy Curtiss and Wright pushers was very limited. In early operations with the Fleet, attempts were made to operate these and other early aircraft as spotters for the surface units, though their

TAKING OFF *at Guantanamo is a WW I British Sopwith 1½ Strutter, converted to a Navy shipboard type with hydrovane and flotation gear.*

LOENING M-80 *was developed from Army Air Service 2-place fighter, was also built by NAF. M-80's and -81's saw only limited VO service.*



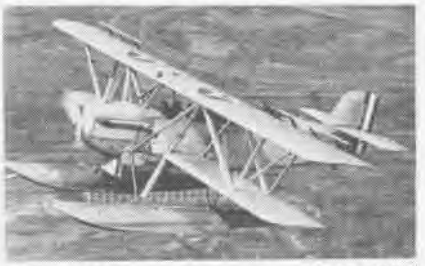
CURTISS CS *of 1923 was large, convertible type, long range scout. With 520-hp Wright T-2, as landplane, its top speed was 102 miles per hour.*

MARTIN MO-1 *monoplane of 1923 had all-metal internal structure, cantilever wing. Speed as seaplane was 102 mph with 350 hp. D-12.*

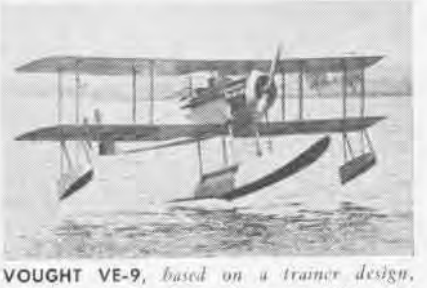
1922 AEROMARINE, *an experimental seaplane scout, was powered by 300-hp Wright Hisso.*

SPOTTER VERSION *of Elias EM-2 Marine expeditionary type was three-place EO-1.*

HUFF DALAND *HO-1's modified from HN trainers, were early light observation types.*



THREE-PLACE *"spotters" were NAF NO-1 (above) and Martin M20-1, D-12 powered.*



VOUGHT VE-9, *based on a trainer design, served as early ship and carrier VO type.*

FIRST VO *design with lighter engine was Vought UO-1 with 200-hp air-cooled engine.*

effectiveness was minimum owing to limited performance.

Shore-based off-shore scouting was added to Naval Aviation's missions during WW I using such types as the Curtiss model R "military tractor."

After WW I, both of these missions were further developed, along with others. Turret platforms were built on battleships, capable of launching aircraft for spotting missions, leading to development of aircraft types suitable for these operations. European WW I combat types, such as Sopwith *1½ Strutters* (so named for their wing strut arrangement) and several other single and two-place types were equipped with hydrovanes and flotation gear (May 1961 NANEWS, p. 38) and operated with the Fleet.

Higher powered aircraft were meanwhile developed to replace these types. Loening M-80 monoplanes, based on a two-place fighter design, went into production. Other designs by Loening, Dayton-Wright, Naval Aircraft Factory and Aeromarine embodied different concepts, but none of these models reached service use.

For Marine squadrons, DH-4's, gradually improved to the post-war -4B configuration, were procured from Army Air Service stocks. These landplanes were used for observation and ground attack with the Expeditionary Forces.

In 1921, with the formation of the Bureau of Aeronautics, airplane design programs began to develop a more organized pattern. Based on BUAER designs, the Martin MO-1, M20-1 and Naval Aircraft Factory NO-1 types were ordered. The latter two were very similar biplanes. All were three-place, convertible (wheel or float gear) spotters powered by the new Curtiss D-12 engine and capable of being operated from ships or shore bases. The Martin MO-1 was an advanced, cantilever monoplane with all-metal structure. Production models of the MO and NO designs were ordered. The MO's did reach squadron service; however, many problems plagued the MO, and it was never fully successful.

At the same time, the Curtiss CS-1, based on another BUAER design, was ordered. More conventional, this large, slow, long-range, convertible scout type, powered by the large Wright T-2 engine, was built for shore or airplane tender-based scouting operations.

To obtain a suitable observation plane, one Elias EM airplane, Marine Corps expeditionary type, was converted into the three-place EO-1 and was found satisfactory. But other advances changed the VO picture.

Planning for operations with the

LONG RANGE SCOUTS *were the SDW's of 1924, modified from Douglas DT's by Wright, incorporating the Wright 625-horsepower T-3 engine.*

EARLY VERSION *of successful Loening OL series was the OL-2, used on early Byrd Arctic trip. A 400-hp Liberty gave top speed of 121 mph.*

MARINE OBSERVATION *squadrons and expeditionary forces used various models of the DeHavilland DH-4 design for observation and ground attack. The O2B-1's shown were rebuilt by Boeing. Wooden fuselage was replaced by one of metal construction, other improvements made.*

MARTIN SC'S *were triple-purpose, convertible types. They served as scouts, bombers and torpedo planes. Range was 960 miles at 66 mph.*

TWO DOUGLAS *OD-1's based on Army's O-2 design, were purchased as Marine land-based observation types in 1926, later used for utility.*

first U.S. carrier, the USS *Langley*, as well as BuAer sponsorship of new lighter aircraft engines set the scene for the next VO type. Around the new Wright 200-hp air-cooled radial engine, later to become the famed *Whirlwind*, Vought designed the UO-1 convertible two-place observation type, capable either of carrier operation or of being catapulted from the turntable catapults coming into use on capital ships.

For interim service, the Vought VE-7 trainer and the similar VE-9 were adapted as carrier or ship observation planes. One other type, the Huff-Daland HO-1, was also developed from a trainer design. The UO's with Wright *Whirlwinds* were produced in numbers and served for several years.

With an answer for VO duties, long-range scout types were further developed. Douglas DT torpedo planes were rebuilt into SDW's, and the CS design was developed by Martin into the triple-purpose SC series, filling bomber, torpedo plane or scouting roles. The SC's were the last shore or tender-based long-range scout types; patrol squadrons took over this mission in the late Twenties.

In 1925, amphibians entered the scene. Earlier types had not been successful, but Loening's amphibian proved to be an outstanding design and went into service with both the Army and Navy. A competing Boeing design for the Navy was dropped as the OL's went into service. OL's were used for various northern expeditions as well as in fleet operations.

For the Marines two OD's and a quantity of O2B's were added to the Navy inventory. Both were land-based types, the OD based on the Army O-2 design while the O2B-1 was Boeing's modernized Army DH-4M, with metal fuselage construction.

The next observation type, designed around the new P&W *Wasp* engine, was to prove a significant advance in VO types. The Vought O2U-1 *Corsair* of 1927 continued in production in later models for nearly a decade. Con-

vertible, it was designed with sufficient strength for dive bombing and was operated in carrier squadrons as well as from battleships and cruisers.

The *Wasp* was also fitted to the OL, giving further utility to this amphibian design.

With the *Wasp Junior* of 1928, an attempt was made to provide smaller observation types, since space was always at a premium on any type of ship. This resulted in the Berliner Joyce XOJ-1 and the Keystone XOK-1. The latter was one of the early designs for the Navy which featured a streamlined cowling and all-metal fuselage, but it did not meet the Navy dive requirements and was dropped. OJ-2's eventually entered service in small numbers.

Additional land-based types using air-cooled engines were purchased for the Marine Corps. These were Curtiss *Falcons*, based upon an Army observation/attack design. Originally designated as fighters, they were soon redesignated as OC's. Curtiss *Helldivers* were also redesignated as VO types because they were not effective as fighters. They became O2C's.

Further attempts to exploit advances in engines and technology resulted in several programs for carrier and/or ship service. The *Corsair* design was improved and became the O3U series. For use with both *Corsair* series, several different amphibious float designs were tested. These included two by Grumman which were that company's first products.

Continued interest in the increased use of metal structure led to projects for the XO2L-1 and XO4U-1. These developments of the OL-8 and O3U-1 respectively used all-metal construction, except for wing coverings. Neither type reached service use. Pitcairn Autogiros, designated XOP-1's were also purchased for evaluation as carrier or Marine observation types. Later rebuilding as the wingless XOP-2 autogiro still did not show enough advantage over fixed-wing types to warrant service introduction of autogiros.

In 1931, another competition was held for a combined carrier/ship service types, this time designated as a scout. The amphibious and wing folding requirements, coupled with other features, resulted in three weird designs. Two, the XS2L-1 and the XSG-1, used the R-975. Sikorsky's XSS-1 design was built as the XSS-2 when switched to an R-1340. After testing, all were dropped.

At the same time, the Grumman XSF-1 was built as a carrier scout version of the XFF-1 two-place fighter. Production of the SF-1 followed; these served with carrier versions of the O3U *Corsairs*, redesignated as SU's.

One other type was also ordered, the

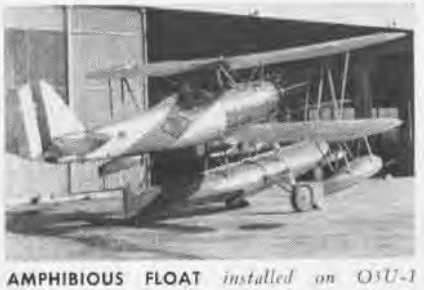
VOUGHT O2U *Corsair was first airplane designed to use Pratt & Whitney Wasp engine; a long series of convertible Corsairs followed.*

ORIGINALLY DESIGNATED *as fighters were Curtiss OC observation types for Marines. OC-2 was based on Army attack plane, had Wasp engine.*

SUCCESS *of Loening OL series led to XO2L-2, which was all metal except for wing covering.*

METAL CONSTRUCTION *was also feature of Keystone XOK-1, with streamline cowling.*

VOUGHT XO4U-1 *embodied metal construction, had upper wing panels mounted to body.*



AMPHIBIOUS FLOAT *installed on O3U-1 Corsair; O3U's also flew with floats or wheels.*

CURTISS O2C-1 *Helldivers were originally F8C-5's, this one in colorful Marine markings.*

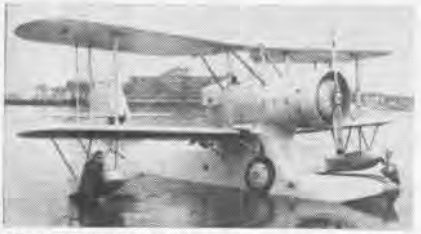
LARGELY USED *by reserves were B/I OJ-2's. Plane shown has Anacostia reserve markings.*

XSE-1, based on Bellanca's high-wing commercial configuration. Redesigned as the XSE-2, it still did not meet Navy requirements.

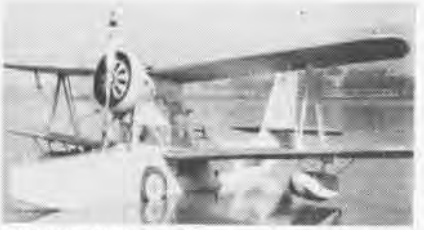
With *Corsairs* continuing as the principal service types, a new competition was initiated in 1933 for an amphibious observation type with folding wings. Emphasis was placed on low stalling speed, and wing flaps were incorporated on all designs. Contracts for experimental models were given to Douglas, Vought and Curtiss for the with wheel or single-float landing gear, and were intended for operation from battleships and cruisers. The carrier scouting mission was taken over by the VSB-class scout-bombers.

To provide a larger shipboard observation type, the Bellanca XSOE-1 and Kreider-Reisner (Fairchild) XSOK-1 seaplanes were ordered in 1934. The XSOE-1 reached flight test, but both were cancelled, and the SOC's became the standard shipboard type. These were later supplemented by NAF-built The third, the XOSU-1, was rebuilt from a production O3U-6 *Corsair* with increased fuel capacity and full span flaps. All were convertible types.

For VSO replacements, an improved SOC, the XSO2C-1 was tested, followed by a competition for new designs using the *Ranger* V-12 air-cooled engine. The XSO2U-1 and XSO3C-1, which were built for evaluation, were both fairly well streamlined midwing monoplane designs. After testing and modifications, the SO3C was chosen for



EXPERIMENTAL SHIPBOARD *or carrier scout amphibian was 1932 Great Lakes XSG-1.*



LOENING XS2L-1 *(shown) and Sikorsky XSS-2 competed with XSG-1; none went into service.*

BELLANCA'S *commercial monoplane designs were successful; 1932 XSE-1 scout was not.*

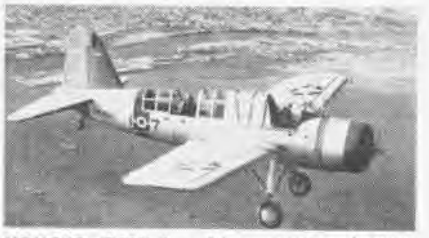
ATTACK DESIGN *produced for Army was basis for Curtiss XS2C-1 carrier scout prototype.*

GRUMMAN SF-1 *was carrier scout version of FF-1 fighter, the first Grumman airplane.*

VOUGHT XO5U-1 *and Douglas XO2D-1 competed for service type with Curtiss XO3C-1.*

PRODUCTION VERSION *of XO3C-1 were SOC's which served through World War II.*

STEARMAN XOSS-1 *and NAF XOSN-1 biplanes were 1938 convertible prototypes.*



VOUGHT OS2U-1 *and later OS2U and OS2N series were famed Kingfishers of World War II.*

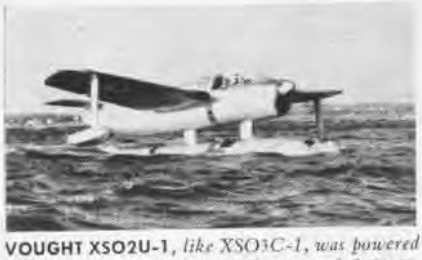
XO2D-1, XO5U-1 and XO3C-1. In addition to the amphibious gear, plain floats were subsequently designed for all these models. Operational experience with the *Corsairs* using amphibious floats had shown that their operational flexibility was more than offset by increased weight and complexity, and the amphibious VO concept was finally abandoned.

Following evaluation, the Curtiss XO-3C-1 was selected for production. In line with the multi-purpose philosophy of the period, these were designated as SOC-1's. They were redesigned as convertible types, operating SON-1's, built to the same drawings as the SOC-3's.

The next competition called for a VOS design with observation the primary mission rather than the longer range scouting. Differences in capabilities and equipment between the VOS and VSO types were not large, however.

Vought's XOS2U-1 monoplane design, using a *Wasp Jr.*, was selected for production in preference to its three *Wasp*-powered biplane competitors which were tested. Two of the latter were new designs, the Stearman (Boeing) XOSS-1 and the NAF XOSN-1. service and placed in production.

At the time of Pearl Harbor, SOC's and OS2U's, along with their NAF-built twins, were in service on board ship and also at shore bases. The SO3C's were modified to provide increased equipment and were plagued by power plant and performance problems with their increased weight. Planned production by Ryan as the SOR-1 was cancelled. To accommodate the increased equipment, Curtiss developed the SC design, using a Wright *Cyclone* engine of more than twice the power of other VOS/VSO types. A turbo-supercharger installation provided increased



VOUGHT XSO2U-1, *like XSO3C-1, was powered by Ranger 500-hp, inverted, air-cooled V-12.*

CURTISS SO3C *Seagulls, never fully succeeded operationally, were withdrawn from service.*

CURTISS SC-1 *Seahawk was large, fast, catapult type, entered service in late WW II.*

DURING LATE *WW II, and through Korean conflict, Marine VMO squadrons used OYS's.*

PROP AND JET *fighters have been converted as photoplanes, including the Vought F4U-5P.*

MARINE VMO *squadrons currently fly Cessna OE-2's, the improved versions of OE-1/L-19.*

performance for the single-place SC-1.

The OS2U/OS2N *Kingfishers* and SOC/SON's served as the principal scout/observation types through the war, the SO3C *Seagulls* finally being withdrawn from service. The SC-1 *Seahawks* entered service late in the war, while Curtiss produced an improved successor, the XSC-2, and Edo designed a small single-place shipboard airplane the XOSE-1.

After the war, the SC-1 continued in service. A small number of SOC's were also retained and saw service in the 1947 Antarctic expedition. Development of the XSC-2 and the XOSE-1, along with the two-place XOSE-2, continued.

By 1948, it was evident that the helicopter could perform the remaining roles which required ship-based airplanes, and the catapult seaplanes gradually passed from the scene. Other developments contributed to this end.

Beginning early in WW II, new emphasis was placed on photographic missions. Fighter type aircraft were modified to carry internally mounted cameras in the aft fuselage to provide high speed photo-reconnaissance coverage of enemy activity. Land-based VP types were also converted for long-range photo operations. *Hellcats* and *Liberators* were the principal types used. Following the war, *Corsairs, Bearcats, Panthers, Banshees, Cougars* and *Savages* served as swift, long-range photographic eyes with the Fleet, leading to the current "P" versions of the *Skywarrior* and *Crusader*.

Developments in radar, both ship-based and airborne, replaced the VO/VS types for spotting and scouting purposes. Radar was fitted to many type aircraft, but the "W" versions, beginning with the TBM-3W, served only as radar platforms for high-powered "electronic eyes." Following the TBM-3W's came the "W" versions of the AD series, leading to the carrier-based WF-2 of today and the turboprop W2F-1 of tomorrow. For long-range, early-warning/CIC operations, the VP "W" versions entered service, including the Boeing PB-1W and Lockheed P2V-3W. These were followed by the present day WV *Constellation* series.

Another innovation of WW II was electronic countermeasures equipment, designed to deny the enemy the advantage of his radar. "Q" versions of the AD and other carrier and patrol types were equipped to serve only this role. The P4M-1Q and the TF-1Q have been used; today's A3D-2Q's and F3D-2Q's continue this important mission—the electronic "ears" of naval operations.

Still providing eyes for Marine assault operations are the only remaining VO types in the Navy. Small, light observation aircraft, Stinson (Convair) OY's, were procured from Army Air Force production and served from the late WW II period until replaced by Cessna OE-1's during the Korean operations. Improved, higher-powered OE2's joined them in the -50's.

While not as glamorous as fighters and attack planes, the eyes and ears of Naval Aviation continue to play a major part in naval operations.

AIRBORNE EARLY *warning versions of standard attack aircraft led to Grumman WF-2, based on S2F/TF. Turboprop W2F-1 will follow.*

ELECTRONIC EARS *for Naval Aviation are provided primarily by "Q" version of various designs. The A3D-1Q shown folding its wings.*

USS FDR'S MERCY MISSION AN ENCORE

A 67-YEAR-OLD man who had escaped from death in a Nazi gas chamber recently reflected with gratitude how the U.S. military had dramatically saved his life for the second time in the last 15 years.

Max Gorman, a Polish Jew and now an American citizen residing in Baltimore, was stricken suddenly with a perforated ulcer while in the American liner SS *Atlantic* at sea in the Mediterranean. He and Mrs. Gorman were on a pilgrimage to Israel where they were to be reunited with a daughter and Mrs. Gorman's brother.

His condition required immediate surgery which the liner was not prepared to provide. USS *Roosevelt*, learning of his plight, interrupted a heavy training schedule to locate the liner and rush Navy surgeons to his rescue.

Radar operators worked in close coordination with aircraft already in the air and found the liner 57 miles from the carrier. The *Roosevelt* closed the gap at flank speed.

As she neared rendezvous, the carrier launched a helicopter (nicknamed "Angel" by pilots and crewmen), carrying the ship's senior medical officer, LCdr. Ernest Latham. He performed a preliminary examination, then patient and doctor were transported to the *Roosevelt*. Lt. H. O. Platt performed a difficult three-and-a-half-hour operation which started Mr. Gorman on the road to recovery.

Well over 100 men in the carrier volunteered to donate blood. Corpsmen stood around-the-clock watches until he was out of danger.

A deeply religious man, Mr. Gorman wore a skull cap which never left his head, even during the operation, and later in the oxygen tent. He kept at his bedside a worn brown-checked bag containing his shawl, talis, and prayerbook, and observed religious ritual three times daily.

Convalescing, he picked at selected kosher food doctors aboard were able to provide and volunteered details about the "other time Americans saved my life."

When the tide of war abruptly changed in Europe and the Nazi eastern front extended into Russia, Mr. Gorman, his family, and fellow conscript workers were loaded into a train headed for a Nazi gas chamber. They were to be executed on 5 May 1945.

Only five miles from the camp, American bombers derailed the train and the ensuing confusion and subsequent arrival of American and Allied troops enabled the victims to escape.

After the war, Mr. Gorman traveled with his wife, two daughters and two sons to America where they soon established a small grocery enterprise in Baltimore, which was successful.

When doctors in the *Roosevelt* pronounced him well enough to be moved, Mr. Gorman was flown to Cannes and further hospitalization. He commented on his brush with death. "One day I'm dead; next day I'm alive."

Arctic Hike Ends in Rescue

HU-4 Aids Ice Victims in Arctic

A pleasurable ten-mile hike in the Arctic areas of Greenland ended disastrously for 13 of a 35-man touring group of U. S. military men.

Standing 500 feet from much photographed Russell Glacier near Sugarloaf Mountain, the group heard a thunderous explosion and watched in horror as a 200-foot section of the glacier broke off and crashed into the fjord. Fragments of the shattering ice zinged through the air with the deadliness of shrapnel as the group raced from the base of the glacier. Four were killed and nine hospitalized.

When word reached the outside world, Lt. Merle L. Hoffman and Ltjg. Ronald H. Jesberg launched a helicopter from the icebreaker USS *Atka*, then on another Arctic run. Medical assistance was aboard. They immediately set about evacuating the victims to a hospital at the nearby USAF Base at Sondrestrom. Later, a civilian helicopter was called in to aid in the evacuation.

Their mercy mission completed, Lts. Hoffman and Jesberg returned to the *Atka*. They are assigned to HU-4 which is based at NAS LAKEHURST.

DEEP FREEZE PLANES *of Air Development Squadron Six (VX-6) plan to break Antarctic isolation earlier this season than ever before, September 20. Weather reports over the 1400-mile stretch of water and ice are limited to McMurdo Sound and picket ship USS Vance (DER-397), stationed at mid-point. These may delay the flight. Above, in a previous operation, an R5D Skymaster, an R7V Super Constellation, both of VX-6, and an Air Force C-130A Hercules lead a fly-in. RNZAF aircraft, from left, a Harvard trainer and a DeHavilland Devon, escort the U.S. planes part-way, later dipped their wings in a God-speed salute. VX-6 has since acquired four C-130BL Lockheed Hercules.*

USS MAKASSAR STRAIT STILL SERVES AS ANCHORED, UNMANNED PMR MISSILE TARGET

OLD CVE ASSUMES ITS NEW ROLE

As aircraft carriers go, USS *Makassar Strait* (CVE-91) carried out a U.S. carrier's traditional assortment of global tasks, but in her waning days, the 512-foot escort flattop finds herself smack in the middle of the missile age.

Makassar Strait was commissioned in 1944 at the Kaiser Shipyard, Vancouver, Wash. History awards her four enemy planes, a sampan and undetermined damage to Japanese-held shore emplacements toward victory in the Pacific. By 1946, she was mothballed and swinging quietly on her hook in the Pacific Reserve Fleet at San Diego, Calif.

Now her mission is less sedentary. She's a target ship in the sea test area of the Pacific Missile Range, anchored 53 miles off Pt. Mugu. Her job is to take direct hits from several types of surface-launched, unarmed missiles and to record data on the performance of these deadly fleet weapons.

She has no crew. Her electronic recording devices are operated by remote control. A huge block of concrete, fixed to her dolefully clanking anchor chain, keeps her on lonely station.

The carrier is stationed in a restricted area and equipped with running lights and fog warning devices. She is "off limits" to visitors and protected by trespassing laws. Helicopter-borne crews from PMR headquarters regularly service the ship and her gear.

Despite her solitary vigil and her moments of dire peril when missiles home on her unprotected flight deck, *Makassar Strait* is no ghost ship. She plays an essential role in development of modern missiles.

Record Likely to Last

Pilot Flies 5 Plane Types in Day

A record that may stand forever has been claimed by Lt. William N. Straughan of the Naval CIC School, NAS Glynco. In one day he flew, as a qualified-in-type aviator, all five of the major classes of naval aircraft.

Lt. Straughan flew in succession a ZPG-2 blimp, an SNB twin-engined light transport, a T2V-1 *SeaStar* jet, a Grumman UF-1 *Albatross* seaplane, and an HRS-1 helicopter. In the 50 years of Naval Aviation only a very few pilots have been qualified in all classes of naval aircraft. Lt. Straughan is believed to be the first to fly them all in one day.

While setting this memorable "first," Lt. Straughan took part in what may be a nostalgic "last." While aboard the giant silver airship, he carried out night practice ASW operations off the coast of Florida.

This was one of the last sub hunts, practice or otherwise, in the turbulent history of the "poopy bags," because the great airships are to be decommissioned later this year. Thus all prospective challengers to Lt. Straughan's feat will very shortly be effectively rendered *hors de combat*.

To complete his day of versatile flying Lt. Straughan, after his working day was finished, flew a Civil Air Patrol light plane over Brunswick, Ga. With this hop he joined the growing number of military personnel who fly and work with the Civil Air Patrol in their spare time.

Bill Straughan joined the Navy in July 1940. He saw combat in WW II aboard the escort carrier *Tulagi* as an aviation machinist mate. He entered flight training in March 1945 and received his wings in 1947. He then flew as an enlisted pilot until 1955 when he was commissioned an ensign.

Lt. Straughan has flown 36 types of aircraft during his 5000 hours aloft as a Naval Aviator, including three types of blimps, five different types of helicopters, four seaplane models, and two jet types. He has also flown landplanes from *Liberator* bombers to Piper *Cubs*, but never has he or anyone else ever flown as many types in one day.

Idea Submitted by Airman

'O' Ring Installation Made Easier

The installation of "O" rings on pneumatic equipment has long been a minor irritation of maintenance men. Thanks to a young airman at Cecil Field, the job now can be done easier and more effectively.

J. A. Dorman, AN, of VA-163, pondered the problem and solved it. By using a paper cone to introduce the ring to its proper position instead of forcing it over a rough, tearing surface, it slipped on easier and lengthened the life expectancy of the ring. The rings are used as air tight seals on certain pneumatic equipment.

The idea prompted a letter of commendation from Capt. T. W. Hopkins, commanding NAS Cecil Field, and the suggestion was forwarded to the Navy's Bureau of Naval Weapons.

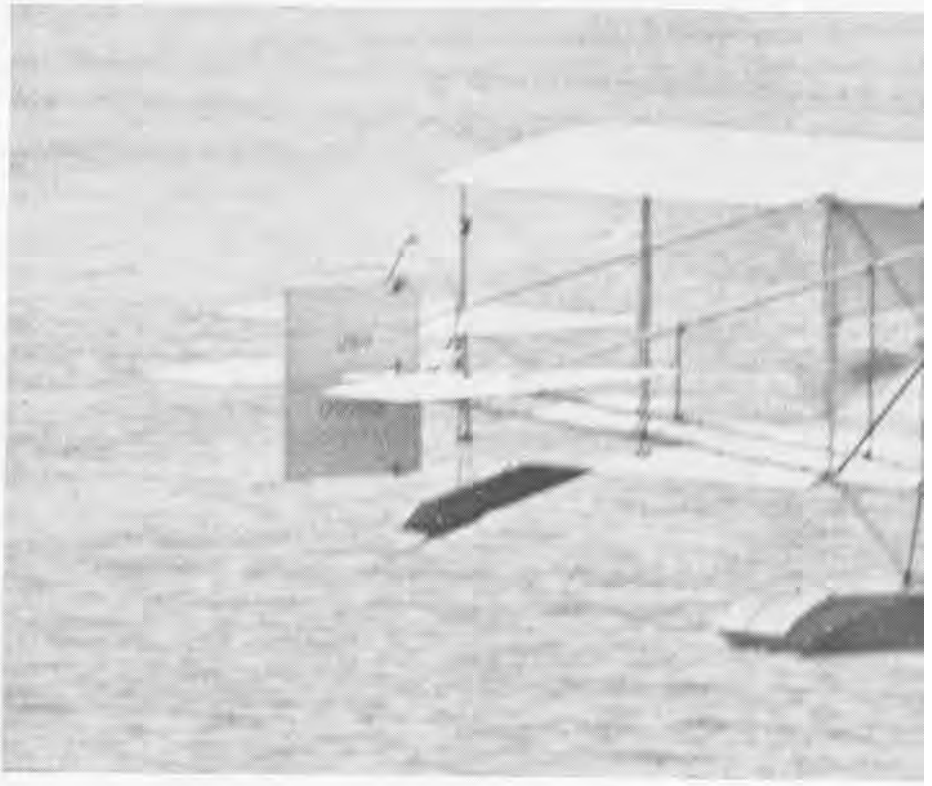
In Old San Diego

HALF CENTURY LAT

LIKE A WHITE-WINGED ghost from the past a silhouette strange to 1961 appeared over San Diego Bay soon after dawn on 11 July. A small seaplane rose to a height of 100 feet circled the bay, then landed on the still surface of the gray water.

The aircraft was no ghost, but a flying replica of the Navy's first plane, the Curtiss A-1. The replica was scheduled to fly again in August at the 1961 annual meeting of the Institute of Aerospace Sciences during its Golden Wings Celebration on North Island.

The A-1 replica was the fulfillment of a dream which began four years ago. It was made a fact by the Navy and the Institute of the Aerospace Sciences (IAS). As an example of what can be accomplished by a group of practical idealists who put time and talent to creative purpose, it is classic.



BUWEPS' VERVILLE, A-1 TECHNICAL ADVISOR

About 130 volunteers from Navy and Industry, plus a few full-time employees, did the engineering and mechanical work on the project.

Some 50 people watched from a bluff overlooking San Diego Bay as the first flights of the wood, fabric and wire plane were made. The A-1 was tested by Cdr. Don Germeraad (USNR-R), Chief Engineering Test Pilot for the Convair Division of General Dynamics and a member of IAS. Germeraad had been brought back to active duty for the program. Test flights were controlled by Capt. Paul W. Gill, Overhaul and Repair Officer, NAS NORTH ISLAND, and official representative of the Bureau of Naval Weapons.

The A-1 was launched at 0700 and left the beach under its own power about 45 minutes later. The pilot first made a high speed taxi run into the wind to check hydrodynamic stability and spray characteristics.

On the second run, the plane lifted off and was airborne for 500 feet or so at an altitude of about six feet. On the third trial, Cdr. Germeraad continued to evaluate landing characteristics at different speeds.

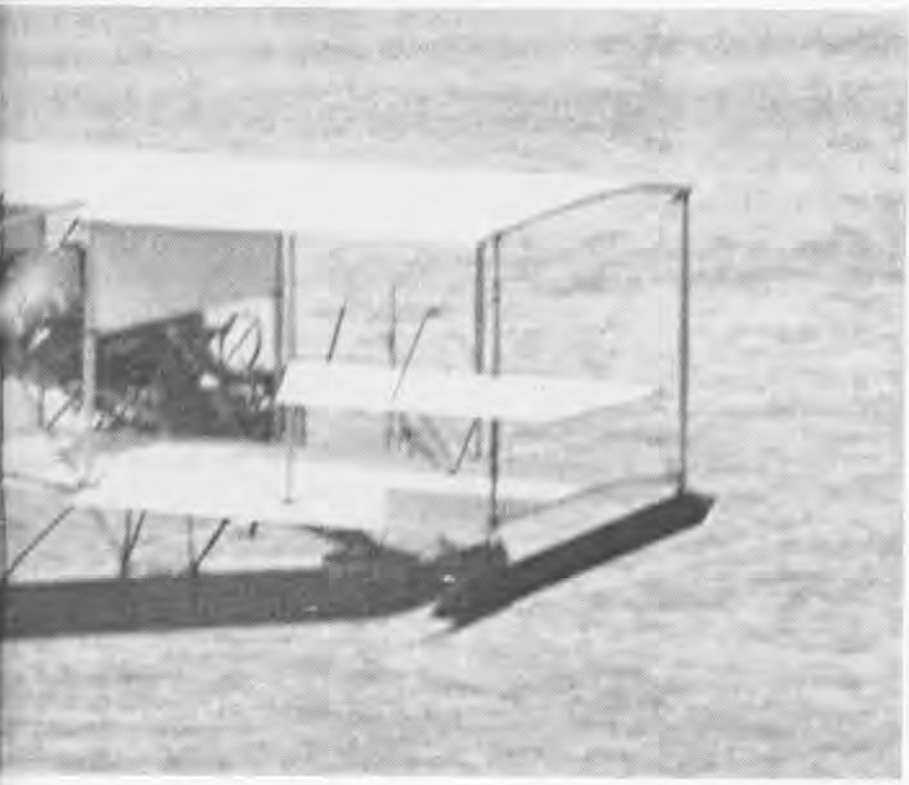
During the fourth test, he flew at 40 or 50 feet, making S turns to try the lateral and directional control characteristics. The landing was a partial stall type in order to check the operation during an engine failure. "She checked out O.K.," Don Germeraad said.

In the last test, the pilot taxied across the bay, and the wide-winged plane seemed to leap into the sky as it gained momentum. He flew an orbit of the South Bay Seadrome, following a race track pattern to the left at an altitude of 100 feet. Speed was about 50 knots. The pilot set the aircraft down, ducklike, on its narrow pontoon, leaving a long white wake. The eight-minute test was over.

Beaming with satisfaction, Don Germeraad described the flight: "Now

By Elretta Sudsbury, C

ER, A-1 FLIES AGAIN



I know how the other half lived—the half century of pilots, that is. My hat is off to the old-timers. It is really amazing what they accomplished with what they had to work with."

By coincidence, the orbital flight followed much the same pattern as the one made by Glenn Curtiss on 26 January 1911—the first successful seaplane flight in the world. On that occasion, Curtiss was flying the *Triad*, a forerunner of the first A-1. Taking off from the Spanish Bight, he circled the bay and landed in the Spanish Bight near North Island. Among the spectators that historic day was Lt. T. G. Ellyson, destined to be Naval Aviator No. 1.

R, NAS North Island

Later in the day of the test flight of the A-1 replica, Capt. Gill said, "The flight today was the official acceptance flight by the Navy. The aircraft proved out successfully and was accepted in the Navy inventory."

Among the observers the day of the A-1 test, none was prouder than Capt. Gill. The plane was assembled under his direction by an O&R Department civilian team headed by Cdr. J. F. Irvine, Jr., O&R Project Officer. Ray Fife, a veteran aircraft mechanic, was the Senior Civilian Supervisor. Not only did the North Islanders assemble the A-1 replica, but they manufactured many small parts and modified certain components fabricated elsewhere. The expert craftsmanship of the O&R artisans was well proved by the trouble-free test flights.

To those who looked bayward on the July morning in 1961, the original A-1 was known only from history. Its short, dramatic career ended 16 October 1912 when it crashed and was damaged beyond repair. The A-1, ordered by the Navy on 8 May 1911, was built at the Curtiss plant at Hammondsport, N.Y. Lt. T. G. Ellyson, who was undergoing flight training at the time was on hand to help with the design and construction.

The original A-1 was flown for the first time on 1 July 1911 and tested by Lt. Ellyson on 2 July. The July 1st log entry says, "G. H. Curtiss tried out the A-1 machine—and found balance on the water and in the air perfect."

Of the tests of the A-1 replica, Cdr. Germeraad said, "Glenn Curtiss would have been willing to trade his airplane hands down for this airplane."

The seed of the A-1 replica was planted in 1957 right after the first IAS/Navy National Naval Aviation meeting when J. G. Wenzel of the General Dynamics Corporation and E. W. Robischon of the IAS held an informal brain-storming session.

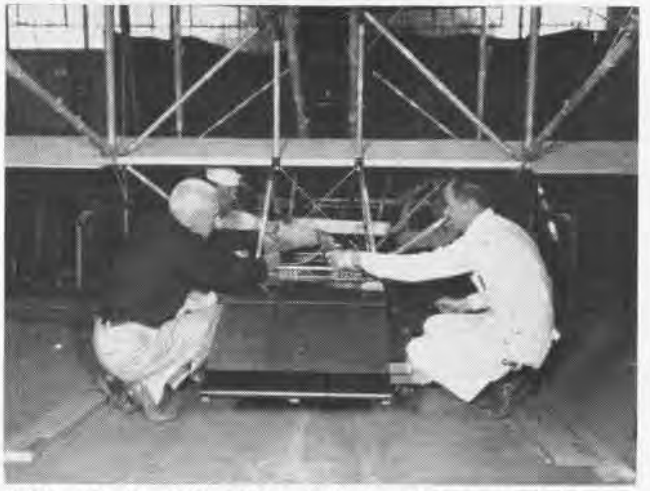
"Since 1961 would be the 50th Anniversary of Naval Aviation, re-

CONVAIR'S GERMERAAD PILOTED A-1

creating the A-1 was a natural," recalled Wenzel. "We set out then and there to try to give the Navy an anniversary celebration that would not only contribute to the future with its technical program, but would relive the past and leave a national treasure for future generations.

"Why not re-enact the Curtiss Flights from San Diego Bay, utilizing a full-scale flying replica of the first aircraft in the Navy's inventory?"

IAS'S COCKRELL, WENZEL AND ANTONIAK CHECK THE WING PANEL



O&R'S FIFE (L) AND OPELLA INSPECT FLOAT CABLING ON A-1

Inspired by this idea, IAS submitted a plan to RAdm. R. E. Dixon, Chief of the Bureau of Aeronautics (now BuWeps). IAS proposed to build and demonstrate a replica of the Curtiss seaplane, fabricated from industry-donated materials. IAS agreed also to do the engineering if the Navy would provide technical data.

Alfred Verville, veteran aircraft designer and Special Advisor to the Engineering Division of BuWeps, recalls the day late in 1958 when Adm. Dixon called him in to discuss the proposed A-1 project and said, "It seems fantastic. Is there any data?"

Mr. Verville said he would find out. He knew Curtiss had made no permanent drawings of his airplanes. While one was being constructed, the airplane builder made rough drawings with a carpenter's pencil on the factory walls. Once the job was completed, the walls were whitewashed to make way for new drawings. Since no two Curtiss planes of the 1911 period were identical, Verville knew it would be very difficult to determine the exact configuration of the A-1. Nevertheless, he wanted to see the plane from 50 years ago take shape and fly again. Somehow, it could be done.

Reporting later to Adm. Dixon that the IAS proposal was possible, Mr. Verville was made Technical Advisor for the project, a logical assignment since the silver-haired, blue-eyed dynamo had worked for Glenn Curtiss not many years after the A-1 was built and had spent his working life in aeronautical engineering.

In February 1959, the Chief of BuWeps notified Mr. Wenzel that "the Bureau . . . appreciates and concurs with the commendable proposal of the San Diego Section of the Institute of Aerospace Sciences to effect the technical supervision, design and construction of a full-scale flying replica of the Navy's first aircraft (1911 Curtiss model A-1) with industry-donated materials and parts. Assembly and other assistance by NAS North Island Overhaul and Repair personnel can be included in your planning."

So it began. From headquarters in Washington, Fred Verville looked for clues to the exact identity of the Curtiss A-1. His objective from the start was *authenticity*—nothing less would do.

He located two Curtiss airplanes of 1911 vintage and went to see them: the Al Engel Curtiss single-pontoon seaplane located in the Thompson Auto Museum in Cleveland, and the wrecked Kaminski Curtiss landplane,

VOLUNTEER WORKERS RIG ANTIQUE PANEL

ISACKSON, HORNE FINISH FLOAT SECTION

MODERN WEIGHT/BALANCE TESTS WERE RUN

stored in a barn at Waukesha, Wisc. Mr. Verville also checked the Curtiss pusher landplane in the Smithsonian Institution.

From Al Engel, the man who barnstormed in the plane now displayed at the Cleveland Museum, Mr. Verville gleaned vital facts. He made rough drawings and photos of the three old aircraft for study. He visited Mrs. T. G. Ellyson, widow of the first Navy pilot, and borrowed from her Lt. Ellyson's personal scrap book which contained many photographs of the original A-1.

Two pioneer aviators, Adm. H. C. Richardson (now deceased) and Adm. Pat Bellinger, who had flown the A-1, supplied priceless first-hand information. Verville visited Maj. George Hallett, USA (Ret.), of La Mesa, Calif., who worked as a mechanic for Curtiss when the A-1 was being built. Maj. Hallett's memory of details yielded valuable data.

In the search, Verville at times felt more like a detective than an engineer. His enthusiasm was boundless, and he says, "I had a ball!" In the Navy Archives, the personal papers of Capt. W. E. Chambers, the first naval officer assigned full time to aviation, contained extensive correspondence with Lt. Ellyson during the A-1 era. The file provided detailed descriptions of the plane and many rough sketches. These were reviewed jointly with Adrian O. Van Wyen and Lee M. Pearson, Naval Aviation and BuWeps historians respectively.

After putting the historical material together and studying photos, Fred Verville had a three-view general arrangement drawing made of the A-1. He brought the drawing, photos and dimensioned sketches to the IAS, so that detailed engineering could begin.

Meanwhile, an A-1 Project organization was established by Mr. Wenzel within the San Diego section of the IAS. W. T. Immenschuh of Ryan was appointed Project Director. W. S. Cockrell of Ryan became Manufacturing Director; and Al Benson, the Project Engineer.

Mr. Benson immediately began preliminary design work. From photographs and rough sketches, the Verville three-view drawing was broken into major components. As additional sketches and photos were received from Washington, detailed drawings were made. When Mr. Benson left San Diego for employment elsewhere, V. A. Carlson of Convair took his place.

Night after night the volunteer engineers from industry and the Navy worked at their drafting boards reconstructing the A-1 drawings. The engineering was handled by Navy and civilian IAS members. Dedication and enthusiasm characterized the young men donating their time to the project. Most of them spent their daytime hours working with space age aircraft. After hours, they turned the clock back 50 years to re-create a "vehicle of the air" which they had never seen.

The original plan was modified to provide for construction of two aircraft: one a flying replica to remain in San Diego; the other a replica to be placed in the Smithsonian Institution. The search began for a Curtiss Model OX-5 for the flight model, and a Model O, as in the original A-1, for the museum model.

Stress analysis of the original configuration soon made it clear that the flying replica should be "beefed up" somewhat for greater safety. To do this without changing the over-all appearance or unduly increasing the weight was no easy task, but it was accomplished. Stress and weights were handled by Jack Jensen and Cliff Beddoes of Convair. Thus metal was substituted for bamboo for the tail booms, and the wings were strengthened by using laminated ash instead of spruce for spars. It was so designed that the 90-hp model OX-5 engine would compensate for the extra weight.

In January 1960, Mr. Norman Fresh of the Navy's David Taylor Model Basin supervised the construction and testing of an austere wind tunnel model of the A-1. Balance configuration was checked to evaluate stability and predict performance. Mr. Wenzel conferred with Mr. Fresh, obtained his recommendations, and took the data back to Carlson and the team of IAS/Navy engineers.

Aircraft performance, static and dynamic stability and control, air loads and flight handling characteristics were estimated on the basis of the wind tunnel data. Hydrodynamic data obtained by DTMB many, many years ago on a float, similar to that of Curtiss, were used to establish take-off performance and hydrodynamic stability. Members of the IAS remarked, "If Curtiss had known as much about his machine as we do, he probably never would have flown it!"

A-1 FRAME, FREE OF JIGS, IS SPOTTED FOR ENGINE INSTALLATION AT MARINE CORPS DEPOT

During late 1960, IAS arranged with private industry to secure materials and other assistance. Many evening meetings of the IAS/Navy team were held, so that details, such as phasing schedules, could be worked out. In November 1960, Fred Verville was assigned to San Diego to help finish the drawings and stay close to the project in its final stages.

All over San Diego, aircraft components began to take shape in garages and home workshops. Craft skills, not known by the present generation, had to be learned so that the

A-1 could be constructed. Ray Fife, the O&R NORTH ISLAND Senior Supervisor of the A-1 assembly operation, helped train volunteer workers. Fife has lived aviation since 1912 and learned his trade of aircraft mechanic during the era of the wood-wire-fabric airplane.

Fife worked closely with the designers, too. He passed on to them and to the backyard mechanics the lore of the past. He also made quality inspections on the components fabricated in San Diego. Bill Flint and Dick Hammon, both licensed aircraft and engine mechanics, helped IAS insure flight safety through proper assembly of the wing panels.

Early in 1961, the project gained momentum. O&R NORTH ISLAND set up an assembly shop so that as components were received, the flight model could be pieced together. When extra facilities for fabricating components were required by IAS, MGen. V. H. Krulak, Commanding General of the Marine Corps Recruit Depot, made the facilities of the Depot Hobby Shop and an adjacent building available. There, Mr. Cockrell and his volunteers worked day and night on the wing structures and other surfaces.

Many completed components were donated by private industry. For example, beaching gear and tricycle-landing gear were built by Northrop Institute of Technology; radiator and fuel tanks were produced by Young Radiator Company; the wheels came from Bendix and the covering of surfaces was done by Goodyear Rubber Company. About 35 companies participated.

Components fabricated in home workshops and garages covered a wide range. The float for the flight model was built by Jack Jensen; the museum float, by Chase Allen; bow header, by R. Bethards; wing struts were constructed by A. B. Oberg and J. E. Turner; stabilizers, elevators and rudders by John Roby; tube braces, by R. A. Engle; ribs and wing assembly fixtures, by Walt Mooney; museum tail booms by Harry Parker; gluing ribs, spars, etc. by anyone willing to get their hands full of glue. The IAS slogan for the program soon became "Glue, man, glue!"

Wives got into the act, too. For example, many wing ribs were laminated by Mrs. J. W. Hopkins, wife of the IAS Program Chairman.

Around the first of January 1961, Fife and a hand-picked crew of mechanics at O&R NORTH ISLAND, began the assembly. After the airplane was completed, Cdr. Irvine, O&R A-1 project officer, said of Fife's contribution: "My hat is off to him. Without Ray there would not have been an aircraft." Cdr. Irvine was too modest to admit that much of the success of the venture was due to his own boundless enthusiasm and excellent leadership throughout the assembly and testing period.

The O&R A-1 military and civilian assembly team was composed of C.M. Underhill, R. L. Lokey, V. D. Horner, M. L. Lovato, C. J. Booker, L. J. Cruessing, A. W. Weldon, R. R. Parrott, M. R. Balke, J. D. Reagan, J. L. Wallis, F. H. Kirk, Tom Opella, John Mendonca, Milton Horne, Herbert Isackson, D. Williams and Ray Fife.

A special atmosphere prevailed in the A-1 hangar during the assembly. The men were thrilled to have a part in creating the little airplane. They enjoyed working on a whole product in this day of specialization. All were expert craftsmen, but most of them had come into their trades during the metal aircraft era. Only Fife, Lokey, Parrott, Underhill and Kirk had spent time on fabric airplanes. These five undertook the teaching job, so that the younger men could learn the lost craftmanship of a simpler era, an era in which any good mechanic could completely build an entire airplane.

As the components arrived at North Island, the O&R crew set to work. The orderly phasing schedule did not always work out owing to unforeseen delays, so the airplane had to be assembled jigsaw puzzle fashion.

Special handling dollies and jigs were needed. A dolly was built to fit the main pontoon, and the wing jigs were built and set up. While this was done, the Goodyear Rubber Company sent representatives to North Island from Litchfield Park to cover the wing panels. Fife and his crew made sure that the panels fit properly, designing minor modifications as necessary.

Once covered, the wing panels were fitted together and fastened securely with metal plates. One wing, assembled in the lower part of the jig, moved up to become the top wing, then the work on the bottom

NEW OLDSTER HEADS FOR BAY, MAIDEN HOP

EXCEPT FOR SAN DIEGO SKYLINE, PREFLIGHT SCENE MIGHT BE ONE OF 50 YEARS AGO

wing began. Each wing consisted of ten panels.

Meanwhile, IAS members in San Diego were pushing to completion the components for the flight model, so that the airplane could be assembled and tested well in advance of the August celebration. By the end of April, V. A. Carlson, the IAS project engineer, reported, "We have delivered the main wing panels, the ailerons, elevators, horizontal stabilizers, rudder, tail booms, main float and miscellaneous hardware items." Early in May the last of the surfaces were covered by Goodyear.

As the wings took shape, the A-1 crew built special jigs for the tail, the float and the bow elevator, so that the plane could take shape from any section. For a time, it was hard to see where the aircraft ended and the jigs began.

Various operating surfaces of the plane were fastened together with interplane struts, four main tail booms, an engine support bed, and wire, wire and wire. As some 140 support wires were used to connect the plane, it began to take on a skeleton outline. Diagonal engine supports were connected from the engine bed to the scow-shaped pontoon. When the basic airframe was constructed, the flight model was slipped from the jig for the final assembly work, and the crew started to assemble the museum model.

The model OX-5 engine and propeller were installed, as were seat, instruments and other final touches. Seventy or so turnbuckles were adjusted, and the plane was almost ready for test. Early in July, a weight and balance test showed the weight without gas, water, oil or pilot to be 1247 pounds; loaded about 1600.

The A-1 flying replica has a wing span of 28′8″ and an over-all length of 27′8″. Surfaces are shining white as they are covered with rubberized fabric. The plane can be reconfigured as a *Triad* type by installing retractable wheels, which fold up on either side of the pontoon. With the pontoon removed and a standard Curtiss type tricycle-landing gear installed, the A-1 becomes a landplane. In addition to the long, narrow main pontoon, there is a bow header plane, plus wing tip floats, with extended paddle-like planing boards.

The first week of July, a water-test revealed that the center of buoyancy was slightly too far forward. Minor modifications gave the A-1 proper trim in the water.

Later the same week, it was water-tested again, and this time taxi tests at idle power were made. In taxiing, the float showed a slight tendency to submerge at the bow, so the ballast weights were lightened to compensate for the high thrust line. At this point, the test pilot and others agreed that A-1 was ready to fly.

THE BOX-KITE-LOOKING aircraft was moved on a crash boat from North Island to the Naval Amphibious Base, Coronado, Calif., where the test flight was scheduled for the dawn hours of 11 July.

The engineers, mechanics and others who stood on the bluff and looked out over the shadowy water and those who waited in the boats, were tense.

Don Germeraad, a veteran test pilot, who usually flies the Convair 990, looked calm as he waded to the plane—his orange flight suit vivid against the gray water. Adjusting his goggles and earphones, he signaled the crew to start the engine.

One of the wading men turned the propeller several times much as a child winds the key on a mechanical toy. He placed a rope anchored "boot" on one tip of the prop and backed out of reach, pulling the rope. The propeller turned, the engine coughed, then died. The operation was repeated once, twice. Again he tried, and this time the engine caught, roared into life, then ran smoothly and rhythmically. The white-winged machine then followed a boat across the bay to the designated flight area. A breathless hush fell upon the spectators as they watched. Escort and crash boats were ready. A green helicopter hovered over the fragile looking small plane. Then the tests were accomplished and the show was over. Those who built the A-1 knew it was ready to fly for the world to see, during the Golden Wings Celebration of the 50th Anniversary of Naval Aviation, 19-20 August at San Diego, Calif.

The museum model, scheduled for completion by 15 September, will take its place in the National Air Museum of the Smithsonian. This will fulfill an often expressed dream of Dr. Paul E. Garber, Head Curator, a dream of obtaining a replica of the A-1 for display beside *The Spirit of St. Louis*, the *Kitty Hawk*, the first airplane of the Army Air Service and other famous craft.

When Fred Verville was asked why he thought the reconstruction of the Navy's first airplane was important, he answered, "If we have ever needed inspiration for our youth, we need it now. These two national treasures are for the youth of today and tomorrow. Through them, we oldsters have left a heritage preserved for posterity . . . The A-1 exemplifies for all time the great pioneering effort of our illustrious military and civilian flyers and designers."

A similar thought was expressed by Jim Wenzel, General Chairman of the IAS/Navy National Naval Aviation Meeting, on a certificate of membership in the IAS/Navy A-1 Club. The certificate commends those who gave of their time and skill to re-create the first aircraft in the naval inventory and states that each has gained "the well earned praise of present and unknown future generations who will come to view, and know, this contribution to our American heritage."

BEAMING WITH SATISFACTION, CDR. GERMERAAD WAITS FOR TOW AFTER FLIGHT TESTS

XOOOth LANDINGS

USS *Franklin D. Roosevelt* (CVA-41) and USS *Essex* (CVA-9) are waging a hot contest in the arrested landing department. The latter lost the lead by 100 when LCdr. J.C. Hill logged in the 104,000th, flying a VA-172 aircraft. Lt. Harlan E. Reep of VA-12 had made the 103,000th landing in an A4D *Skyhawk*. The planes kept coming in, permitting *Roosevelt* to boost her boasting to 105,000 landings, this one made by Lt. Jerry C. Patterson in an A3D *Skywarrior* of VAH-11.

Arrested landing number 97,000 was scored aboard USS *Antietam* (CVS-36) by 2nd Lt. Michael E. Tipton, USMCR, then attached to VT-5. He made the landing in a T-28 basic trainer.

The 65,000th on the USS *Bennington* (CVA-20) was made by LCdr. L.R. Olson of VA-113 in an A4D *Skyhawk*. Tying this record on the USS *Bon Homme Richard* (CVA-31) was Lt. Edward F. Cunningham in an A3D.

On the USS *Forrestal* (CVA-59), LCdr. C.A. Rank made the 53,000th and 57,000th landings in an F4D *Skyray* while the 55,000th was made by Lt. Peter J. Brown of VF-103 in an F8U *Crusader*.

Ltjg. C.L. Lavinder, Jr., made the USS *Independence's* (CVA-62) 26,000th arrested landing. He is assigned to VF-41.

Shortly after reporting to VA-76, Ltjg. Ron Baker made the 53,000th landing on the USS *Intrepid*.

Aboard USS *Kearsage* (CVS-33), LCdr. Warren H. Lockwood won his second "landing" cake when he touched down on the carrier's deck for the 77,000th arrested landing. He also made the 71,000th aboard the same ship while assigned to VS-21.

USS *Midway* is closing in on the 100,000 mark. The 93,000th was made by Ltjg. H.C. Nickerson in an A3D *Skywarrior* from VAH-8.

Aboard the USS *Ranger* (CVA-61), LCdr. E.E. Guffey made the 30,000th landing.

And on the USS *Ticonderoga* (CVA-14) Lt. R. A.. Bridgwood of VF-51 grabbed two records in one sortie. His was the ship's 36,000th catapult shot and the 35,000th arrested landing.

Space Almanac Advocated

Weems Makes Recommendation

Future Astronauts should have space almanacs to guide them to the moon. This was advocated by Capt. Philip V. H. Weems, USN (Ret.), when he spoke at an astronautic seminar held at the University of Southampton, England.

The seminar was sponsored jointly by the Advisory Group for Aeronautical Research and Development (AGARD) under NATO, and the University. Capt. Weems, head of the newly initiated Space Navigation class at the U. S. Naval Academy, Annapolis, Md., represented the United States.

Capt. Weems said the first space almanac would be used more by earthbound people than by astronauts in orbit, since it would cater to the needs of teachers and students.

"To require the astronaut to compute his position in space would be comparable to having the mariner navigate without the nautical almanac," he said. "With the space almanac the navigator need not make detailed calculations. The almanac includes shortcuts as aids for accomplishing efficient space navigation."

WEEMS IS NOTED NAVIGATION AUTHORITY

Ensigns G. D. Zally and P. D. Bowman were Capt. Weem's seminar aides.

Capt. Weems graduated from the Naval Academy in the 1912 class which included the late RAdm. Richard E. Byrd, famous Antarctic explorer. Capt. Weems retired as a lieutenant commander in 1943 after 21 years service.

He returned to active service in 1942 and was promoted to the rank of captain. In WW II he was awarded the Bronze Star Medal for service as a convoy commodore. He retired again in 1946 and returned to research in navigation.

This year the 72-year-old captain was called back from retirement to teach the Space Navigation class at the U. S. Naval Academy, Annapolis.

'BEAT IT IF YOU CAN' *is the challenge issued by the "Red Lightning" squadron, VF-91, to all 'Crusader drivers,' referring to the competitive gunnery scores run up in a recent Yuma deployment. In air-to-air gunnery they scored two E's and 10 "quals" at 20,000-feet, and six E's and three quals at 30,000 feet. In 40,000-foot air-to-air camera exercises they rolled along with 12 E's and one qual. The squadron, pictured here with CAG-9, Cdr. B. Sevilla (front row center), says diligent research has failed to uncover any comparable results with the Crusader.*

NAVY CHAMPIONS MAKE 'GRAND TOUR'

PILOT MOORE AND AUTHOR-B/N MONROE PLAN TRANS-LANT FLIGHT

THOUSANDS THRONG LE BOURGET FOR INTERNATIONAL AIR SALON

By Lt. H.L. "Larry" Monroe, USN

DID YOU SAY two weeks in Paris? Where do I sign up!"

That was my immediate response when I learned of the Navy's plan to send the A3J and the F4H to the International Air Salon in Paris. It had all the earmarks of a lot of good flying with a great liberty town thrown in as a bonus.

I had visions of We Three (that's the "J-Bird," John Moore and I) leisurely winging on our Great Circle across the broad Atlantic, nonchalantly plugging into a tanker and then thrilling the eager crowds as we taxied in at Le Bourget Airport in the prettiest airplane in the world.

How wrong can you get after 20 year in the same Canoe Club? I was wrong on all counts—the number, the route (and how to find it), the liberty and the liberty ports.

As it turned out, we were only a part of a very impressive display of our Navy's latest and greatest. Four of the newest weapons systems being evaluated at Patuxent River, the A3J-1 the F4H-1F, the S2F-3, and the HSS-2 helicopter plus a Marine GV-1 for air refueling and a C-130 from VX-6 for logistic support were to go to the show.

The route was not to be a quick non-stop Great Circle, but two Great Circles which intersected in the Azores where we were to RON. The A3J and F4H were to fly the Trans-Lant together, air refuel together and arrive together. But the surprise came when I learned that I wasn't going to have my "Boon to Bombardiers," the automatic navigation system, to do all the work for me. They couldn't do this to me—no sextant, no omni, no "bird dog," no radar, not even a drift sight. But, man, what a compass!

The big liberty turned out to be a total of two days off between 20 May and 16 June. You might call the trip a "working vacation." You might well expect that as great as our Navy is, it isn't going to finance a European vacation for any of us. There must be a purpose. The time was ripe to display and demonstrate the very tangible evidence of our Navy's latest achievements. Three of these aircraft hold six world speed and altitude records. To further support the attempt to increase confidence in our Navy's capabilities, it was planned that after the Paris Air Show, the entire group would conduct briefings, static displays and flying demonstrations for the German and British Navies in their countries. Here was the rare opportunity to show that the good old U. S. Navy was not going stale on the threshold of the Space Age and that the value of manned aircraft is still being exploited. All of us were sobered by the fact that when we put ourselves into the spotlight, any mistake, any incident or any accident would be amplified many fold. There was no margin for slip-ups.

The planning for all of this was much more detailed than any of us had anticipated. It's difficult to imagine how many facets there are to a simple operation until you've had to make all the pieces fit into a smooth whole.

Capt. B. K. Lloyd was assigned as over-all coordinator and OinC, to be relieved on station after the Paris Air Show by Capt. Hal Vita. Service Test Division was designated to furnish the A3J, F4H, S2F-3 and GV-1 aircraft with crews to fly them. Flight Test Division furnished back-up pilots for the F4H, A3J and the HSS-2. Capt. Vita and a pilot for the HSS-2 came from the Weapons Systems Test Division.

In every case, the assigned flight crews were the Project Officers of the airplanes within their respective test divisions. Each crew was responsible for his own flight planning and coordination with other crews as required. I've never flown in the crew of the GV-1, but I certainly learned all about the cruise control on it so that I could figure out how far it could go and still fill up an A3J and F4H. LCdr. John Moore, my pilot, and I found out all about the cruise performance of the F4H and how it differed from our A3J. LCdr. Bill Fraser and his R/O, MSgt. Carl Myers, made it a point to become equally familiar with our aircraft.

TRI-LINGUAL SIGN MARKS RECORD HSS-2

WITH HIGH hopes and a few faint misgivings, we departed Pax on 20 May en route to Lajes. My navigation was really great up to Boston, but that's where the Tacan ended and my "wet finger"/compass DR began. We were to rendezvous with our GV-1 tanker 110 miles southeast of Argentia, so our Great Circle track kept us just outside of range of the few Tacan stations on Nova Scotia and Newfoundland. I never really appreciated the AFCS in the A3J until now. It was holding heading to a gnat's eyebrow, and I thought the altimeter was stuck, we were so steady. If you have to DR, this is really the most.

The picture got even brighter when I called: "Studio 246" on UHF, and he came booming back: "Roger, Studio 852. Studio 246 on station, 20 thousand in the clear." We were still 30 miles from him but now we knew that the cloud tops wouldn't hamper our air refueling.

We gave Bill Fraser first choice of which side he wanted to plug into. He liked the right hose, so we took the left. We found that necessity is a good teacher. In practice operations a pilot may score only a certain percentage of successful plug-ins, but when he's out over the briny deep and needs a gulp for real, his accuracy improves remarkably. Both John and Bill became real sharpshooters with their probes.

We were right on schedule with fuel, time and position. The winds had been quite close to those predicted, and we departed the tanker full of confidence with the revised winds from Argentia aerology passed to us by LCdr. Jack Roulstone who had the navigation duty in the GV-1.

MSgt. Myers and I revised our DR's for the remainder of the flight while plugging in and agreed on the new heading for Ocean Station Delta.

It's comforting to have another head checking your computation when you're playing with 28° of variation and 70 to 100 knots of wind. It could spoil your whole day if you happened to apply that variation as east instead of west.

We had planned to get a radar fix from Delta, but when we contacted them, their gear was inoperative. "Oh well, it's still a piece of cake," I told John. Good old trusting John. He just went right along with the program, held the steadiest heading, altitude and airspeed any navigator ever had to work with. Our fuel consumption was working out better than even the contractor's curves had predicted. We soon realized that we would have to dump fuel to get down to allowable landing weight at Lajes. Who said this bird had short legs?

When we picked up the Lajes Tacan, we found that our wind info wasn't quite accurate, and we had drifted 60 miles to the right of track. We were prepared for such an error, so it presented no problems.

As we taxied in at Lajes, the Air Force tower operator called and asked, "852, what type of aircraft is that?"

"This is the Alpha Three Juliett, *Vigilante*."

"Roger, 852. 819, what type of aircraft are you?"

About this time, MSgt. Myers answered in his best Inner Sanctum voice, "Tower, 819—This—is—the—*Phantom*."

We pulled into the chocks, punched the clocks and recorded 5.1 hours from Patuxent to Lajes. We were on the downhill side of our first transoceanic flight.

All the while that we were concerned with our own problems, Cdr. Charlie Hamilton and Lt. Bob Livingston had been trudging along their merry way in the S2F-3. They had left Pax on the 18th and were landing in Rota, Spain, as we arrived in Lajes. They had stopped the first night in Argentia before tackling that 1300-mile leg into the Azores.

G.E.'S FISK GREETS F4H TEAM AT PARIS

NEXT DAY was a repeat of Saturday. Ocean Station Kilo had operating radar—but just barely. They picked us up at a range of 24 miles and confirmed my DR to be in the money. After passing our position report to Santa Maria and rogering for a "guesstimate" for the Paris FIR, they bid us adieu as we climbed to 39,000 headed for the Lido.

I really tried to comply with the rules. I called France Control until I was sounding like a broken record, trying to report entering the Paris FIR, but no joy. We went feet dry right on the nose just south of Brest, but I still couldn't raise France Control. By now I was glad that John was the pilot and I was the B/N. He would get stuck with the flight violation.

Finally at "Poppa Whiskey," France Control came up and cleared us to "Poppa Oscar" and direct to Le Bourget. Not one cross word about our missing reports! Great gang, that France Control. A few minutes later we were on deck at Le Bourget with both planes in an up status. What a great feeling as we taxied around the field waving to all the people who had stopped to see these strange American airplanes. As we taxied into the static display area, who was the first to greet us? The crew of that hot rod S2F! Aesop's story about that turtle must have been true after all.

The next two weeks at the Air Show are pretty much history by now. We just didn't realize how busy we'd be. Brief, debrief, critique, stand by the airplane, answer questions, practice flying for the Air Show, tape a radio broadcast, and meet the press.

What an experience this was! Aviation reporters from all over Europe gathered for a brief presentation on each type of U.S. Navy aircraft there. After LCdr. Taylor Brown, Flight Test Division, had given the pitch on the A3J, I gave a run-down on its mission capabilities. There were several questions, but I remember one especially, "Could the *Vigilante* duplicate the Trans-Atlantic record just set by the B-58 *Hustler*?"

The people who came to look at the planes on static display were quite interesting. One elderly gentleman from Portugal who had started flying in 1915, thought the *Vigilante* was "the prettiest airplane here," and he added, "it seems as if it's flying even sitting here, but it looks mean." Then there was another type with slide rules, note pads, super-duper cameras, and even binoculars, outside the roped-off area standing on tiptoe, lying on the ground, straining in all directions to study every available detail.

On 5 June, the HSS-2, flown by world speed record holder Cdr. Pat Sullivan of the Flight Test Division, and LCdr. "Dusty" Blades of Weapons Systems Test Division, the S2F-3, and the GV-1 with Capt. Jim Lynch of OpNav aboard, departed for Bonn. Capt. Lynch joined our troop in Paris to give presentations on "U.S. Naval Aviation" at our next four stops.

The jets flew in the afternoon of the 6th in time to go on display for the Navy and Air Force Staff of the German Federal Ministry of Defense.

Our plans for a flying demonstration had to be cancelled on the 7th owing to foul weather. The A3J and F4H did get a chance to impress everyone though. We had a firm time to arrive in England, so our launch time was established too. About one minute after leaving the chocks for the duty runway, we were out of sight of everyone on the ground. They heard us take off in the 100-foot ceiling and one-eighth mile visibility, but they couldn't see us.

THE RECEPTION in England was outstanding. As we taxied in, British Naval officials and the press were there to meet us. Our host made our brief visit the highlight of the entire trip. Passenger flights in the F4H, A3J, GV-1 and S2F were first on the schedule for 8 June. Supersonic flight was demonstrated by the jets, followed by a low altitude air refueling demonstration with the GV-1.

After the flying, a presentation was made in the station theater by each of the Project Pilots. There were approximately 200 very interested Naval officers and members of Industry in attendance. That afternoon the jets demonstrated maneuverability, slow speed flight, and over-the-shoulder maneuvers.

On 9 June, we again made presentations to about 100 members of the British Navy, Air Force and Industry. The flight demonstrations were conducted in the afternoon.

On the afternoon of 10 June, all aircraft arrived in West Germany. This was the northernmost excursion of the trip. Sunset was about 2230 and first daylight at 0230. What a long day!

The next day, Sunday, was our first holiday routine since our departure so John and I took advantage of this by taking a tour to Hamburg where I finally got to put my camera to good use.

On Monday, 12 June, we again gave our presentation to approximately 70 officers. This was followed by flight demonstrations with the S2F and HSS-2 making three flights each, all of them executed with precision.

ON TUESDAY, 13 June, we all started the long trip home with the jets and GV going to Rota and the S2F "Turtle" heading for Prestwick and the northern route because of the high headwind components which were forecast. We stayed over in Rota on the 14th to give our maintenance people a chance to get a good look at the jets before starting back across the pond. During the test hop there, we put on a brief air show for the troops at Rota. Let it be said here that our small group of Navy and contractor maintenance men did a great job all the way.

On the 15th, we modified our original plan to go direct from Rota to Argentia, deciding to land at Lajes and then top off both jets north of Lajes en route to Argentia. This time the forecast winds turned out to be pretty accurate. We were bucking 100 knots on the nose from Rota to Lajes and 130-150 knots on the nose from Lajes to Argentia. On the leg to Argentia we rendezvoused with the GV 300 miles at sea, out of reach of any and all navigational fixes. This wasn't too difficult to accomplish since all we had to do was get our DR to merge with theirs! It worked absolutely. We had no difficulty at all.

We arrived in Argentia on the prettiest VFR day the natives had seen in quite a while. Both the jets were still in an up status and needed only routine servicing to be ready for the last leg to Pax the following morning. Our accommodations at the Argentia "Hilton" were the best of the entire trip, and I can heartily recommend the big lobster on the dinner menu at the club. The next morning we still had adverse wind conditions, but we were eager to be the first to arrive on the Service Test Line.

It was a great experience but, as always, it was good to be home. The trip was a complete success. We had flown these new jets for a distance equivalent to more than half-way around the world. Complex as they are, they were maintained on a shoestring at civilian and military fields with a wide variety of non-standard jury-rigged starters, power units, etc. They met every commitment without a hitch—and that meant a high degree of efficiency.

Of greater significance though is the fact that literally thousands were

TOUR ENDS WITH CUSTOMS CHECK AT PAX

made aware that the U.S. Navy is keeping pace with the latest technological advances in modern weapons systems.

In retrospect, I have one regret. I would like to have been present when Cdr. Austin, 6th Fleet Liaison Officer at the Paris Air Salon, collected the barrel of beer he won from USAFE Task Force Operations Officer, Col. Colgan. The events of the last two days of the Air Show we timed to a gnat's eyebrow, so that the three four-plane sections of A4D's, F8U's and A3D's launched from the USS *Forrestal* in the Med for a formation low pass had to really be in the money or get an abort from the Air Show Control.

Cdr. Austin bet Col. Colgan a barrel of beer that the Fleet boys would be over the head of the runway at 1734 plus or minus zero! The civilians in the crowd may not have appreciated what was happening, but all of the military people were sitting on the edge of their seats as we watched the clock. At 1734 *exactly*, the lead airplane crossed stripes on the head of the runway and the Sixth Fleet boys were the heroes of the day!

FRIEND OR FOE? YOU SHOULD KNOW

DOWN THROUGH the ages, warriors of all the nations have done a generally miserable job of distinguishing friend from foe and acting accordingly. In the foggy light of battle, snipers have thrown down on members of their own patrols. Fighter pilots have blasted friendly ships. AA gunners have methodically picked off their own covering airplanes. Stonewall Jackson, dimly seen in the greyness of sundown, was shot to death by Confederate pickets."

This is the grim opening of a short, readable and Osborn-illustrated new Sense Pamphlet, *Recognition Sense*, recently distributed. It was issued by the Aviation Training Division of the Office of the Chief of Naval Operations and is designated NAVWEPS 00-80Q-51.

Obviously, the pamphlet attempts to "sell" the importance of aircraft recognition. And it succeeds. It brings up all the standard reasons why officers and men in Naval Aviation attach so little importance to recognition.

"You can't hit 'em when you can't see 'em," is one excuse, buttressed with, "Speeds are too great. Altitudes are too high. Planes look too much alike. Push the button and let radar do it. We're not shooting at anybody anyway."

One by one, the pamphlet accepts these excuses and, one by one, smashes them, using logic, common sense, and emphasis on need-to-know information.

"Time is always short. Speeds are usually high. But the heart of the problem is still *recognition*—the quick and certain ability to identify a *Fresco* making a run on you and knowing for sure it's not an F8U, an F-100, or the archangel Michael on a supernal errand. The hard way to learn the importance of recognition training is to need it and not have it."

The pamphlet tosses in some case histories, documented and incredible.

"During the Korean War, a flight of British *Sea Fury* fighters was attacked and disastrously shot up, because the attacking pilots thought they were shooting at Russian IS-7's. Everyone was sorry about the mistake."

And again: "We lost far too many people, ships and airplanes (in WW II) because invincible nonrecognizers on our side continued to be fat, dumb and trigger-happy. They blasted their own friends."

Speed? "Not long ago, an official survey of all the approach angles was run under operational conditions. Detailed questions on the possibility of recognizing bogeys at supersonic speeds were put to a group of selected Mach-busting pilots, who had logged from 15 to 100 hours of supersonic time. They said flatly that aircraft can still be seen and recognized at supersonic speeds. A tabulation revealed their view that, in a supersonic pass, you can see and recognize your target 98 per cent of the time. Some of the pilots said that after 80 hours of supersonic time, *if your recognition training has been intensive*, 100 per cent recognition is possible."

Radar? "Experience has shown that electronic gadgets can be sadly lacking in the subtlety of discrimination that distinguishes man from machine. If SOP did not specifically require that the pilot know what he's shooting at, a lot of friendly airplanes whose pilots forgot to turn on the IFF would probably be with us no longer. These craft would have been blasted electronically by automatic devices that can say no more than *yea* and *nay*, with no in-between. A friendly aircraft with a busted IFF should be a dead aircraft to the radar's way of thinking, whereas a pilot might have one or two second thoughts before cutting loose with the artillery. A visual check in continental air defense, and everywhere else, *is still mandatory*."

A classic lack of recognition example is cited in the case of the freighter *Empire Pelican* in WW II. In mid-Mediterranean waters and headed for Malta with food and explosives, she was escorted for three days by Italian planes, got involved in an Italian convoy, withstood an Allied bombing attack, and finally, after slipping from the convoy and nearing Malta, was the target for shore batteries until she was recognized.

There is reason, then, why the pamphlet issues an admonition, after a verbal chewing out, to the complacent character who is "Assistant Laundry Officer at NAS BUNKFATIGUE, located in central Iowa, where the only foreign aircraft is an occasional *Viscount*. BUPERS knows where he is," the pamphlet warns darkly, "and can effect a quick change (of duty) any old time. Orders sometimes show up when you least expect them."

And when the orders do arrive and you suddenly find yourself at a critical area of the world, the recognition factor accents its own importance. None of the negative excuses can apply then. "The recognition job *can* be done and *is* being done. But there's plenty of room for improvement."

KNIGHTS FALL IN AIR/SURFACE BATTLE

STATION Seven, this is Fox 63. Message follows."

"Fox 63, this is Station Seven. Go ahead."

"Station Seven from Fox 63. Message: KB2XQ. Over."

"Fox 63, this is Station Seven. Roger KB2XQ. Wait. Out."

"Fox 63, this is Station Seven. Message follows: KR1 to KR6. Over."

"Station Seven, this is Fox 63. Roger Message: KB2XQ, Over."

Confused?

These are not encrypted messages pertaining to operations of Airborne Early Warning Barrier Squadron Pacific which originates them. Barrier operation messages are broadcast on a different frequency than used by the two units above.

The coded interchange are moves in a long-distance chess game conducted

K. C. BRANON, AC2, MAKES HIS MOVE

between off-duty personnel in a barrier plane and off-duty personnel aboard a radar destroyer on duty in the North Pacific.

While the aircraft and ship are in radio voice range, the chess game continues until the crew of either plane or ship makes a move that results in a checkmate. When the plane has moved beyond voice range, the positions of the chess pieces are recorded, and the next time Fox 63 passes within range, the game continues.

Since long hours of scope-watching are hard on the eyes of men searching for unfriendly radar blips, extra personnel are carried on big radar *Constellation* aircraft flying the barrier, and shifts are changed frequently. Off-duty personnel rest between watches. Extra pilots and navigators are carried for the same reason.

The air-surface chess match got its start when bored off-duty men in a *Constellation* proposed the game to the crew of a radar destroyer. Each aircraft crew is in voice communication with the ship for several hours during the month. The challenge was accepted, other crews took it up and the games continue.

As of this writing, neither team has achieved a checkmate. Regardless of which team wins, the long flight hours have been shortened for men off duty.

Missile Scientist is Lauded

Given Navy Public Service Award

Leading scientist in the *Talos* missile program, Dr. Wilbur H. Goss, has received the Navy's Distinguished Public Service Award for his contributions to and leadership in guided missile research.

He joined the Applied Physics Laboratory of The Johns Hopkins University in May 1942 where he helped develop the radio proximity (VT) fuze and torpedo exploders during WW II years.

Dr. Goss is co-inventor of the supersonic ramjet engine. He has been associated with the development of the long-range supersonic anti-aircraft missile from its beginning in 1945.

Legion of Merit Awarded

President Cites VA-46's Chief

Because he contributed technical skill in designing a portable tester and a special radar installation effecting considerable financial savings to the Navy, Benjamin F. Rotter, AQCS, has been awarded the Legion of Merit by President Kennedy.

At the time he earned the award, Senior Chief Rotter was assigned as supervisor of the Aviation Fire Control Shop in VA-44, based at NAS JACKSONVILLE. In 1959, the need arose for a unit which would test all the system components of the AERO 18 LAB (loft angle bombing) delivery system. Rotter built, from salvage, a portable tester which could check out the entire LAB system under conditions similar to those normally encountered in flight. Those parts he could not find in salvage, he manufactured.

In February 1960, a new need arose. This time it was for a low-cost, two-place airborne radar aircraft with which to train A4D-2N replacement pilots in the use of the AN/APG-53A radar. Rotter designed and supervised the prototype installation in an AD-5 aircraft.

Senior Chief Rotter reported to VA-46 in August last year. Cdr. Hugh J. Tate, the squadron C. O., presented the award in ceremonies at Cecil Field.

NOT MANY PLANES, *if any, have flown over both Poles, but VX-6 has one of them, a P2V Neptune. Far right, C. O. of VX-6, Cdr. M. D. Greenwell, welcomes Lt. Little D. Player and the crew of the "437" back from an Arctic run. Standing (left to right): J. D. Adams, Jr., AT3; GySgt. M. D. Griffin, USMC, Ens. R. R. Quaine; Lt. W. W. Works; Lt. Player and Cdr. Greenwell; and kneeling, J. L. Gray, J. T. Jackson, I. M. Bearden, and W. J. Schobert, Jr.*

GLENVIEW RESERVISTS POLISH ASW TACTICS

CHECKING IN *for concentrated courses at FAETULant, Norfolk, are Glenview reservists, left to right, W. W. Barcus, Ted May, Chief Al Bartels, G. A. Ball and T. E. Chesnut, all of VS-724.*

ANNUAL CRUISE *is crammed with study for reserve crewmen seeking latest ASW knowledge. Lt. John Santivasci, FAETULant, demonstrates advanced electronic systems for VS-724 crewmen.*

REFRESHER COURSES *in anti-submarine warfare techniques are given to Naval Air Reserve pilots during annual cruises. FAETULant instruction is given by LCdr. Ted Grant at NAS Norfolk, Va.*

EAST SOUTHEAST of Cape Hatteras, 100 miles from shore, a U. S. submarine slipped below the surface.

USS *Argonaut* was ready for the exercise, tagged with being "it" for the biggest of hide-and-seek operations—trying to remain undetected by airplanes flying overhead.

The "enemy" was made up of strangers to the Norfolk area—visitors from Chicago. Where normally S2F's, marked "AU," tracked the Atlantic off Norfolk, now there were additional crews flying planes marked with the "7V" of NAS GLENVIEW.

VS-724 was at Chambers Field for a two-week active duty stint, joining VS-24 of Norfolk. Entering fully into fleet squadron activities, the Weekend Warriors worked toward the goal of readiness perfection.

As the *Argonaut* dived, the lead airplane quickly passed over datum for sono drops. In the minutes that followed, the pattern was set to track the submarine to her watery lair. Though this was practice, crews were tense as they made the final passes over the spot, picking up submarine contact on their detection gear. Then administering the "knockout," crews knew that if this were the enemy, a "kill" would be registered.

The *Argonaut* made every effort to provide plenty of practice in sonobuoy detection for the visiting fresh-

AIRCRAFT GET *expert maintenance as Glenview man, L. L. Morales, dives in enthusiastically.*

water sailors. There were misses, and there were kills, but with each effort, proficiency increased. At the end of the two-weeks duty, VS-724 pilots and crews knew their capability.

On arrival at Norfolk, Cdr. C. D. Cram, VS-724 skipper, was welcomed by Cdr. Max R. Rush, C. O. of VS-24, who offered VS-24's help whenever and wherever needed.

Operating on the usual, rigid schedule, reservists follow during a cruise, VS-724 crews added to the spice of flying lecture sessions at the Fleet Airborne Electronic Training Unit, Atlantic. Under the command of Capt. R. P. Kline, FAETULant instructors refreshed pilots and crews in the latest anti-submarine warfare tactics and equipment.

Then, putting into practice what they had learned, VS-724 aircraft crews began the intensive flight schedule that covered the ASW syllabus.

Missions carried out by the squadron included rocket firing, bombing, searchlight training, sonobuoy and smokelight drops, and MAD tracking flights.

Near the end of the two weeks, VS-24 pilots conducted an Operational Readiness Inspection to test the capability of the reserves. VS-724 was rated a high 91. LCdr. Bill Leppin of VS-24, coordinator to VS-724, conducted the critique.

After the cruise, every man not only knew his job, but also had a new appreciation of his role in the team committed to seeking out and destroying hostile submarines.

BECAUSE SUBS *are scarce in the Midwest, Glenview reserve crews fly early and late to take full advantage of Norfolk cruise period. VS-724 aircraft prepares for another ASW sortie.*

UNDERWATER SOUNDS *transmitted via sonobuoys help reserve crews locate subs at sea. Chief R. S. McLane, VS-724, explains sonobuoy load to C. R. Baker, Lt. Bill Vincent, Cdr. C. Wallace.*

LT. DICK ALLYN *and Cdr. Sam Lambert, kneeling, crewmen J. J. Kemar, K. Parker study map.*

FLEET SQUADRONS *assist reserves drilling at Norfolk: VS-724 X. O., Cdr. Lambert, and C. O., Cdr. Charles Cram, at left, with VS-24 counterparts, Cdr. Max Rush, C. O., Cdr. E. A. Boyd.*

Buddies to Beeville Base

Helpful Greeting Eases Transfers

Chase Field's Training Squadron 25 seems to have solved the "displaced person" aspect common to a permanent change of station. The squadron effort, known as the "Welcome Buddy" program, entails the selection of a buddy to serve as a one-man committee to welcome each person ordered to the squadron for duty.

The buddy, of the same rating and marital status as the prospective shipmate, establishes contact with his new friend in a form letter giving information on local living and working conditions and an offer of assistance in arranging for permanent or temporary living quarters, receipt of household effects, schooling for children and other details of daily living on or near a new station. Several letters are often exchanged before the future squadron member is actually transferred from his old duty station.

When he arrives in Beeville, he is met by his buddy—and the stranger in a strange locale finds himself greeted with hospitality. He may be chauffeured about the city on an apartment or house hunt while his wife and children relax in the comfort of his chauffeur's home—where wife meets wife, children meet children and lasting friendships are formed.

When he formally reports for duty in compliance with his orders, the new shipmate is escorted during the check-in process by his buddy and is personally introduced to and welcomed by the commanding officer, the executive officer, his department head, his division officer and others with whom he will be closely associated in his new duties.

Because unmarried men have fewer problems in adjusting to new environment than their married counterparts, they are treated to a modified version of the red carpet reception. They receive the welcome letter, the check-in escort and personal introductions.

Camera Capsule Developed

Scientific Photographer is Honored

Scientific photographer Art Block in the Pasadena photo lab of Naval Ordnance Test Station, China Lake, has devised a camera capsule, or pod, housing two 70mm sequence cameras and one 16mm camera.

He developed the pod for torpedo air drop programs, providing photography to study parachute deployment, flight gear functioning, and weapon oscillation.

The pod can be mounted on any bomb rack with 14-inch centers, making it adaptable to many aircraft and several test situations. It can be mounted on drop planes or used on chase planes. Four ports have been cut into the pod—three on one side and one on the other—so that coverage of a test can be obtained in two opposite directions.

A camera dolly was also developed which enables two men to attach or detach the pod. One person can easily handle the pod while transporting it from one area to another.

Block built the pod from surplus materials at a total cost of $200. He submitted the idea to the Beneficial Suggestion program and, based on an estimated annual saving of $10,000, he was awarded $375, the most ever given at the test station.

Instructor Cited at Beeville

Robertson Named Instructor of Year

J. D. Robertson, AEC, has been singled out as Instructor of the Year at Naval Air Mobile Training Group, Chase Field.

"Winning this distinction against keen competition," said Capt. Sam E. Clark, commanding Chase Field, "requires a mastery of teaching methods and techniques. Acquiring these skills demands great effort and is indicative of your resourcefulness, initiative, and devotion to duty."

Chief Robertson was presented a letter of commendation and a plaque during personnel inspection.

50,000 GCA's: All Okay

NAS Brunswick Unit Sets Mark

Staffed with three officers and 19 enlisted, the GCA unit at NAS Brunswick has topped the 50,000 mark in accident-free approaches since the station was recommissioned in December 1951.

The record approach was made by a P2V *Neptune* assigned to VP-11. One-sixth of the total landings were made under adverse weather conditions.

OUTSIDE, *a new proficiency trainer for ASW crews at NAS Norfolk is van-like in appearance. Originally, it was an empty wooden hull, but 90 days later, the trainer was operating. It was built by Warrant Officer James M. Schneider and crew of the NAS Avionics Branch, and Frank Angelo, engineering assistant of Loral Electronic Corp.*

INSIDE, J.H. *Schneider and Frank Angelo put a crew from VP-30, Detachment A, through some problems arising in a simulated flight. Loral Electronic provided NAS Norfolk with aircraft mockup suitable for conversion to an operational trainer, along with certain electronic equipment comparable to that installed in P5M's used in ASW flights.*

VAdm. Ekstrom Flies F4H-1

Joins 1000 Kts. Club after Flight

VAdm. Clarence E. Ekstrom, ComNavAirPac, was initiated into the exclusive "Thousand Knot Club" after his familiarization flight in the F4H *Phantom II*.

Bendix Trophy winner Lt. Dick Gordon of VF-121, the Miramar-based F4H *RAG* squadron, was pilot for the hour-long demonstration. Adm. Ekstrom, a veteran of 35 years Navy flying, handled the controls for several minutes at speeds up to 1000 knots.

POSTER PROCLAIMS QUALIFYING FLIGHT

At the end of the flight, Adm. Ekstrom said it was "the thrill of my lifetime," and added, "We are glad to have the F4H *Phantom II* in AirPac."

Two Years of Safe Flying

Record of Two CVG-5 Squadrons

Like visiting potentates, Cdr. Addison English, C. O. of VA-52, and Cdr. William Hoover, C. O. of VA-56, were accorded full honors as they climbed from their planes aboard *Ticonderoga* after the last flight of fiscal year 1961. The reception committee included both Capt. Robert Farrington, commanding officer of the carrier, and Cdr. Robert Godman, C. O. of Air Group Five.

As the skippers came aboard, each following all other planes in their squadrons, they were honored for the two consecutive years safe flying for each squadron.

Together the squadrons racked up a total of 20,583 hours since the last accident. In this period, which included 11 months deployed on "Ti," VA-56 alone flew over 7900 jet hours and logged over 3200 day and night carrier landings.

The long, unbroken, accident-free period is but one indication of the excellence of these two outfits. VA-52, which flies the A4D-6, won the FY 1960 CNO Safety Award for propeller attack planes. VA-56 won the 1959 Weapons Meet light jet attack championship and the FY 1960 ComNavAirPac Battle Efficiency Award.

As a matter of incidental intelligence, VA-56 is still flying the original 12 A4D-2's delivered from the El Segundo factory in May 1959.

Chase Field Men 'Isolated'

Work with USAF on Nearby Island

Unsuspected by most Navymen stationed at NAAS CHASE FIELD, five of their number have pulled detached duty with the U. S. Air Force at nearby Matagorda Island.

The enlisted team is headed by H. T. Wilson, AO2. The men maintain and operate rocket and bomb targets on the island.

Principal range now used consists of one Navy multi-purpose target raked by three towers. Two of these towers read impact location on the target, and the third reads dive angle on the aircraft. Local control of the aircraft is maintained by radio communications from a control tower.

The Navy men usually remain on the island during the week, for the range opens before the morning ferry arrives. Occasionally, they turn to on Saturdays, but work is never scheduled for Sundays.

Power to operate is generated by 3kw gasoline generators located under the towers, and there is nothing better to work up an appetite than cranking a temperamental engine in the morning.

The detached duty gives the men a chance to study, read, fish and hunt. Chow is reported excellent. But the land-based Navymen are given a taste of sea-going ways on the Air Force base. Since fresh water is at a premium owing to the low elevation of the island, the men take salt water showers daily.

Despite the water shortage, Matagorda duty apparently has a charm. Not one man has asked for other duty since the detachment was organized a year ago, in September 1960.

SECRET LIVES OF 'CHIP' LOVETT *shows why many disbursing officers drink iced tea and wish they had gone through flight training. Naturally! With his ship far at sea, Ens. Lovett, disbursing officer of USS Independence (CVA-62) found himself high and dry recently with an unwanted payroll fortune of $250,000. As these photos depict, so attached did he become to his grip of green, he ate, slept and even showered with "it" ever at hand. Eventually Chip's ship came in and, according to the "Greatest and the Latest" news release, it was a toss of the coin as to who was happier—the sailors who got paid or Ens. Lovett who was many pounds (15) lighter.*

Days Are Counted by Det. A

VX-6 Men in Antarctica Out Early

The chilling experience of wintering at NAF McMurdo Sound in the Antarctic was considerably warmed for the VX-6 Detachment there by the news of an early break in isolation. Cdr. Martin D. Greenwell, commanding Air Development Squadron Six, hopes to land a ski-equipped C-130-BL *Hercules* on the snow runway the 20th of this month.

Meanwhile, LCdr. Louis L. Helms, officer-in-charge of the detachment, reports his officers and men have devised many methods of counting the time on the ice. These include the number of showers taken, paydays had, movies shown and days off.

"Most of us are eager to bail out," he radioed, "but for some strange reason, no one regrets being here. The experience and adventure seems to be worth the wait."

October 1st is the earliest VX-6 planes have reached the Antarctic in six seasons of Operation *Deep Freeze*.

An unexpected mail call was had by men in the Antarctic last April, six weeks after the continent had gone into isolation. A C-130 was flown from New Zealand in order to evacuate a sick Soviet scientist at Byrd Station.

THE FIRST TO QUALIFY *as an enlisted pilot in the GV-1 Hercules, MSgt. Charles W. Tippie is congratulated by Col. R. O. White, commanding officer of Marine Air Group 352.*

RADM. TATSUTO YAMADA *(L) Japanese National Defense College, visiting Fleet Air Wing Three at NAS Brunswick, Maine, makes complete tour of Arctic Overland Survival School.*

Copters Fish for Science

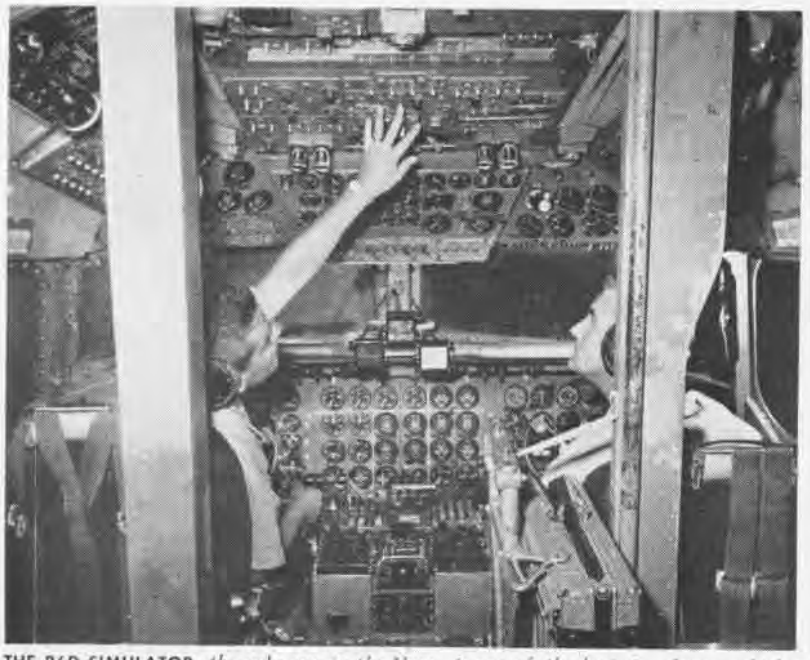
Corpus Craft Assures Net Results

Helicopters based at NAS Corpus Christi went fishing this summer, literally. Sikorsky HRS helos placed 55-foot circular nets in Corpus Christi Bay near the station at the request of the Institute of Marine Science, attached to the University of Texas.

The Institute has been trying to determine how the fish population and variety in the Bay compares with the open sea. Using boats to direct the nets would disturb the natural distribution of fish, so an aerial delivery by helicopter was sought.

Pilot of the first drop, LCdr. J. E. Hamburg, and Lt. W. I. S. Easton, who made the second trip, flew at an altitude of 400 feet. The 650-pound net was attached to a 450-foot line and lowered over an undisturbed section of the Bay. Members of the Institute then arrived at the net by boat to count the marine life.

When the net was ready to be picked up by the helo, it had to be hauled up vertically to avoid dragging it. Airborne, the net acted like an over-sized windsock, causing a great deal of drag. Pilots reported that maximum speed was 20 knots, regardless of the engine power used.



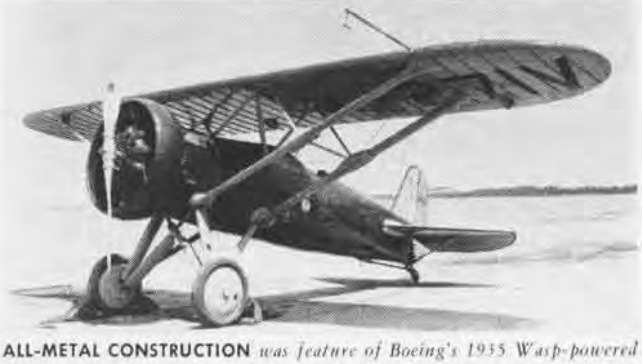
THE R6D SIMULATOR, *the only one in the Navy, is one of the busiest "aircraft" in service. Flown by VR-21, NAS Barber's Point, and the 1502nd Air Transport Wing, Hickam AF Base, it is used for training 16 hours per day Monday through Friday and eight hours on Saturday. During the fourth quarter of FY 61, the simulator was utilized 984 hours, which represents 221% utilization. The VR-21 syllabus, which is flexible, requires 28 hours of simulator time. At left, Ltjg. C. Goodhue and Ltjg. B. Barrett of VR-21 "fly" the simulator. At right, G.L. Tucker, TDAN TSgt. C.B. Mills, USAF, and Anthony M. Collins, Technical Representative, Curtiss Wright Corporation, work on trainer.*

FORGOTTEN FIGHTERS?

NOT ENTIRELY forgotten, some of these designs contributed greatly to advancing carrier fighter design. Most were experimental types; however, WW II FG-1's saw wide service.

FIRST FOUR SKYLANCERS *were in flight test when Douglas F5D-1 program was terminated. Based on F4D with thinner wings, supersonic F5D carried Sparrow II's.*

EBERHART COMANCHE *was entered in 1927 "Battleship Fighter" competition. All of the competitors flew with wheels as well as float gear.*



ALL-METAL CONSTRUCTION *was feature of Boeing's 1935 Wasp-powered XF5B-1 monoplane. Later F4B-3 and -4 used fuselage and tail design.*

MONOPLANE OR BIPLANE *wings could be fitted to 1933 Curtiss XF13C prototype. Final XF13C-3 monoplane shown had modified vertical tail.*

TONY FOKKER'S *WWI fighters were world-renowned. His American company's products, such as Fokker XFA-1, were not as successful.*

GOODYEAR PRODUCED *some 400 Corsairs as the WW II FG series. Most were direct counterparts of the Vought F4U series. The FG-1A version, with wing folding, tail hook, and other carrier equipment removed was solely a Goodyear product for shore-based Marine squadrons.*

NEW AIR SHIPMENT ENGINE STAND READY

A NEW DESIGN for air shipment of jet engines, developed by U.S. Naval Air Development Center, Johnsville, Pa., not only improves airlift handling but also reduces costs and conserves shipping space.

The Bureau of Naval Weapons, concerned with the air shipment of high priority jet engines such as the J-57, J-65, J-71, and J-79 series, in the 3000 to 5000-pound class, had assigned the problem to NADC. B. S. Hutchins was the program director.

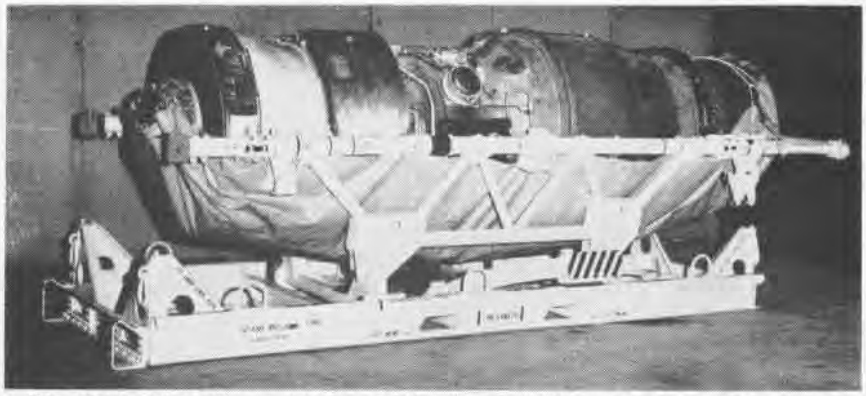
Bulky containers used prior to the study were not only too heavy but were not interchangeable for shipping purposes. They added a prohibitive amount of weight for air transportation and made loading and unloading through Navy side-door aircraft particularly time-consuming.

The smaller side-loading Navy R5D, normally preferred for air shipment of engines from the standpoint of economy, accommodated the J-79 engine only when the lids of the engine containers were removed, thereby exposing the engine to the elements. Furthermore, this aircraft would not accommodate the J-57 or J-71 engines at all because of the excessive length and width of the engine containers. Use of the steel container resulted in a total engine shipment weight twice that of the engine less afterburner.

In contrast, NADC's newly designed and engineered jet engine airlift stand weighs about one-third the weight of the large J-57 engine container, or 1340 pounds. When commercial air is employed, every pound of weight reduction puts $1 in the Navy's pocket; when utilizing MATS, the savings is estimated at 50 cents per pound. Since the airlift stand represents a weight reduction of about 2540 pounds over that of the steel container, this means a savings of $2540 for each 5000-mile commercial air trip, or half that at MATS air rates.

Although the shipping stand is initially more expensive than the steel container, the cost would be rapidly amortized. Using only the above dollar figures, and disregarding all other advantages, the stand will pay for itself in three typical 5000-mile trips. From this point on, it would pay large dividends to the Navy. Since typical monthly engine shipments from the East and West Coasts to overseas bases may average as high as 40 shipments each per month, the potential value of this light-weight airlift device is even more impressive.

THE AIRLIFT STANDS MAY BE STACKED ONE ON TOP OF THE OTHER TO CONSERVE SPACE



A TOP COVER WILL OVERLAP BOTTOM COVER TO LOCK OUT WEATHER DURING SHIPMENT

In addition to cutting costs, the new engine airlift stand is equipped to load the jet engines into side-loading aircraft from one end, saving time and improving the engine handling operation. Because of the compactness of this stand, even the larger engines are now able to be transported by smaller, side-loading Navy aircraft.

The use of this airlift stand eliminates the need for various sizes of containers and simplifies the problem of stocking. Engine adapters, an integral part of the airlift stand, enable one basic shipping stand to accommodate all engine models. It is now possible, for example, to send a J-57 engine from the West Coast to Japan, and return any one of the other jet engines on the same stand, using appropriate built-in engine support adapters.

Another unique and cost-saving feature of the universal jet engine airlift stand is that it may be collapsed and folded when not in use. The stands may then be stacked one on top of the other within the aircraft. The airlift stand loaded with a J-57 engine is smaller than the comparable steel container by more than two feet in length, approximately two feet in width, and almost one foot in height. When unloaded and collapsed, the stand is only 19 inches high, as compared to 73 inches for the steel containers loaded or unloaded, a savings of four and one-half feet. Thus the space formerly occupied by one empty container, either in a warehouse or on board an aircraft, will now accommodate almost four airlift stands.

Super Cleanliness Achieved
O&R San Diego Has New Gyro Shop

Particles of dust only a third the size of the solids in cigarette smoke—not cigarette ashes or tobacco, but smoke—can destroy the efficiency and reliability of ultra-precision gyros. Thus repair and overhaul facilities for gyros must be clean—super clean.

To meet this need a special facility for the repair of space age instruments has been completed at O&R San Diego. The new 10,000-square-foot shop has a filtration system designed to remove 99.95% of all particles measuring 0.3 microns or larger. These particles are so small that it would take 77,000 of them laid side by side in a line to measure one inch.

Gyros, used in the critical inertial guidance systems of missiles and such new aircraft as the A3J, must be so precise that they can detect motion 3000 times slower than the movement of an hour-hand of a clock. They must be accurate to less than one second of one degree, which is the equivalent of a slope of fifteen ten-thousandths of an inch in 25 feet.

Thus every precaution for cleanliness in repair is essential. In the San Diego shop, air is scrubbed by the filtration system. It is then forced into the shop spaces under pressure. Pressure is kept two pounds per square foot in the more critical shops and drops through the less critical rooms.

The shop has been designed to prevent accumulation of dust and to detect any that might get in. There are no square corners, and floors curve up into the walls to eliminate edges. All interior surfaces are covered with vinyl plastic.

O&R San Diego engineers believe the super-clean gyro repair facilities will more than pay for themselves through a cut in gyro rejections and through improved missile reliability.

New Tacan Sets Bought
Better Lock-On Distance Claimed

The Navy has awarded a $7,847,627 contract to the International Telephone and Telegraph Corporation's Federal Laboratories at Nutley, N.J., for purchase of TACAN sets.

The new TACAN equipment is superior to earlier versions in that it operates at higher altitudes, at longer ranges and is considered more suited to high performance jet aircraft.

STRICTLY 'BY THE BOOK' AT WHIDBEY

'BOOK' AND DIVIDER ILLUSTRATE LECTURE

At NAS Whidbey Island, Patrol Squadron 47, far removed from schools and mobile trainers, has developed it own efficient methods of training personnel in the operation and maintenance of complex anti-submarine patrol aircraft and advanced detection systems.

The method is simple and inexpensive. Expanding, by photographic means, charts and systems diagrams taken directly from the Pilot's Handbook and the Maintenance Manual for the P5M and mounting these on 30x40-inch boards, the squadron is provided with an extremely effective training aid, an easy reference for general discussion, and a quick guide in trouble-shooting difficulties.

Mounting the boards on bulkheads, like pages of a book, facilitates ready reference and easy removal. Maintenance shops and pilots' ready rooms have their own "book." Two pointers bolted together to resemble a pair of dividers are used to explain the relationship between component parts. After a lecture by a qualified instructor, personnel—with charts—can be taken to the aircraft and shown the various components of the system on the spot.

By covering pictures with thin Plexiglas and using colored grease pencils, extremely complex systems can be explained readily. In addition, blackboards have been set up in accessible areas to aid in explanation of circuits and systems.

The singular success of VP-47's program has been borne out by its impressive performance and safety record. Since winning the CNO Safety Award for FY 1960, VP-47 has amassed more than 5200 accident-free hours with only seven aircraft. Availability averages between 75 and 85 per cent month after month.

Recently one of the squadron's aircraft experienced a fire in the port engine while the starboard engine was feathered for training purposes. Following the emergency, extensive repairs, including those normally done at an O&R facility, were done by squadron personnel. In just ten days the entire Sundstrand compartment was reworked. Approximately one mile of new wires had to be properly labeled and strung from the fire wall section of the engine, through the leading edge, to the main power center and terminals. New fuel and oil lines had to be made up and installed. The entire job, done without blueprints or factory wiring harnesses, passed inspection. An actual engine run-up proved that not a single wire had to be changed in any way.

E.A. SIMMONS USES 'PAGE' ON LOCATION

VP-47's avionics shop has set up complete JJ (*Julie/Jezebel*) benches to keep "black boxes" in good working condition. Bench facilities plus charts have kept flight crews effective.

LantFlex 2-61 Completed
Summer Exercise Trained 1200 Men

Ships of Task Force 24 have completed the third of a major series of summer exercises called *LantFlex* 2-61 which trained approximately 1200 midshipmen from the Second Fleet.

Participating in the ten-day exercise were the USS *Shangri-La* (CVA-38), eight destroyers, three submarines and four replenishment ships.

The midshipmen came from the U.S. Naval Academy and from colleges and universities in the East.

LETTERS

SIRS:

The Naviator Information Office located at NAS NEW ORLEANS is compiling a "follow-up" file on all officers, former NavCads and officer candidates processed from 1948 to the present time.

We would like those who have been so processed to advise us of their address by postcard as soon as possible.

The purpose of this file is to complete the records and history of activities in this office since its organization as to processing activity for flight trainees from southern Alabama, southern Mississippi, all of Louisiana and the Pensacola area of Florida.

JESSE WOOD, JR., CDR., NIO
NAS New Orleans

SIR:

Much has been said in recent years of "professionalism" in Naval Aviation. As an interested observer, I wish to nominate the air department of USS *Forrestal* (CVA-59) for the accolade "Carrier Professionalism" typified by a recent launch of 31 aircraft in 7 minutes, 40 seconds, for a launch interval of 14.8 seconds.

Forrestal being the eighth carrier I have been privileged to serve in and realizing that nothing can stave off the "Now see here" letters, I wish to make the added statement—I have never seen a better carrier.

V. J. LEMMON
CVG-8 Maintenance Officer

SIRS:

Enclosed find several black and white photos of my recently completed *Cougar*, registration number N 3456.

Three years ago I purchased for $6.00 a set of blueprints, persuaded my wife, Mary Lou, into becoming a full-fledged aviation partner and turned our five-room home into an aircraft factory. At the end of a year, we had welded the fuselage and completed one wing. Then we received our orders. A special trailer had to be constructed and we towed the partially completed *Cougar* from California to Florida.

Upon arriving in Pensacola, we immediately set up our factory again and continued our work. Construction continued despite growing complaints from our new neighbors about the 1000-watt beacon light which we used in our air-carport every night and about the noise when we turned up the engine in the driveway on week-ends. In time the little *Cougar* won them over too, and in May 1961, my wife and I had her tied down (the plane, not my wife) in the front yard, completed and ready to fly.

On the initial test flight, the little airplane cruised at 135 mph and used only five gallons of fuel per hour. I have now logged 20 hours on the airplane and am very pleased with its performance.

The ship weighs 813 pounds empty, has a 115-hp engine, a 20-foot wingspan and can

IN THREE YEARS, PUTEK BUILT A 'COUGAR'

carry two adults, plus 75 pounds of baggage. It has a range of 450 miles.

A few luxury items which have been incorporated are tinted glass, soundproofing, rugs, foam rubber seats, Omni, VHF transmitter and receiver, low frequency and broadcast bands, and adequate cockpit ventilation.

This new 1961 airplane has cost approximately $2100 for materials and, according to my wife, "$30,000 for labor."

Just recently, Mary Lou was asked if we have plans to put this aircraft into mass production. With a grin, she replied, "Oh yes, one every three years."

H.W. PUTEK, LT.
Saufley Field Fla.

■ PICTURE CREDITS

Naval Aviation News is indebted to the Smithsonian Institution for a picture of the AS-2; to Mr. Peter M. Bowers, for one of the XOK-1; and to Mr. V. J. Berinati, for a photo of the OJ-2. These pictures help to illustrate Hal Andrews' account of observer-scout types on pp. 12-17.

The USS *Saratoga* (CVA-60) sent in a picture of their flight deck parade at Mayport, Fla. We proudly display it on the back cover.

ABOUT THE AUTHORS

Elretta (Mrs. Earl) Sudsbury (*A-1 Flies Again*, pp. 20-25) is a familiar author to *Naval Aviation News* readers, for she has brought us many a short feature and kept us in the know on what is happening in the San Diego area, with particular reference to Overhaul and Repair, NAS NORTH ISLAND.

Early in WW II, she scored high in mechanical aptitude tests, but in actual practice was classified as one having "no aptitude for sheet metal work." Her real aptitude, from our editorial observation, is in "mental work," for she has given us such excellent features as *Four Decades of Service Marked* (September 1959) on the occasion of the Fortieth Anniversary of O&R NORTH ISLAND and *The Don Hall Story*, the story of the man who designed Lindbergh's plane, *The Spirit of St. Louis*, published in the *September* 1960 issue.

As a Management Analyst at O&R NORTH ISLAND, she has done outstanding work in her own field and has handled such special assignments as making a documentary movie for a 30-minute TV script. She wrote the narration and the shooting script and then assisted in directing, editing and arranging the recording of the sound track. Entitled "Through the Hangar Door," it describes the O&R operation using an R6D aircraft for the central character. A small but important bit of writing Mrs. Sudsbury did is the inscription for the Halsey Field plaque.

When we learned that the replica of the A-1 was being built and would fly in August at the meeting of the Institute of Aerospace Sciences in San Diego we knew exactly who we wanted to tell the story—Elretta Sudsbury. We asked, "Would you?" and the lady said, "Yes." So on page 20, read the details of how the plans were first discovered, then developed for the engineers and in a dramatic way, go back to the beginnings of Naval Aviation and learn how it was possible for the A-1 to fly again.

Lt. H.L. "Larry" Monroe (*Champions Make Grand Tour*, p. 6) got in on the ground floor of the VAH Bombardier/Navigator (B/N) field in the Navy. He first entered the program when in 1948, as a newly designated AT1, he was ordered to NOTS CHINA LAKE and Project *Atlas* the initial development of the family of B/N systems used in all subsequent Navy VAH aircraft.

Like many pioneers, Monroe can claim an impressive list of firsts—first Navy VAH B/N to fly the ASB-12 system in the A3J, first to drop a bomb with the system, and first to do Mach two plus. He also has the distinction of being the first B/N to be recommended for the Harmon Trophy (aviator) award, an honor shared with Cdr. Leroy A. Heath following their record-setting zoom to 91,450.8 feet in an A3J with a 1000 kg. payload, lifting the U.S. and Naval Aviation record some 24,350 feet higher than the previous Soviet record (NANews, Feb. '61).

Except for interludes of schooling—he graduated from OCS with distinction in June '55—Monroe's entire career in Naval Aviation has been interwoven with the evolution of Navy VAH B/N systems. He served in two A3J-1 squadrons, an A3D training unit, and has been R&D project officer on the system in the A3D, A3J and briefly for the A2F. He has orders to VAH-7, the first squadron scheduled to deploy with the A3J, to help with the fleet introduction of the ASB-12 B/N systems.

Lt. Monroe has served in most billets junior NAO's can expect. In addition to R&D work, he has been B/N of a VAH crew on a deployed carrier, fire-control maintenance officer and instructor both on the ground and in the air. Speaking from the authority of this experience he is of the opinion that "The NAO program offers one of the greatest opportunities for career satisfaction anywhere in Naval Aviation. It provides a chance to specialize and really get your teeth into something worthwhile."

'BIG BROTHER IS WATCHING YOU'

In George Orwell's famous novel, *1984*, 'Big Brother' was the dictator who by hidden TV cameras observed everyone's activities. On the 7th Fleet aircraft carrier Midway, Big Brother is far less ominous, for he is none other than the skipper, Capt. Robert G. Dosé. A 36″ wide-angle mirror mounted on the bridge next to the captain's chair gives him the equivalent of eyes in the back of his head; it presents an excellent view of landings on the aft end of the flight deck.


USS SARATOGA
CVA 60