NAVAL AVIATION NEWS

43rd Year of Publication

APRIL 1962

NavWeps No. 00-75R-3

■ COVER

Understandably, three of the four covers are devoted to Astronaut Glenn and events relating to the flight of Friendship 7. NANews is indebted to R. L. Knudsen, PHC, and to Ralph Gesell of NASA for timely assistance in providing these and the photographs to be found on pages 6-11.

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FORTY-THIRD YEAR OF PUBLICATION APRIL 1962

■ IN THIS ISSUE

■ THE STAFF

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

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NAVAL AVIATION NEWS

Carrier Assignments Made

Constellation Assigned to Pacific

The 75,000-ton guided missile-equipped attack aircraft carrier, USS *Constellation* (CVA-64) is to be assigned to the Pacific Fleet in July of this year. San Diego will be the designated home port.

Attack Carrier, USS *Lexington* (CVA-16), now a part of the Pacific Fleet and homeported at San Diego, will be assigned to the Atlantic Fleet later in the summer. The 38,000-ton *Lexington* will be redesignated a CVS and will relieve the USS *Antietam* (CVS-36) which is scheduled for inactivation.

New Feature for TACAN

Air-to-Air Capability to be Added

TACAN has proved itself to be one of the most useful navigation devices ever installed in an aircraft. One system (one instrument) tells the pilot his position by showing the bearing and distance to the TACAN station.

Now the system is slated to become even more useful. Thanks to a recently developed modification, ARN-21 TACAN sets will be able to give the distance to other aircraft.

With a modified TACAN set, the pilot can change from the normal mode of air-to-ground ranging to air-to-air ranging by flipping a switch. In the air-to-air-ranging mode, pilots of two planes will have a direct and continuous reading of the distance between them.

The air-to-air function was conceived and developed by NADC JOHNSVILLE. VX-3 flight-tested the prototype modifications developed by NADC and recommended the change be incorporated in all fleet ARN-21 TACAN sets.

Change kits are being manufactured by General Dynamics Electronics under a BUWEPS contract. Principal unit of the kit is a new, completely transistorized modulator which is to be substituted for the vacuum tube modulator in the airborne ARN-21 set.

Conversion with the modulator kit can be accomplished by squadrons in about three hours by an electronics technician.

The new transistorized modulator is expected to improve the reliability of the TACAN set and save weight and space owing to its solid-state circuits.

POINTING TOWARD *first fleet deliveries in July, five U.S. Navy P3V-1 Orion anti-submarine warfare planes prepare for test and evaluation flights at the Lockheed-California plant in Burbank. Six Orions will be assigned to NAS Patuxent River, Md., this month for 60 days of Navy pre-service testing. The 405-mph ASW aircraft will be manned by a crew of ten.*

Flatley Field Dedication

Olathe Plans Big Weekend in May

May 19 and 20 will be a major weekend for the citizens of the greater Kansas City area. Armed Forces Day, the dedication of Flatley Field, and the 20th Anniversary of NAS OLATHE are scheduled for those days.

The operations area of the air station will be dedicated Flatley Field in honor of the late VAdm. James H. Flatley, at one time commanding officer of NAS OLATHE. Adm. C.V. Ricketts, Vice Chief of Naval Operations, will make the official dedication and be guest of honor at the two-day affair. Units from the Air Force, Army and Marine Corps will also participate in observances.

Mrs. Flatley, a resident of Arlington, Va., and her four sons, James H., III, Patrick, Brian and David, plan to attend the ceremony. James is a Navy pilot, a graduate of the Naval Academy, and is now assigned to the Test Pilot Training School, Patuxent River, Md.

After WW II, NAS OLATHE became a Naval and Marine Air Reserve Training Center. In 1950, the 2472nd AF Reserve Training Command also became a tenant, making Olathe the first naval air station in the country to have joint service occupancy. In 1959, the Army activated headquarters for the 5th Missile Battalion on the station. Thus the station became home for the four services, Navy, Marine, USAF, and Army. Today about 50 military aircraft are regularly based aboard the Olathe, Kansas, air station.

VW-1 Commended by CNO

Outstanding Work in Typhoon Area

Airborne Early Warning Squadron One, operating from NAS AGANA, Guam, has been commended by Adm. George W. Anderson, Jr., CNO, for outstanding performance of duty during the 1961 typhoon season.

VW-1, commanded by Cdr. Howard B. Kenton, operates virtually in the birthplace of the majority of Pacific typhoons and tropical storms. In the 1961 season, VW-1 pilots and men flew their aircraft on 116 weather reconnaissance missions. In their *Warning Star* or WV-2, they flew into the "eye" of storms repeatedly, making 82 highly critical radar and penetration fixes. VW-1 worked in conjunction with Fleet Weather Central, Guam.

Adm. John H. Sides, Commander-in-Chief, U.S. Pacific Fleet, also commended VW-1 officers and men, particularly for their tracking of Typhoon *Nancy* which lashed Guam, Okinawa and the Japanese mainland in September 1961.

HT-8 Gets New Copter

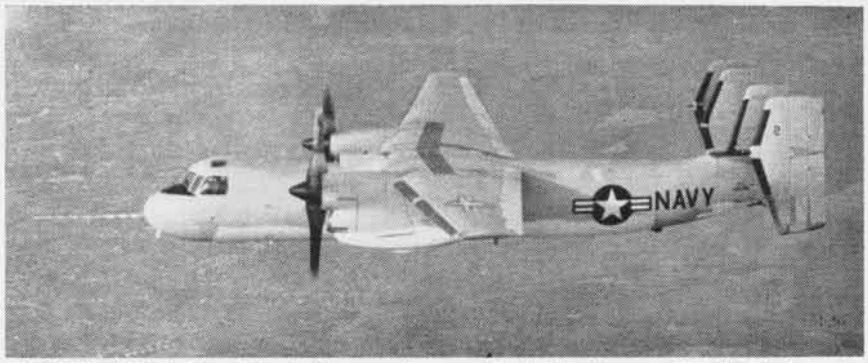
Sikorsky HSS-1 at Ellyson Field

Helicopter Training Squadron Eight, under the command of Cdr. W.G. Stearns, Jr., has added new type helicopters to its flight training program. The HSS-1 is now aboard, and the HUS-1 will appear in the very near future.

The HSS-1 and HUS-1 are single engine (reciprocating), single main rotor types, built by Sikorsky. The HSS-1 is an ASW helicopter, but the sonar gear will not be used in the flight training program at Ellyson Field. The HUS-1 is a troop carrier and is basically similar to the HSS-1. Both helicopters have Automatic Stabilization Equipment (ASE), and are suitable for night and instrument training.

The present ground syllabi at HT-8 will be expanded to provide for additional instruction in Engineering and Simulated Instruments (Link trainer). The flight syllabus will be increased from 60 to 80 hours, with all students receiving 30 hours in the primary trainer, HTL-6, then 50 hours in either HUP, HO4S, or HSS/HUS pipeline.

U.S. COAST GUARD *has selected the turbine-powered Sikorsky S-62 for search and rescue work. With a cruising speed of 110 mph, this amphibious "people plucker" can land on water, and it has operated in 8-10-foot waves.*



UNUSUAL SIGHT *in Long Island skies recently was this sleek-looking, multi-tailed, twin-turboprop airplane. Close look shows it to be a Grumman Hawkeye without its familiar rotodome. Grumman Engineering Corporation pilots were checking the aircraft's flight characteristics in this unencumbered form. Should the Hawkeyes ever require a new rotodome, it will be possible to ferry them stripped to a source of supply stocking the large, bulky domes.*

Wright to Have New Role

Ship Conversion is Assigned

The Puget Sound Naval Shipyard, Bremerton, Wash., has been assigned conversion of an auxiliary aircraft transport to a command ship.

The ship to be converted is the USS *Wright* (AVT-7), now in the Bremerton Reserve Fleet Group. The new command ship (CC-2) will satisfy an existing requirement for a ship having extensive operational capabilities in terms of command and control facilities, especially communications.

Following conversion, the *Wright* will be capable of world-wide communications coverage. An aircraft carrier hull was selected, because it is considered the most adaptable for the interior rearrangements necessary and for the installation of complex electronics and other equipment. Costs are being covered by reprogrammed funds from Fiscal Year 1962.

The conversion was announced by Secretary McNamara in his statement before the Senate Committee on Armed Services in January of this year.

Speed-up Class Graduates

Last Phase Done in Record Time

Another first has been established at the Naval Air Technical Training Center at Memphis, commanded by Capt. B.E. Close. The Avionics Fundamentals School, Class A, has graduated its first accelerated class. The speed-up program was instituted as a result of immediate manpower needs in fleet activities.

All members of the accelerated group were instructed at the same high level at a much faster pace than normal. In the first graduating class, the selected men and their instructors completed the last five-week phase in the record-breaking time of three weeks.

In the course, students are instructed in the fundamentals of basic aviation electronics. The curriculum includes D.C. and A.C. electricity fundamentals, radio, receiver theory, receiver trouble-shooting, safety precautions and an introduction to radar.

WHEN ONE *of the Gallagher brothers, Connell or Terrance, says, "That's an order, brother," no one can be sure which has seniority, so parallel are their records. They are both radar controllers in VAW-12 at NAS Quonset.*

GRAMPAW PETTIBONE

Yardarmed

An A4D pilot, plenty experienced, with 1475 jet hours and 176 day carrier landings, took off in his "Scooter" from an East Coast base for some practice night CCA approaches to a big carrier cruising offshore.

He hadn't made a night carrier landing in almost three years, so no traps were authorized and all approaches were to be waved off at a safe distance and altitude.

It was a clear night with visibility about seven miles, but no moon. One of those "blacker'n a closet with the door shut" nights.

Crossing the beach, he checked in with the ship and was given his marshall point, 25,000 feet at 40 miles. Two other A4D's were there ahead of him, and he departed after them at his scheduled time.

At the ten-mile gate, he was well to the right of the desired track, and CCA gave him a 90° turn to the left, then a 90° right and there was the carrier deck ahead! Moments later he called, "Meatball," and flew the glide slope. He could see two bright lights ahead and thought it "must be the other two A4D's climbing out."

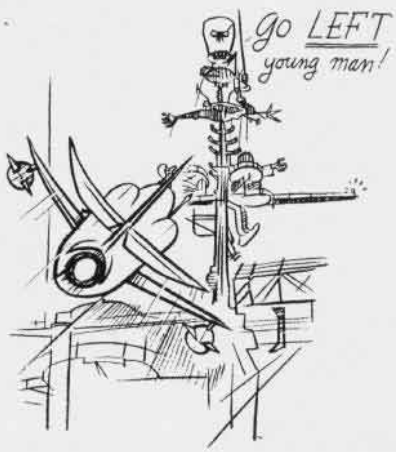
He continued his approach. The meatball was going low and his lineup wasn't good. He was drifting off to the right. Never could make it now. He was adding power just as the wave-off lights flashed.

Dropping his starboard wing, he commenced a gradual climbing turn to the RIGHT!

What looked like an aircraft's flashing white tail light was directly ahead and closing! He reduced power to stay behind and dropped the nose to stay slightly below the bogie. He saw he was over-running and banked hard right, climbing to pass level with whatever it was.

The ship's steel yardarm loomed up directly ahead. Before he could do anything, the A4D crashed into it in a 60° bank with a blinding roar! There were sparks and flashes of flame and white smoke on his right side! As

something smashed into his knee, he reached up, snatched the curtain and yanked! The RAPEC seat fired, and he felt a VERY comfortable acceleration, thinking "I'm out!" He felt himself doing what seemed like a cartwheel. Then the seat dropped away and he was hurtling toward the water head down! Just when it appeared as if he'd had it, the chute opened with a jolting shock and he seemed to stop in midair, then plunged into the water, feet first!



Popping to the surface, he got rid of his oxygen mask, inflated his Mark 3C, pulled off his soggy gloves and released both rocket-jet fasteners for the chute. After trying to move a little, he found both he and the seat were all tangled up in the shroud lines together. That HAD been a close one!

A little careful twisting and picking found him free and clear, and he lit off a night flare to let everyone know where he was. They were sure lookin'. The water was crisscrossed with searchlights, and the plane guard destroyer was coming with a bone in her teeth! He lit another flare to make sure they had him spotted and whistled through his teeth like crazy. The DD hove to and had a boat launched in a flash. A few minutes later he was in a hot shower aboard the destroyer and, except for some bruises, good as new.

Grampaw Pettibone says:

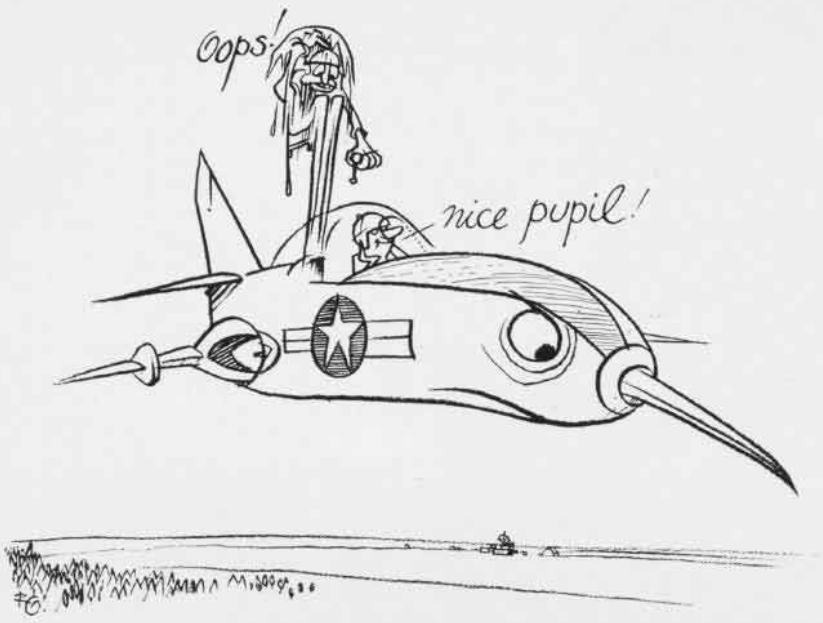
That yardarm is just as deadly today as it was 30 years ago. Carrier pilots since the first days of the business have learned it's GO LEFT or BLOOEY in a close-in wave-off. With the angled deck, it's most always better to go straight ahead—but NEVER RIGHT! This guy was as disoriented as they come and him an old hand at that!

If we're gonna prevent more of these KAMIKAZE runs, there better be some briefing on the lights a man can expect to see around the force at night. There's plenty of new lighting being used and as this yarn has proved—it can suck in an old hand too!

Oops!

An instrument instructor and his student, an experienced fighter pilot up for a card renewal, were just finishing up a hop in an F9F-8T. All that remained was a hooded low visibility approach and a course reversal to a landing. The student had made a good ADF penetration and went right down the runway downwind at 600 feet.

ILLUSTRATED BY Osborn



The instructor told him to do a 90-270 pattern and come out from under the hood at the 45° position as he eased to final approach for a landing.

The hooded pilot flew a good course reversal and, at the 45° position as he was turning to final heading, reached up to stow the instrument hood, using his right hand and keeping his left hand on the throttle. The first try or two had no effect, so he returned his hand to the stick, steadied the aircraft and reached again for a real good try!

The hood moved forward abruptly and he was ejected through the canopy! His hand had run through the loop of the ejection seat curtain as he attempted to stow the hood! As he was ejected, while firmly grasping the throttle in his left hand, he had cut the engine!

Meanwhile, the instructor up front, who had been monitoring the approach, heard a loud explosion from the aft end of the aircraft! Airspeed was unwinding past 110 knots, the altitude only 450 feet and the nose was dropping through! He added full throttle—no effect.

Making a fast decision, he called for the dual pilot to eject, glanced in the rear view mirror, couldn't see him and called "canopy opening." The canopy seemed open, so he rechecked the altimeter—350 feet—and pulled the curtain.

The ejection sequence worked smoothly and he gently floated down in a farmer's field, bruised a little in the touchdown but uninjured. The F9F plowed into a wooded area. The rear seat man busted a vertebra.

Grampaw Pettibone says:

Sonofagun! Ol' Gramps has no argument with either man in this case, for the rear seat man fell victim to a seemingly built-in booby trap. The instructor followed standard SOP after a low-altitude power loss—he got out.

We've flown over 400,000 flight hours in the F9F-8T and have had only two inadvertent ejections. Figurin' two hours per hop, 199,998 pilots opened the hood O.K. It may not be as much of a booby trap as some people think.

But, Skipper—

An HSS-2 pilot was busily engaged in a demonstration of the superb handling qualities of this new type of helicopter at a busy East Coast air station. Two veteran helo pilots were riding along as co-pilot and passenger, getting educated.

After a brief run around the field, the pilot demonstrated automatic approaches to a hover. After the third such approach, the acting co-pilot suggested landing the HSS-2, so that he and the passenger could switch seats. The pilot agreed and promptly set it down from the hover. There was a horrible scraping sound! Swiftly he came up on the collective, lifted it off, LOWERED THE WHEELS and relanded in the same spot! Only DELTA damage, but how DO you explain it to the OLD MAN?

Grampaw Pettibone says:

I knew it! I knew it! Soon as they put retractable gear on a helo, it was bound to happen! This ain't the first one either. This makes three of 'em already.

Kinda reminds me of days back in 1940 and '41 when the SNJ's went from stiff gear to retractable. Man, what a mess that was! We got a warning horn then to strike terror to the hearts of those who couldn't read (check-off lists, that is), but WHAT CAN YOU PUT ON A HELO? That big bellied bird must of looked like a pelican settin' it in on Perdido Bay after a hard day!

Memo from Gramps

It's kinda interesting to find out what the small fry destined to become the Naval Aviators of the future think about a career in the iron birds.

I'd like to reprint once more what one fifth-grader wrote!

'I want to be a pilot when I grow up because it's a fun job and easy to do.

'That's why there are so many pilots flying today. Pilots don't need much school; they just have to learn numbers so they can read instruments. I guess they should be able to read road maps so they can find their way if they are lost.

'Pilots should be brave so they won't be scared if it's foggy and they can't see or if a wing or motor falls off they should stay calm so they'll know what to do.

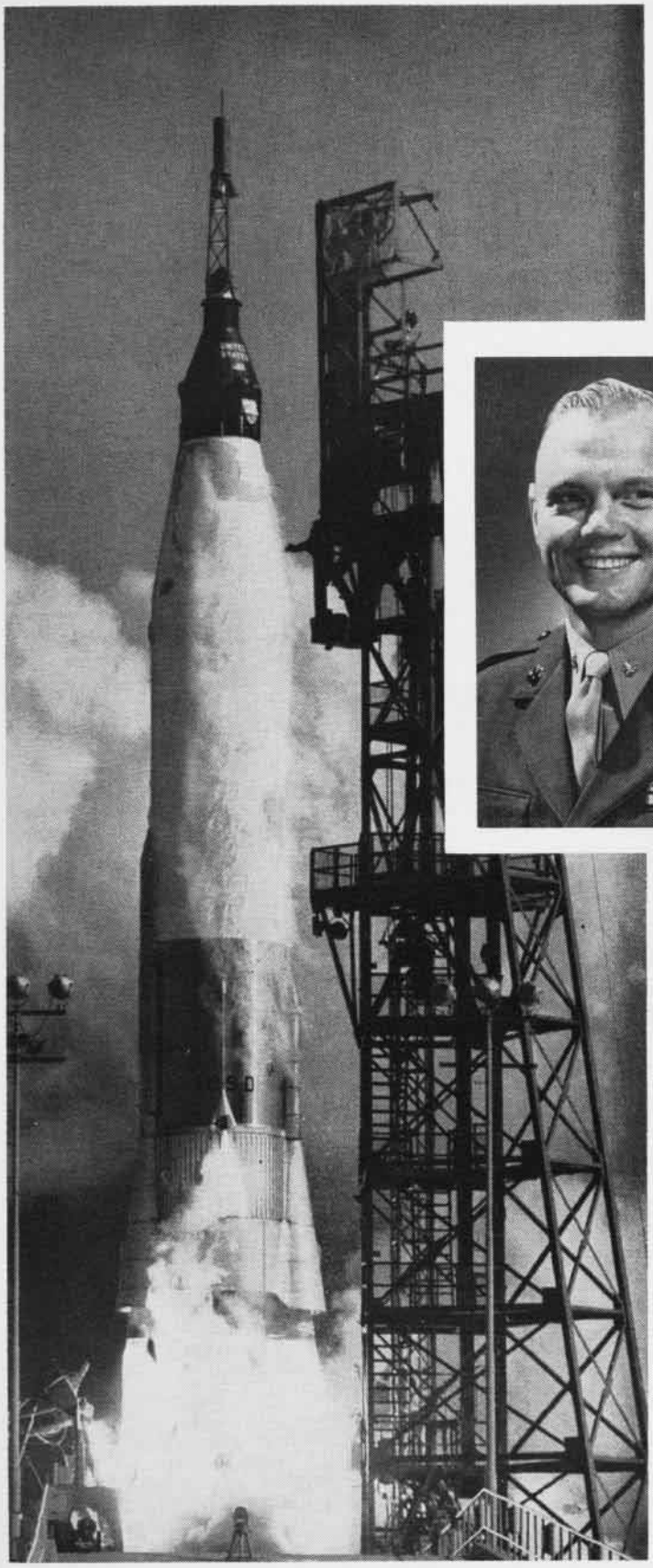
'Pilots should have good eyes to see through clouds and they can't be afraid of lightning or thunder because they're closer to them than we are.

'The salary pilots make is another thing I like. They make more money than they can spend. This is because most people think flying is dangerous except pilots don't because they know how easy it is.

'There isn't much I don't like, except girls like pilots and all the stewardesses want to marry pilots so they always have to chase them away so they won't bother them.

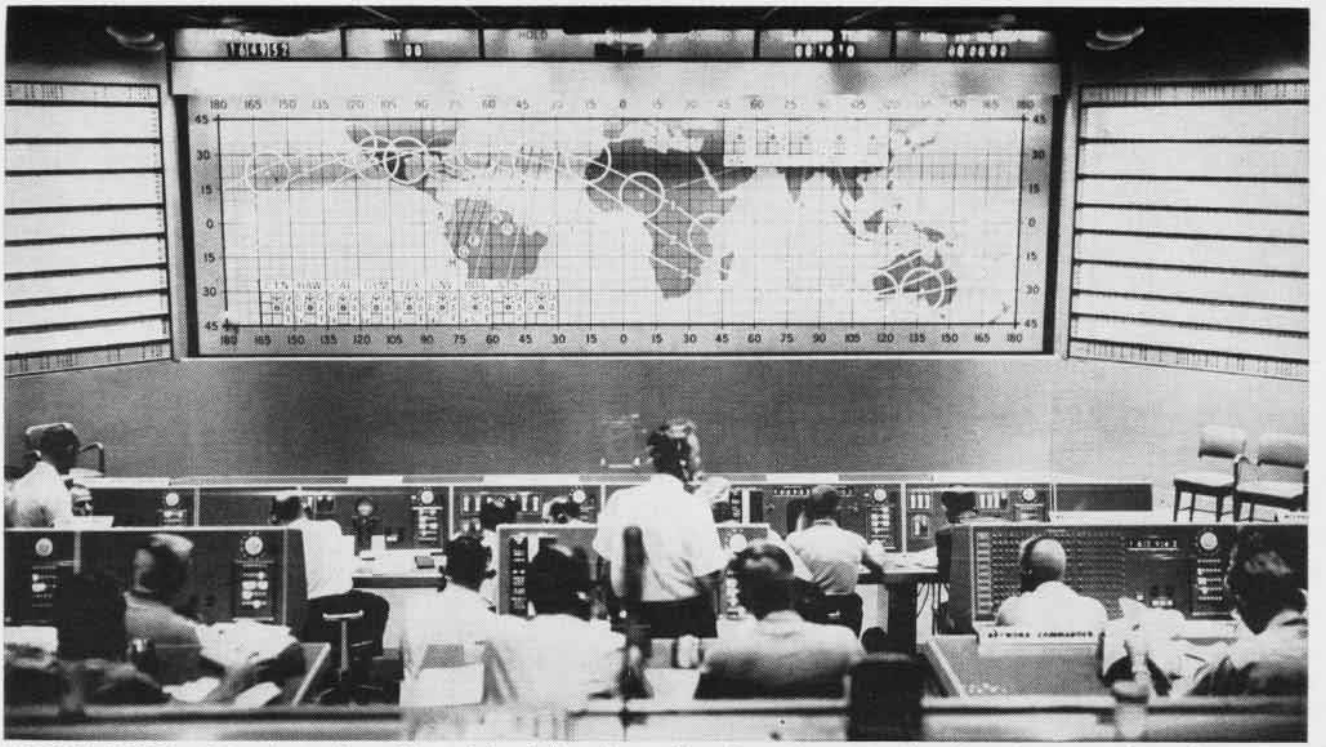
'I hope I don't get air sick because I get car sick and if I get air sick I couldn't be a pilot and then I'd have to go to work.'

We're gonna turn this youngster's name over to our NavCad recruiters for a check-up in 1972. He'd be a jewel to have around. ★★★



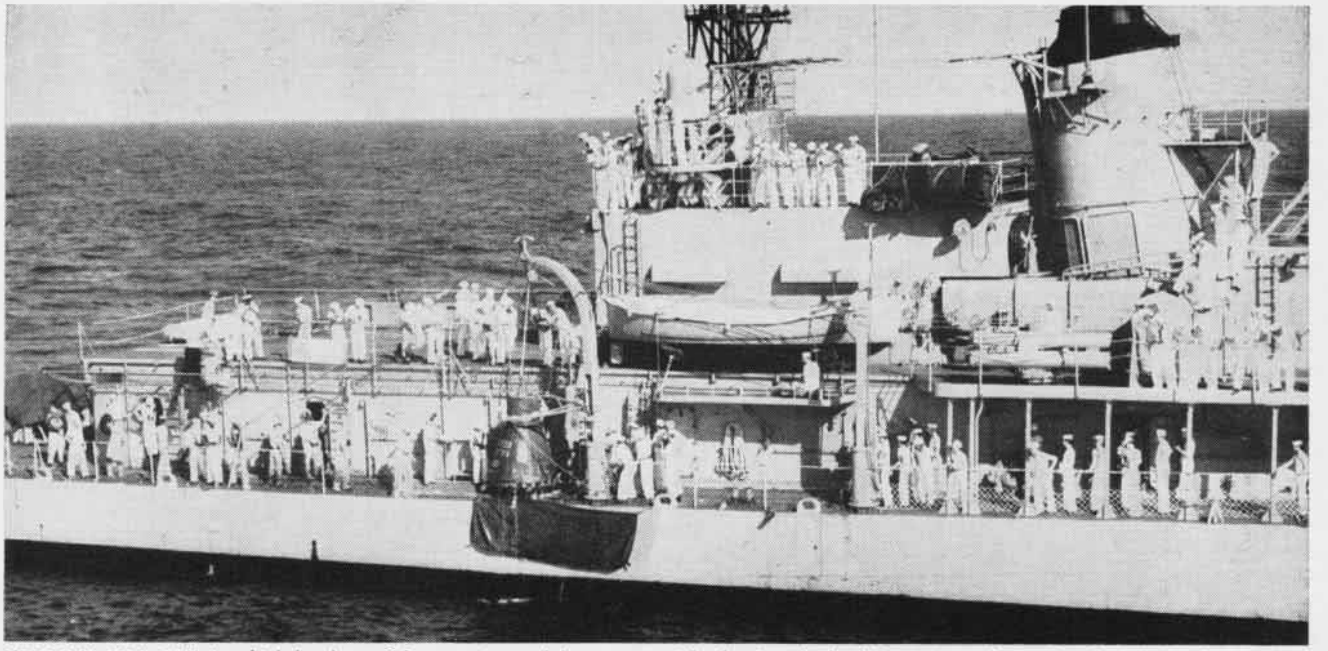
RIDING HIGH *on top of Mercury Atlas vehicle, Friendship 7 capsule heads up into unknown.*

GLENN'S 'GO' TO GLORY

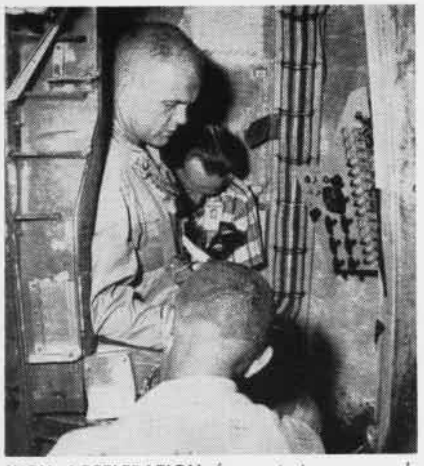


FOR FOUR HOURS *and 55 minutes the world watched and listened to flight's progress from Mercury control at Cape Canaveral. Capsule hit orbit peak at 162 miles, skimmed to 100 miles at lowest point. Period of each orbit was 88½ minutes; total distance, 83,450 miles.*

On July 16, 1957, Maj. John H. Glenn, Jr., USMC, piloted an F8U Crusader to a new transcontinental speed record—2,446 miles, Los Angeles to New York, in three hours, 22 minutes at 723 mph. Only 54 months later, LCol. Glenn manned a space capsule on a three-orbit mission—83,450 miles in four hours, 55 minutes, at speeds averaging 17,400 mph. Here are pictorial highlights of that great event.

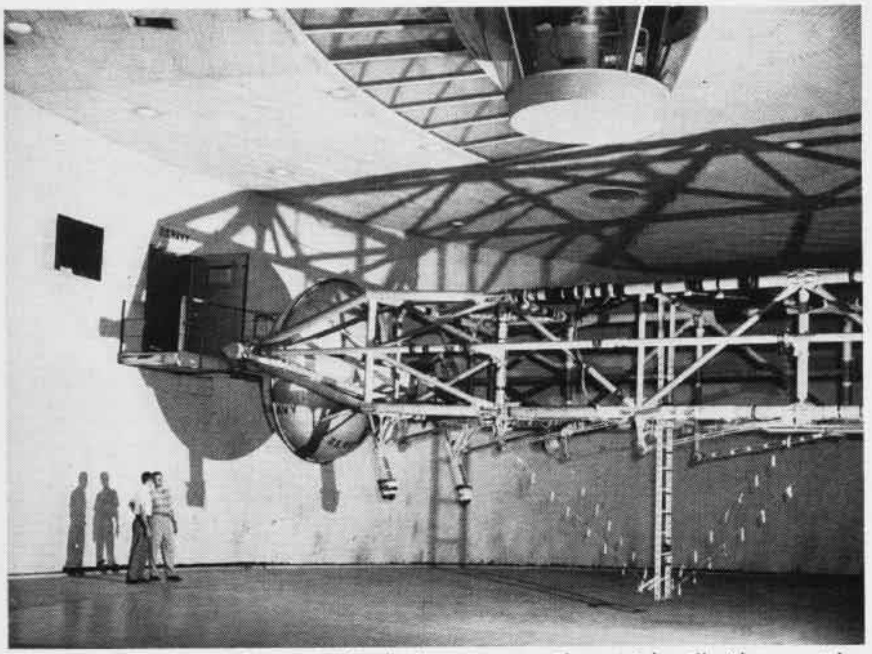


NEAR END OF A DAY *in which he observed four sunrises and four sunsets, Glenn was hauled aboard USS Noa 150 miles east of Grand Turk Island. Capsule landed in water almost five hours after lift-off, and was lifted aboard 21 minutes later. Glenn emerged to cheers of crew.*



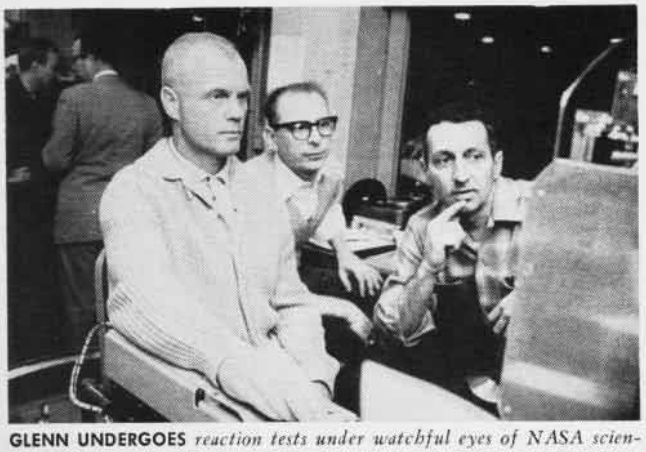
HIGH ACCELERATION *forces tests were made in centrifuge to check Glenn's G tolerance.*

Three years ago—on April 9, 1959—the National Aeronautics and Space Administration announced the selection of the seven men who had been chosen for astronaut training. In this elite group were four Naval Aviators (one a Marine) and three Air Force pilots. They had been selected from among hundreds of volunteers. Then began the training program, much of it conducted either at Langley NASA space center or at Naval Air Development Center, Johnsville, Pa. The Marine trainee, LCol. John H. Glenn, Jr., set up a personal training routine that trimmed almost 30 pounds from his weight and made frequent reconstruction of his capsule couch necessary. Following the initial sub-orbital flights of Cdr. Alan B. Shepard, USN, and Capt. Virgil I. Grissom, USAF, in mid-1961, NASA announced late in the year that LCol. Glenn had been selected for the first orbital mission.

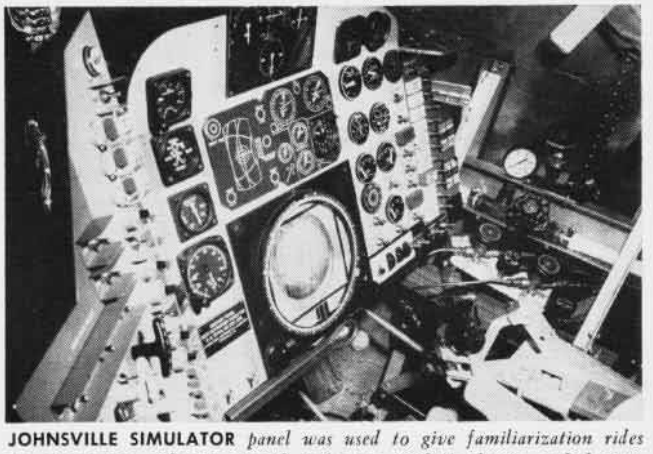


ASTRONAUTS SCHIRRA *and Cooper take a look at giant centrifuge at Johnsville. Photo was taken in 1959 as astronauts started space flight simulation tests as part of Mercury training program.*

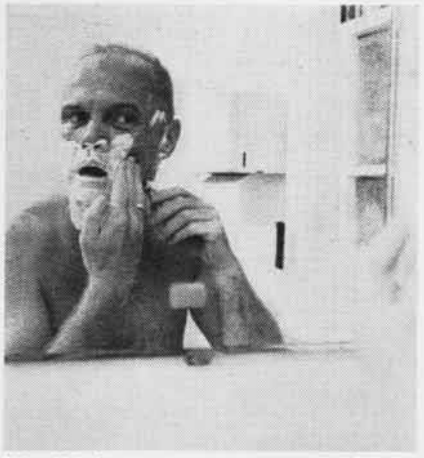
GLENN'S FAMILY *visits astronaut during a training period at the Johnsville centrifuge*



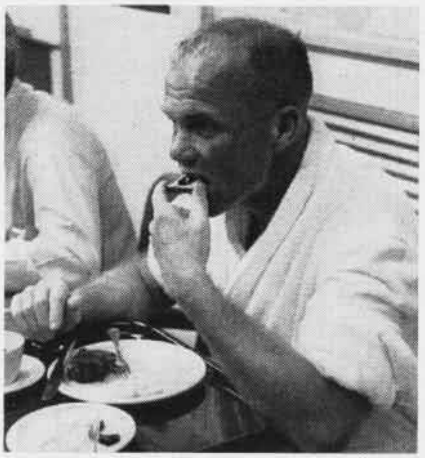
GLENN UNDERGOES *reaction tests under watchful eyes of NASA scientists at the Johnsville centrifuge installation during spring of 1961.*



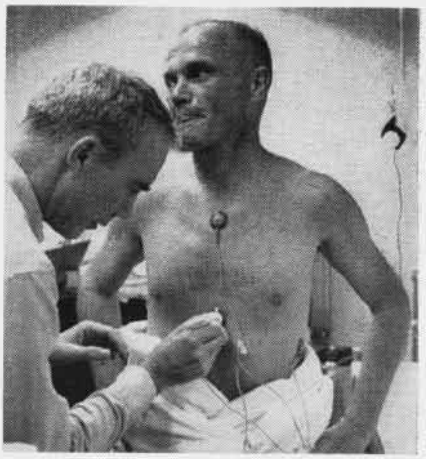
JOHNSVILLE SIMULATOR *panel was used to give familiarization rides to astronauts. Glenn's special task was cockpit design and layout.*



NO JOB *for a nervous astronaut. Glenn is caught as he shaved prior to orbit flight.*



WELL TANNED *astronaut eats an early but standard breakfast on morning of his launch.*



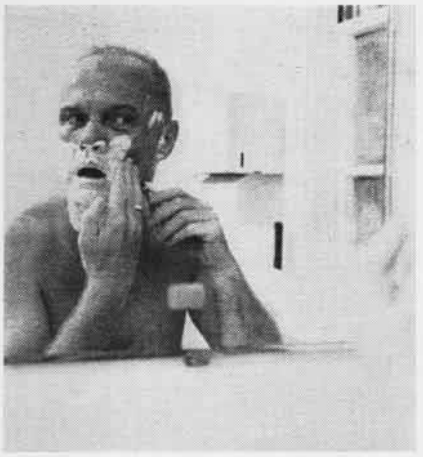
TELEMETRY SENSORS *are placed by NASA aeromedical officer before suiting-up process.*

A graduate of the Naval Test Pilot School at Patuxent (as are the three Navy members of the astronaut team), Glenn went about his astronaut training with the practiced methodicalness of a test pilot. Given weeks of advance notice of his selection for the orbital flight, Glenn used his time rehearsing, testing, checking eqiupment, continuing his rigorous physical training regime throughout. Instead of fretting about the delays forced by weather and technical problems, Glenn welcomed the extra time for 'honing the edge.' Time after time he ran through the cockpit checklist, practiced the routine set for the orbit flight, made dry runs on emergency procedures. When called for the pre-flight on the morning of February 20, Glenn was as ready as anyone could be for his trip into the unknown. An anxious America turned on TV and radio sets with crossed fingers.

TUCKING UNDERSUIT *into sock, Glenn begins intricate task of getting dressed for flight.*

STEP BY STEP *Glenn is readied for the countdown. Final adjustments are made to Glenn's suit by NASA flight equipment expert, Joe Schmitt.*

BEFORE GLENN *leaves the dressing room to enter the Mercury capsule, systems associated with the flight suit are given final check-outs.*



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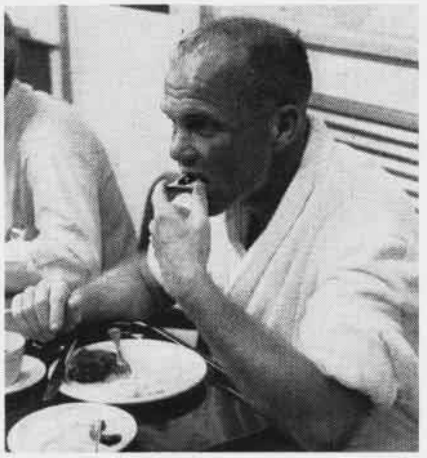

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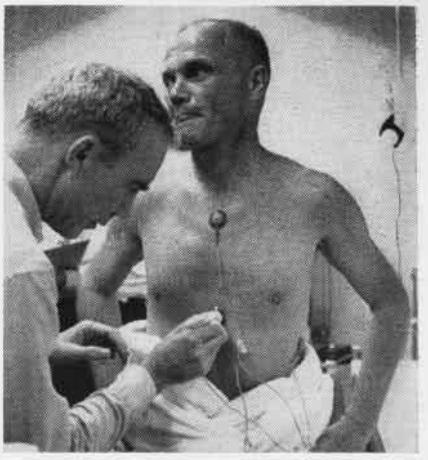

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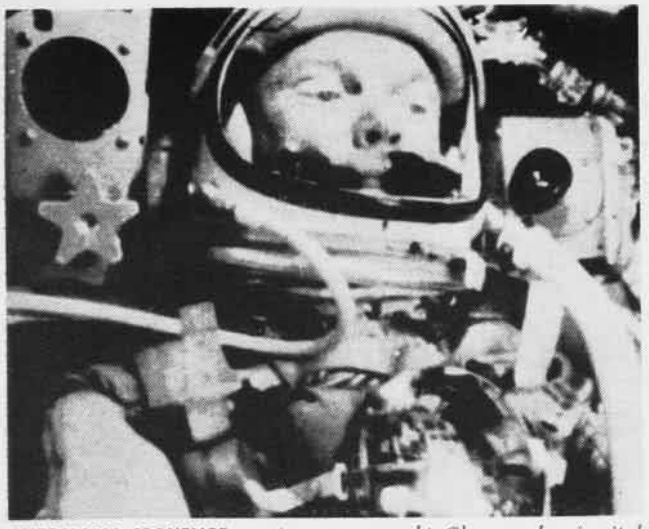


AUTOMATIC SEQUENCE *movie camera caught Glenn as he circuited earth at 17,400 mph in weightless condition. He suffered no ill effects.*

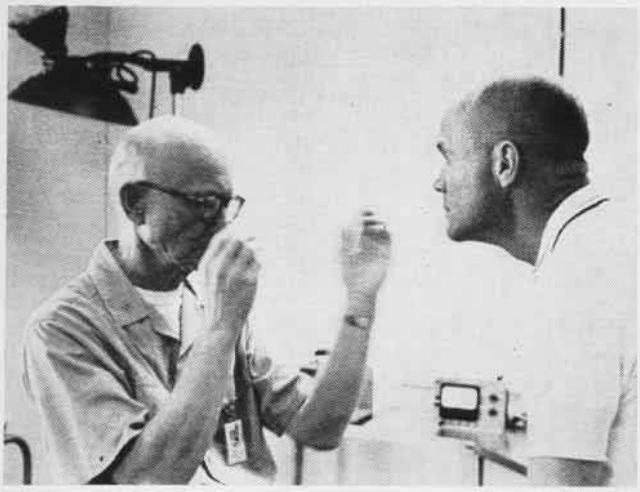
ZERO G STATE *was no hindrance to Glenn as he ate special food, controlled the capsule, worked out problems. "Wonderful," he said later.*

ANTENNA EXTENDED *and dyemarker flowing to mark spot, capsule awaits pick-up by Noa.*

Glenn later admitted he had moments of 'cautious apprehension' during the capsule's re-entry period when he mistakenly believed the unit's heat shield was disintegrating. The flight went almost as scheduled, however. Landing slightly short of its intended impact point, Friendship 7 was plucked from the Atlantic by the USS Noa mere minutes after landing. Glenn emerged in excellent condition, was transferred to the USS Randolph, then to Grand Turk Island, finally returned to Cape Canaveral for a tumultuous welcome by the President and the nation. Then commenced a whirl of ticker tape, TV spotlights, parades and press conferences, a familiar orbit pattern reserved for America's heroes. Next on the NASA program are more Mercury shots, including one-day orbits, followed by two-man Gemini flights in 1963. 'We have really hardly scratched the surface,' Astronaut Glenn said in the Cape Canaveral press conference.

WILLING HANDS *on USS Noa guide capsule during recovery from sea. Glenn later was transferred from Noa to the carrier, USS Randolph.*

GARBED IN NASA *flight suit, Glenn signs visitors' log on quarterdeck of Randolph under happy view of Navy, NASA recovery team officers.*



CAPT. ASHTON GRAYBIEL, *MC, USN, gives John Glenn a peripheral vision test during the 48-hour medical debriefing on Grand Turk Island.*

PRESIDENT KENNEDY *and Glenn start tour of Cape Canaveral space facilities following astronaut's return to earth and mainland.*

SHOWING POISE *as speaker, Glenn acknowledges receipt of NASA's highest award, bestowed by President. He passed credit for the achievement to all 18,000 members of the Mercury team: "I'm getting the attention for all the thousands who have worked on it."*

NAVY PILOTS SET FIVE RECORDS

FOUR NAVY test pilots, alternately piloting a single F4H *Phantom II*, laid claim to five new unofficial world time-to-climb records.

The F4H, flying out of NAS BRUNSWICK, Maine, between February 21 and March 3, claimed the international record for climbs to 3,000, 6,000, 9,000, 12,000, and 15,000 meters.

Announcement of the *Phantom II* marks came on March 6, a few days after the Air Force's T-38 trainer had set new records for the four lower altitudes at Edwards AF Base and Point Mugu, Calif. The T-38 did not claim a 15,000-meter record.

The five new F4H records and test pilots who set each record are:

Meters	*(Feet)*	*Seconds*	*Pilot*
3,000	(9,842.5):	34.523,	LCdr. Young
6,000	(19,685.0):	48.787,	Cdr. Longton
9,000	(29,527.5):	61.629,	LCol. McGraw
12,000	(39,370.0):	77.156,	LCol. McGraw
15,000	(49,212.5):	114.548,	LCdr. Nordberg

Comparative times for the T-38 are:

3,000 meters—35.62 seconds
6,000 meters—51.42 seconds
9,000 meters—64.76 seconds
12,000 meters—95.74 seconds

The Navy's tests were flown at Brunswick to take advantage of heavier cold air near sea level. All time-to-climb marks are made from a standing start. Sky conditions must be clear during the tests to permit accurate radar measurement of the flights.

All record tries were recorded by the National Aeronautic Association and will be filed with the *Federation Aeronautique Internationale*, the world governing body for aviation records.

The F4H soon will seek to exceed the world time-to-climb records for the 20,000, 25,000, and 30,000-meter altitudes. The test team was scheduled to move to Edwards AF Base to prepare for the attempts.

All four pilots are attached to the Flight Test Division, Naval Air Test Center, Patuxent River, Md. All are graduates of the Test Pilot School and have served almost three years with the test center. In the picture, top to bottom, are LCol. W.C. McGraw, Jr., USMC; Cdr. David M. Longton, LCdr. D.W. Nordberg, and LCdr. J. W. Young.

NAVY'S NEW FAST-CLIMB CHAMPIONS

LCol. Mcgraw, who set two of the records, reported that he made two separate flights to make the records. He was timed for both the 9,000 meter and 12,000-foot heights on both days. "As it turned out, I bettered only one altitude mark on the second try," he said.

LCdr. Nordberg, a commander selectee, said the four pilots used the same aircraft (production No. 108) in each of the attempts. Although some unnecessary radio gear had been removed to lighten the aircraft, a nose ballast of several hundred pounds was inserted to even up the balance of the aircraft.

The project is nicknamed *High Jump*. The record-smashing airplane was given the title of "Brunswick Boomer."

The five records, when certified by the FAI, will bring to ten the number of world records set by the F4H. These include straightaway speed, 100 and 500-kilometer closed-course records, altitude for sustained flight, the three kilometer mark and the transcontinental record.

(Editor's note: On March 5, 1962, the U.S. Air Force's B-58 *Hustler* laid unofficial claim to the cross-country record by flying west to east in two hours, 1 minute and 39.6 seconds. The F4H record is two hours, 48 minutes. The latter mark will stand until the B-58 mark is certified by the FAI.)

Memorial to Navy Explorer

New Zealand Honors RAdm. Byrd

On March 11 on Mount Victoria, one of the highest points overlooking Wellington, the capital of New Zealand, Prime Minister Keith Holyoake unveiled a memorial to the late RAdm. Richard E. Byrd.

The memorial is in the form of an Antarctic tent facing south toward Antarctica. It was erected by the people of New Zealand not only in recognition of Adm. Byrd's exploits in air exploration in Antarctica, but also in honor of one who promoted harmony beween New Zealand and the United States.

In designing the memorial, the architect incorporated sweeping wings to commemorate Adm. Byrd's role of explorer. A wall of Antarctic rock, sheltered by the wings, reminds onlookers of the mission which brought Adm. Byrd to New Zealand on five visits.

At the unveiling, speakers included the Leader of the Opposition, Mr. Walter Nash, a man who played a prominent part in the signing of the Antarctic Treaty, and the American Ambassador in New Zealand, Mr. Anthony B. Akers, who replied to Mr. Holyoake's speech. The memorial was dedicated by the chairman of the Combined Council of Churches, the Rev. W.E.D. Davies.

VAH-7 Takes A3J to Sea

Goes on Enterprise for Shakedown

Heavy Attack Squadron Seven took the A3J to sea late in February, when it went aboard the *Enterprise* for her shakedown cruise.

Although the twin-jet, Mach 2 *Vigilante* has completed carrier suitability tests and flown carrier qualifications aboard other carriers, the current operation is the first time an A3J squadron has operated as a unit with the Fleet.

First A3J aboard the Big E was flown by the team of Cdr. Louie B. Hoop, Jr., squadron C.O., and Ltjg. George Schneider, bombardier-navigator.

The team of Cdr. Leroy Heath and Lt. Larry Monroe brought the third *Vigilante* aboard. It was the team of Heath and Monroe who took the A3J to 91,450 ft. Dec. 13, 1960 for a new world's altitude record for planes with a 1000-kilogram payload.

TALLAHATCHIE COUNTY RECOMMISSIONED

NAVAL AIR FORCE, U.S. Atlantic Fleet, is ready to deliver on short notice an entire, air-conditioned "advance base on wheels" to any of its remotely-stationed 18 patrol squadrons. The new ship provides a vastly improved capability to support U.S. forces overseas.

While the USS *Tallahatchie County* (AVB-2) was being recommissioned at the Charleston Naval Shipyard on February 3, VAdm. Frank O'Beirne, ComNavAirLant, hailed the converted landing ship as part of a new concept in advanced base planning.

Tallahatchie County will serve the Atlantic Fleet to transport a cargo of 16 large trailer vans, crash equipment, fuel trucks, portable generators and other equipment "to wherever a runway exists or can be scraped out by a bulldozer," Adm. O'Beirne said.

By putting the units on wheels, the advanced base may be pulled quickly to a remote runway site from the *Tallahatchie County*. Operations of a P2V squadron may be started soon after arrival of the vans.

Trailers contain tools, test equipment and shop spaces for all but the heaviest maintenance and repair problems. Thousands of spare parts for aircraft are carried within the vans. An operations trailer, complete with control tower, communications and meteorological equipment, is included.

All units are air-conditioned to provide maximum efficiency and comfort in tropical areas.

Once an advanced base has been set up, the ship will provide supply support for the base, bringing in food, aviation fuel and ordnance.

When the usefulness of a base has been ended, the entire trailer van system may be moved to new areas quickly and simply.

Adm. O'Beirne compared the trailer system to the mobile homes established by thousands of Navy families.

"When the time comes for a move, these men simply lock the doors, disconnect the utilities and turn the trailer over to a contractor to haul to the new location," he declared.

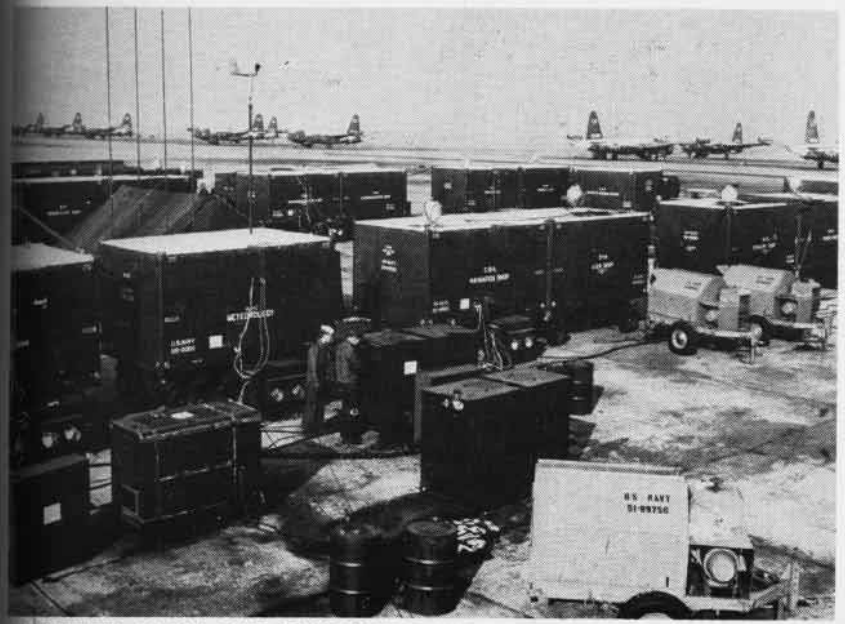
"This, in essence, was the solution the Navy had been seeking to the Advanced Aviation Base problem. The need was for lightweight, mobile logistic support equipment, transportable primarily by ship but also by air, train or truck if the need arose, to enable patrol aircraft to operate comfortably and economically from any undeveloped airport or airstrip in the world."

Advanced bases, heretofore, have consisted of bulkier, less-mobile quonset huts and tents.

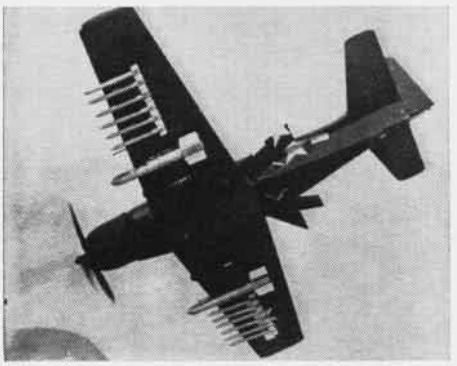
Tallahatchie County, in ten previous years of service with the Amphibious Forces, has steamed 200,000 miles in the Atlantic, Caribbean and Mediterranean areas.

Cdr. C.T. Babcock, a Naval Aviator, assumed command of the ship for her first tour of duty after recommissioning. *Tallahatchie County* is scheduled to replace the USS *Alameda County* in the Mediterranean as ComNavAirLant's support ship for deployed patrol squadrons in that area.

PROFILE OF ADVANCED AIR BASE SHIP FOR ATLANTIC FLEET IS SHOWN NEAR CHARLESTON



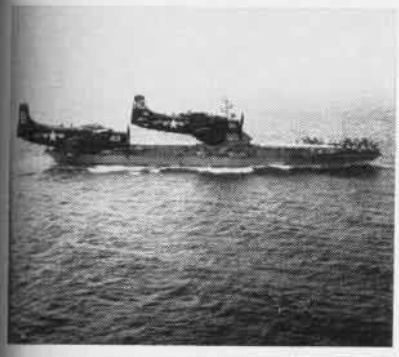
CONCENTRATED ON P2V RAMP AT NORFOLK, TRAILERS AND AIRCRAFT GEAR ARE CHECKED



ATTACK has been a major mission of Naval Aviation since early in its history. Continuing improvement of both the means and methods of performing this mission has been a constant effort. From this has come the AD's close support capability.

Among the many aircraft flown by Naval Aviators on attack operations, the Douglas AD *Skyraiders* have ranked with the best. As the XBT2D-1, shown in the center, it was initially a single-place dive bomber. Modifications have adapted the AD's to many roles. The early warning AD-5W above is typical of the more specialized versions. Of seven model numbers and various modification letters, a random sample is illustrated here.

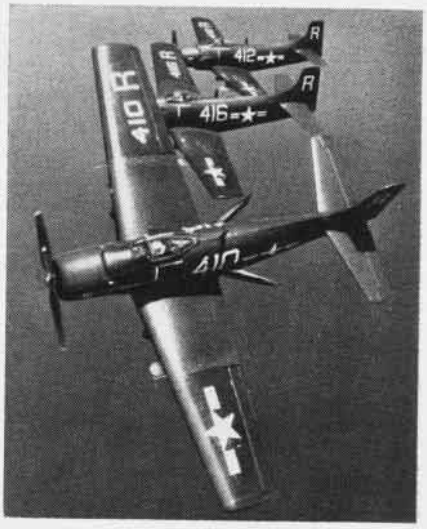
Left and down, XBT2D-1, XBT2D-1 with prop spinner, AD-2, AD-4L, AD-5S, AD-6. Right, same order, XAD-1W, XBT2D-1Q, AD-6, AD-4W, AD-5Q, AD-7. Same order, opposite: AD-6, AD-4W and -6, AD-5N's, AD-5 (COD), AD-5N AD-3's, AD-4NL, and AD-6 tanker.

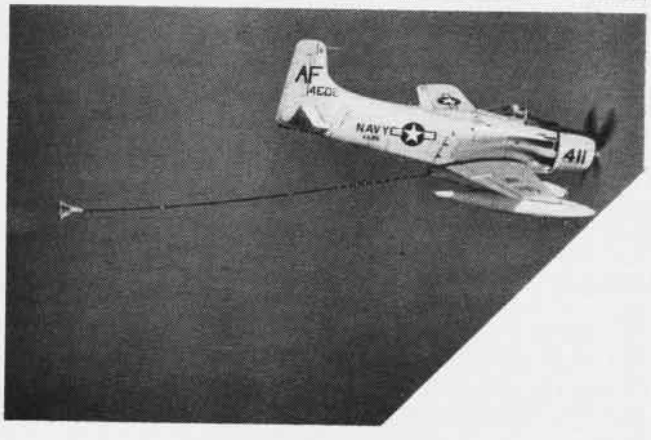


DOUGLAS began the design of the AD prototype in 1944 as a potential successor to the famed SBD *Dauntless*. In March 1945, the first airplane, labelled *Dauntless II*, flew. The last of the 3160 AD series airplanes, an AD-7, was delivered 12 years later. All of them were powered by a Wright R-3350 engine.

Special versions include countermeasures (Q), all-weather attack (N), anti-submarine (S), early warning (W), winterized for Korean conflict (L), and a photographic prototype (P).

Today, well into the jet age, the "Spads" of the Carrier Air Groups are still part of Navy's airpower. The capability of delivering large loads of conventional weapons, which earned them the title of "workhorse of Korea," combined with the versatility made possible by many special versions and their reliability as inflight refuellers have earned the AD's their important role in the United States Fleets.





Squadron Maintenance Chief

THE HUB IN A TURNING WHEEL

AIRPLANES ARE made up of thousands of pieces and parts, an amalgam of things mechanical, electrical and electronic. When a squadron is at sea, the job of 'worrying' aircraft into the air on a daily basis belongs to the Squadron Maintenance Chief. To the Chief, his squadron is his 'family' while at sea. Every mechanical failure is an 'illness' that needs an immediate 'cure.' Every day brings new problems, some not quickly solvable under the conditions imposed by long periods at sea away from supply sources. How a maintenance chief spends a day at sea is reported here by talented Ltjg. Zip Rousa, VA-85. (See p. 11, NANEWS December 1961, for his vivid account of a day of duty in an AD.) His subject for this report is D.T. Krupski, ADC, during a squadron tour aboard the USS Forrestal.—Editor

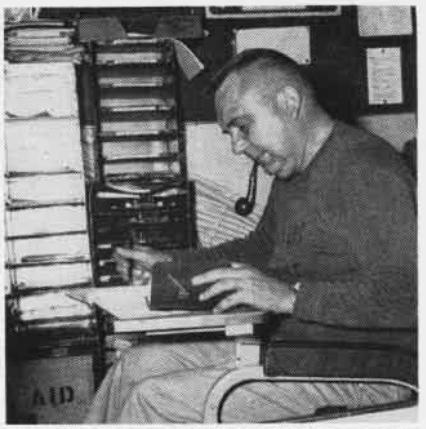
0530: He doesn't need an alarm clock. Twenty-three years of Navy routine have instilled an automatic waking mechanism. It seldom fails to say, 'O.K., let's go. It's time.'

He shaves, showers, pulls on khaki trousers, wriggles into a green flight deck jersey and within 15 minutes is in the CPO Mess devouring pancakes, sausage and coffee. He's mindful of the plumpish waistline, pats it embarrassingly, but is not sorry.

0600: The ready room is recovering from the lull of night and although the teletype is still quiet the duty officer is rearranging papers on his desk and a few stragglers from the night check crew linger at the maintenance table checking worksheets.

He packs and lights his pipe, settles into a seat near the table and slips a green, dog-eared notebook from a rear pocket. The duty officer hands him a copy of the flight schedule.

Let's see now—a four-plane launch at 0730, two more at 0900, another four-plane hop at 1030



CHIEF'S DAY STARTS IN THE READY ROOM

with a recovery from the first flight and—

He shakes his head, restrains the urge to curse and settles for a growl. When he growls he sets his jowled chin on his chest and lets his eyes bulge ever so slightly. He can look very mean.

The plastic status board over the table tells the story. Ten of the twelve planes are 'up,' the other two 'down,' AOCP (needing parts). A manifold pressure regulator and a hydraulic pump are needed from Naples. The parts have been ordered for COD (carrier on board delivery aircraft) and are expected soon. Two of the 'up' planes definitely will be flown into check. The schedule indicates 84 hours to be flown. It won't be easy.

0605: The night Chief, tired and unsmiling, comes in.

'Well, Ski,' he says, 'We've got the birds "up," except, of course, the AOCP's. 503 and 510 need three-and-a-half hours for a major check and flight deck has spotted them for the first launch. I don't think they'll be ready for the night hop, but from the look of the schedule, you're going to need them. You might be lucky.'

'Yeah,' he says quietly, writing in his notebook.

'Well, you've got it, Ski,' the Chief says. 'I'm turning in now.'

0615: The pilots wander into the ready room for their briefing, and the chief takes this as a signal to check on what's happening topside. He forsakes the aft escalator for the trudge up the ladders. 'I need the exercise,' he says.

He emerges from an island and sees the first light of the day. The Mediterranean dawn is hazy.

Peeping inside the flight deck control compartment, he scans the spotting board and sees the metal cutouts of four AD's lined in a pack near the stern. The flight deck control officer is studying the day's airplane schedule, an enormous sheet of paper upon which is listed every launch and recovery. The officer recognizes the Chief.

'Two COD's from Naples at 1030, Chief,' he says. 'Should get those AOCP's in.'

'Yessir,' replies the Chief, a trace of dubiousness in his voice. The COD's do their best, of course, but getting spare parts sometimes is a complex operation.

In some instances the Sixth Feet facilities in Naples, Port Lyautey or NAS Rota are unable to help, and stateside supply stations must be alerted. All this takes time. Nevertheless, every downed aircraft (AOCP or otherwise) on an attack carrier is one less weapon available to the allies in the event of a flare-up. Sometimes, people lose sight of this more than significant fact. Carrier operations consist of myriad units working together according to plan. Just as each of the instruments in an orchestra must be tuned, so must the units function as harmoniously as possible. The success of the operation hinges on the efforts of everyone aboard ship to keep the planes flying—all of them.

0645: He wanders between the AD's, watching with an experienced eye as the plane captains and trouble-shooters from other

By Ltjg. Zip Rousa, VA-85

maintenance shops pre-flight the planes. Occasionally, a minute hydraulic leak or loose exhaust clamp escapes the pilot's check. Very seldom do they escape the Chief's or maintenance crew's scrutiny.

0715: The pilots have manned and started their aircraft and the flight deck comes alive with the familiar fury of powerful engines and jet blasts. The AD pilots make their power check, and the Chief watches them for a signal.

Eventually, the four pilots jab a thumbs-up signal to the concerned observers. Moments later the aircraft are launched.

0905: The 0900 launch is compete and the Chief mentally records some data. When 503 and 510 recover at 1000, they'll have to be shuttled to the hangar deck. He double-checks with flight deck control and the CAG maintenance officer for the necessary spaces and receives an honest promise: 'If we can, we'll get your planes down there.'

0945: Within the past five hours he has climbed and descended over 40 ladders, preoccupied and stopping occasionally to scribble notes in his green book. He senses the oncoming fatigue, but keeps busy with stops at all the shops from Power Plants to Ordnance, Avionics to Airframes

Invariably, each shop has its problems, gripes and ideas. He listens to them all and makes a decision. He imagines himself the center of a wagon wheel in direct and responsible contact with all spokes. It's difficult to keep the wheel running and no one man does it alone. But somehow the wheel does continue to turn.

1100: 503 and 510 have been brought down to the hangar deck and the mechs are already stripping cowling from the engine section. The COD's have been emptied of their cargo, and the Chief hovers expectantly over the gear as it is sifted and logged by the ship's supply people. He sees two parts cans and knows what they are. Minutes later, the metal-benders from Airframes and the Power Plants are making ready to insert the hydraulic pump and the manifold pressure regulator into the AOCP aircraft. Turn-ups will be required on these planes, and the Chief returns to flight deck control.

'Our parts came in,' he says, 'We should be ready for turn-ups about 1700.'

The CAG maintenance officer acknowledges with a nod, but he's busy with the flight deck officer, re-spotting the deck.

'We'd like to get them checked out by then. We'll need them for the night launch.'

'O.K., Chief, they're by the island. Go ahead and run them through during the 1700 launch.'

1200: The Chief is hungry and heads for the mess. He doesn't make it. A squadron avionics man stops him in the passageway.

'Hey, Chief,' he calls. '508 is coming in with a sump light. He's overhead right now.'

'O.K.,' he sighs. 'I guess I'm not hungry anyway.'

1345: The mechanics are bolting down the wrap cowling on 508 which has been parked abeam the island with the other AD's. The sump-light had been caused by a short circuit in the wiring system, and an engine change won't be needed.

1700: The day wears on. So far the squadron hasn't missed a sortie, but two planes have returned with radio gripes and will definitely be excluded from the night hop. 503 and 510 are coming along and should be ready by morning if the men can be kept on them in sufficient number. He's back at the maintenance table in the ready room, feeling the weight of the day's work settle upon his shoulders like a bag of sand. He cross-checks between the flight schedule and his green book. Four planes remain airborne and will recover at 1830, but the night launch goes at that time. So, as it stands, he'll have only two planes unless the AOCP's come 'up.'

TALK WITH CAG MAINTENANCE OFFICER

Consultation between himself and the Maintenance Officer or the Skipper has been limited to one or two-paragraph conversations and frequent relays via the Duty Officer. And since the maintenance Officer has had one hop and is scheduled to lead the night flight, he won't catch him now. If possible, he'll at least keep the C.O. informed.

1720: The ear-crushing sound of engines meets him as he reaches the flight deck. He adjusts his goggles and helmet and winds his way to the pack of AD's near the island. The AOCP aircraft have been turned up and checked out successfully. He stands by the aircraft until the last plane is launched and then slips into flight deck control.

'You can spot those two AD's now. We'll have four for the night launch.'

1800: He's completely fatigued, but the roast beef and baked potatoes go down well. He loads his pipe on the walk to the ready room. He makes a few tallies in his book then adds up the flight hours. They'll make 84 hours all right, he confides to himself.

The night-check Chief in a freshly laundered uniform sits next to him.

'Well, Ski, how did it go?'

'The same,' he answers quietly.

They exchange a few more details and the Chief rises to leave. '503 and 510 should be "up" by morning,' he says. 'And we better start thinking about 505. It's a high time engine and will need a change; probably next week at the rate we're flying.'

'O.K., Ski, see you tomorrow. Going to watch a movie tonight?'

'Nope, don't think so,' says the Chief. 'I guess I'll hit the sack.'

IN FOREIGN SKIES

Uruguayan Types Note of Thanks

At NAS CORPUS CHRISTI, Ltjg. Walter L. March of the Uruguayan Navy walked into the station newspaper office and in excellent, but foreign accented English, said he would like to use a typewriter. This is what he wrote:

"This week marks the end of my present tour of duty with the United States Navy. The 'Wings of Gold' come at the end of almost two years of U.S. Navy flight training.

"As I return to my own country once more, I would like to express my deep gratitude to all the Navy personnel who have made my training both successful and enjoyable. I would also like to thank all those other Americans who have made my stay in your country a pleasure. . . . I shall always wear the Navy wings with great pride. . . ."

Ltjg. March is a 1956 graduate of the Uruguayan Naval Academy. Since arriving in the United States in April 1960, he has attended both Intelligence and English language schools in Washington, D.C., and has trained at NAS SAUFLEY FIELD, NAS WHITING FIELD, and NAS CORPUS CHRISTI.

Brazilian Admiral at Whidbey

In his tour of U.S. Naval installations, Fleet Admiral Ary dos Santos Rongel, Chief of Naval General Staff of Brazil, visited NAS WHIDBEY. He was greeted upon his arrival by RAdm. William A. Stuart, Commander, Fleet Air Whidbey; Capt. Thomas Robinson, Chief of Staff ComFairWhidbey; and Capt. Renfro Turner, Jr., C.O. of NAS WHIDBEY. FAdm. Rongel was briefed on the mission of Fleet Air Whidbey, the station and facilities.

FAdm. Rongel witnessed a 4½-minute ready alert launch of a VP-2 *Neptune* and also visited the *Marlin* patrol squadron, VP-47, and Fleet Airborne Electronics Training Unit, Pacific, Detachment Two. The admiral commented on the advanced state of survival training given by the unit and praised its quality.

RADM. STUART EXPLAINS NAVY SONOBUOY

This is the third visit to the U.S. for Admiral Rongel. His first was in 1926; his second, in 1946.

Germans Entertained by VS-24

In Hamburg, Air Anti-Submarine Squadron 24 entertained Germany's Fifth Company of the First Air Regiment aboard the USS *Essex* (CVS-9).

The Luftwaffen Regiment, a training unit designed to prepare cadets for commissioning as officers in the German Air Force, is located at Pinneberg near Hamburg. The unit was given a short briefing on ASW by Cdr. John L. Kent, VS-24 Executive Officer. A guided tour of the *Essex* included a display of the S2F-1 *Tracker*, the type aircraft flown by VS-24.

The visit of the Luftwaffen unit was part of VS-24's People-to-People Program intended to promote and maintain good will between the United States and its allies. The squadron is commanded by Cdr. M.R. Rush. The USS *Essex* was on a North Atlantic cruise at the time.

American and French Exercise

French and American naval forces in the Mediterranean successfully completed a large-scale bilateral training exercise in February. More than 50 ships and over 250 aircraft took part.

Units involved came from the French Mediterranean Squadron, commanded by VAdm. Andre Jubelin, and the U.S. Sixth Fleet, commanded by VAdm. David L. McDonald. The French Air Force also took an active part in the exercise nicknamed *Big Game*.

Bad weather involving strong winds and high seas throughout the period added unpredictable situations that required unit commanders to improvise in a manner which added realism to the training maneuvers.

The joint exercise began with an air defense phase conducted by aircraft from the Sixth Fleet carriers, *Saratoga* and *Intrepid*, and the French carrier, *Lafayette*. Simulated attacks were made on the fleet units by French naval aircraft launched from the *Lafayette* and land-based fighters of the French Air Force. Concurrently, the French carrier, *Clemenceau*, in company with a mixed squadron of French and U.S. destroyers, conducted ASW tactics against eight French and U.S. submarines located in the exercise area centered in the western Mediterranean.

Later, naval strikes were made against predetermined land targets in France with French Air Force opposition. The exercise also included a convoyed movement of an amphibious task force and terminated with submarine-versus-submarine training.

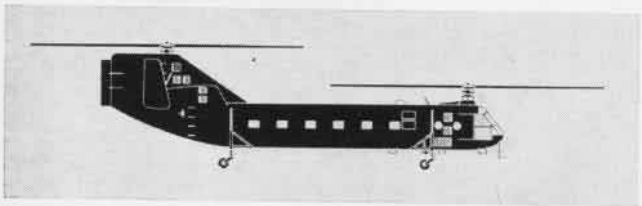
Canadian Squadron at Cecil Field

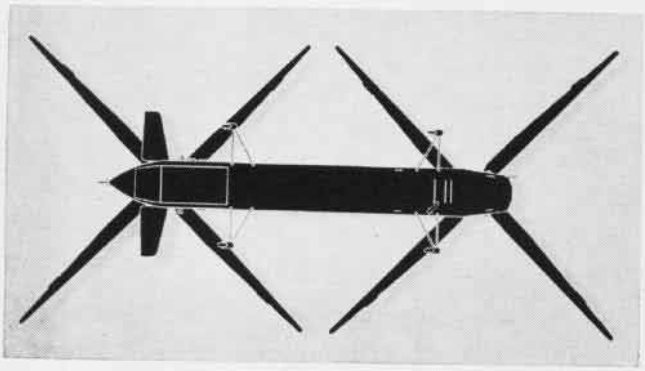
Fighter Squadron 870 of the Royal Canadian Navy, homebased at RCNAS SHEARWATER, Nova Scotia, arrived at NAS CECIL FIELD recently for five weeks of concentrated training.

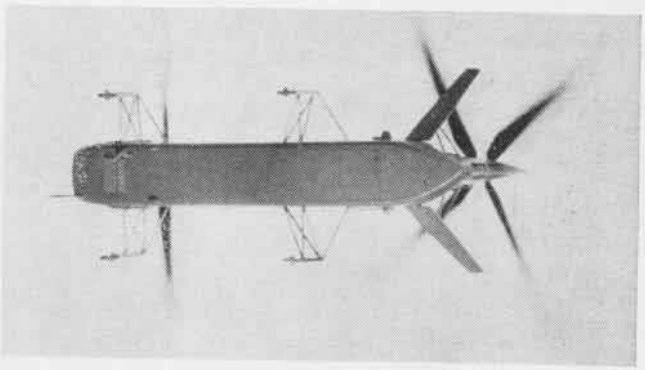
The first half of some 120 personnel touched down in a C-130B *Hercules* transport, followed a little later by the unit's dozen F2H-3 *Banshees*. Finally, the remaining personnel, along with records and assorted equipment, arrived in three C-119 *Packet* transports.

The Canadian squadron, based near Halifax, has the dual mission of all-weather intercept and close air support. The unit came to the Jacksonville area to take advantage of the sunny skies that would save the pilots as much as one month's time in completing their training.

VF-870 operated out of the hangar which had just been vacated by VF-13 which left aboard the USS *Shangri-La* (CVA-38) for the Mediterranean.







USSR'S DUAL-ROTOR HELICOPTER

This Yakovlev-designed helicopter, the 'Horse,' has several salient features: a long rectangular fuselage with a transparent nose and a square, upswept after-section, fixed four-wheeled landing gear, and two rotors. A crew of three or four is carried, and up to 40 passengers can be accommodated. A 'Horse' set two world records on December 17, 1955 when it carried a load of 4009 pounds to a height of 16,673 feet and a load of 8818 pounds to 6562 feet.

ALTIMETER READING ON MT. DARWIN, ANTARCTICA, IS VIEWED BY TOM J. TAYLOR, PH3

JAY R. BERRYMAN, PH1, SHOOTS OPERATIONAL PICTURE OF ICE RUNWAY CONSTRUCTION

DOUBLE IMAGE CREATES WEIRD EFFECT IN

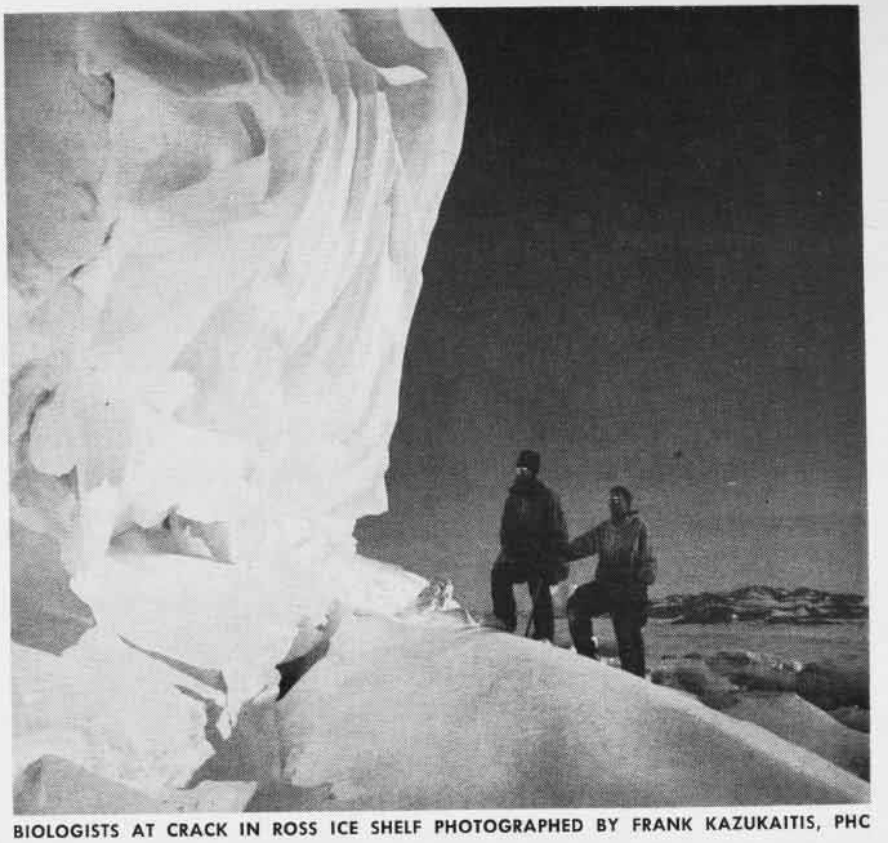
PHALANX OF PHOTOG

Since Operation Deep Freeze began in photographers annually to the Anta ing, frequently uncomfortable, and i of their work are often reflected i though tangible, result viewed by th work is seen by few eyes—photog aerial photographs, geologists who terrain, planners who view progres study penguin rookeries: the list is l tached to Antarctic operations, few feelings when gloveless fingers stiffe pounds heavier at South Pole's lung 12-, 14- or 16-hours long are repea gency of an operation during whic plished in a matter of months. The D to Air Development Squadron Six port Force, Antarctica; to Antarcti

OF PHOTOGRAPHERS AT McMURDO SOUND

PHENOMENAL APHERS

5, the U.S. Navy has sent teams of continent. Their jobs are demand- ch instance, challenging. The results e nation's press. This is a small, erage Navyman. But the bulk of their metists who pore over trimetragon ct clews in the coloring of rugged building programs, biologists who n. Though there is much glamor at- tographers appreciate such esthetic the cold. Camera equipment seems 20 ing 10,000-foot altitude. Workdays day after day—pressed by the ur- arly a year's work must be accom- Freeze photographers are assigned 6); to Commander, U.S. Navy Sup- port Activities; or to various vessels.



BIOLOGISTS AT CRACK IN ROSS ICE SHELF PHOTOGRAPHED BY FRANK KAZUKAITIS, PHC

PHOTOGRAPHER STRESSES NAVAL AIR SUPPORT OF SCIENTISTS DURING 'DEEP FREEZE'

AVIATION figures very prominently in Antarctic operations. VX-6 aircraft —flown and crewed by Navymen and Marines—provide airlift capability for Task Force 43. Ship-based helicopters lift from landing platforms in Navy and Coast Guard ice-breakers in which are based air detachments from Helicopter Utility Squadrons 2 and 4 out of NAS Lakehurst. Ships' photographers frequently fly for aerial views of ice fields. For the past three years, this task force of ships and planes has been commanded by RAdm. David M. Tyree, supporting scientific studies conducted by experts in the U.S. Antarctic Research Program under grants by the National Science Foundation. A major mission of Deep Freeze is aerial 'photomapping,' normally accomplished in VX-6 P2V Neptunes. More travelled than the average Navyman in Antarctica, photographers also fly in helicopters, single-engine deHavilland Otters, R4D Skytrains, an R5D Skymaster, an R7V Super Constellation, or C-130BL Hercules—depending on the mission. So far, the U.S. Board on Geographic Names has honored three Navy photographers by naming Antarctic features after them.

AERIAL VIEW OF NAVAL AIR FACILITY ON THE BAY ICE OF McMURDO SOUND WAS PHOTOGRAPHED BY EUGENE B. BARFIELD, PH2, IN 1960

VX-6 HERCULES AIRCRAFT TRANSPORTS RADM. DAVID M. TYREE FROM ICE STRIP TO NEW ZEALAND FOR CONFERENCES IN THAT COUNTRY

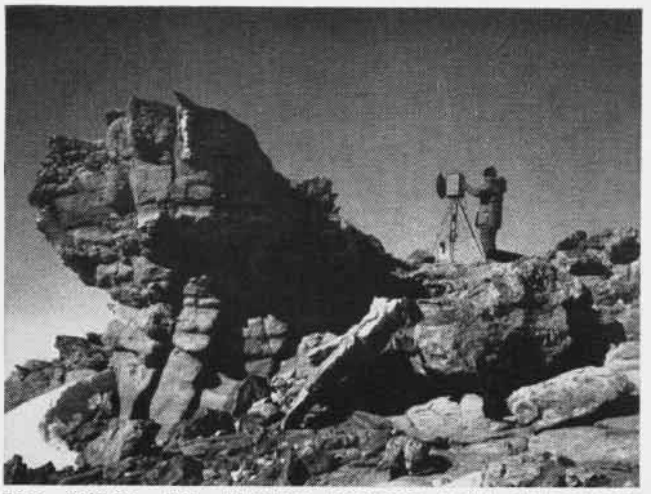
LOUIS R. MATHIS, PH1, TAKES DRAMATIC VIEW OF HELICOPTER AT BEARDMORE GLACIER

AGAIN KAZUKAITIS CAPTURES WELL COMPOSED VIEW OF USARPS

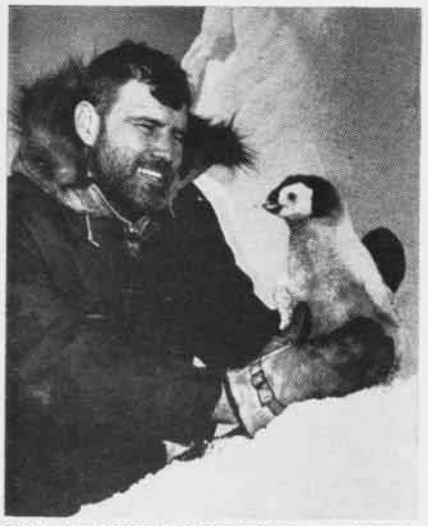
ACTIVITIES ON THE PARKING APRON ARE SHOWN BY A VX-6 PH

SCIENCE is the main reason why Naval personnel are assigned annually to the south polar regions. The Navymen's dedicated support permits civilian experts to do work that would not otherwise be possible, feasible, or economical. The 5.5 million square mile continent provides a unique laboratory for the world's scientists. Results of their work are exchanged freely by experts of all nations participating in the program.

SOUTH POLE'S SCIENTIFIC LEADER STUDIES INSTRUMENT DATA



TOM TAYLOR, PH3, PICTURES SCIENTIST WITH TELUROMETER



VX-6 MAN AND PENGUIN BY TF-43 PHOTOG

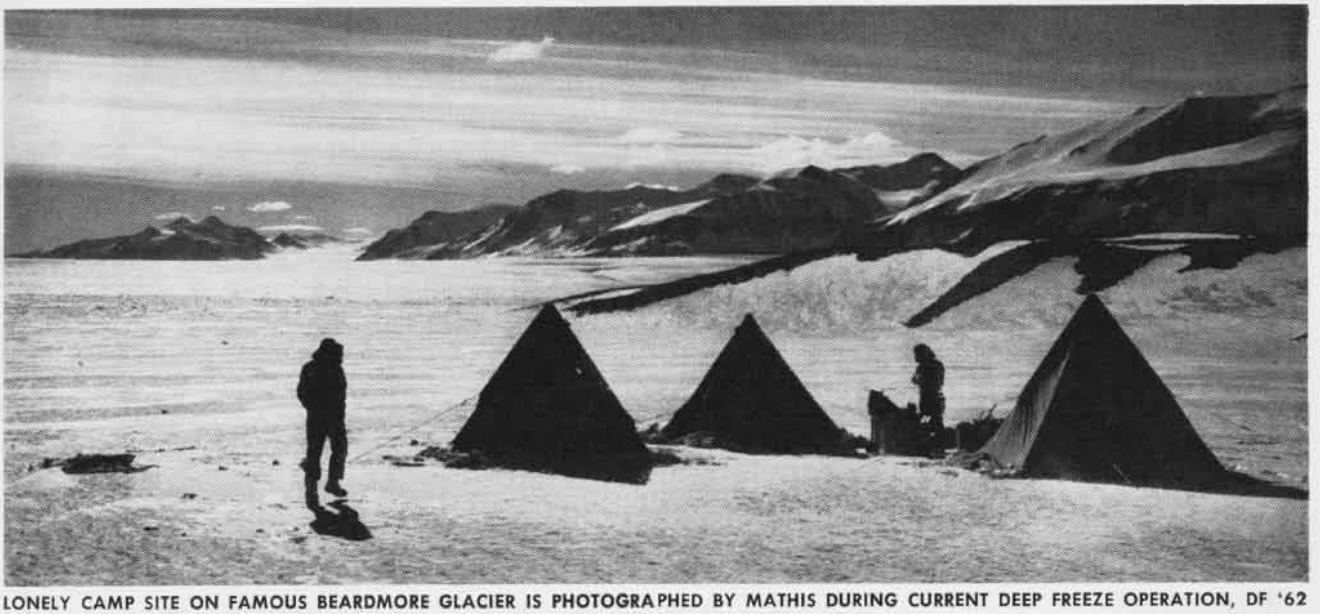
PAUL PAXTON, PH3, SHOWS GROUND WORK

BIOLOGIST IS SILHOUETTED BY KAZUKAITIS

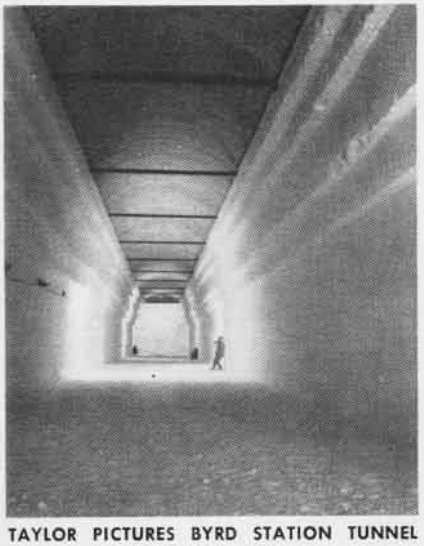
ADVENTURE seems to be a major inducement for volunteers in Deep Freeze. Certainly, the operation's brief history tends to bear this out. The first plane to land at the South Pole, for instance, was a VX-6 aircraft crewed by VX-6 personnel. Each year, the scope of the operation widens as new requirements are presented by the scientists. Each year, the Antarctic continent becomes 'smaller' as more and more of it is systematically mapped by trimetragon photography. Each year, over-snow traverse parties hazard the unknown and accurately fix Antarctic features encountered. VX-6 aircraft support these traverses. Experts in geophysics, glaciology and geology move by plane from place to place, making it possible for the scientists to accomplish far more research than would be possible using only over-land vehicles.

AUSTERE BEAUTY OF HALLETT STATION IN KAZUKAITIS PHOTO

AERIAL OF THE CANADA GLACIER IS SHOT BY R. L. BOONE, PH1

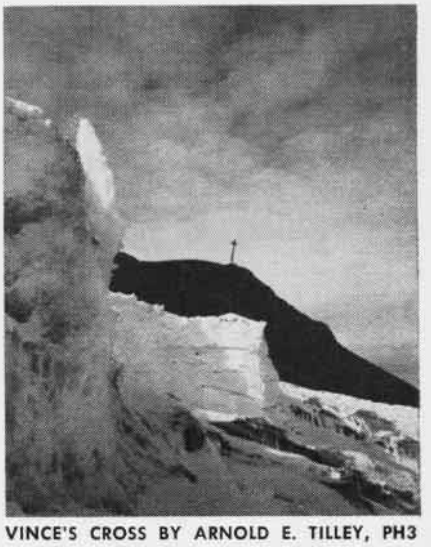


LONELY CAMP SITE ON FAMOUS BEARDMORE GLACIER IS PHOTOGRAPHED BY MATHIS DURING CURRENT DEEP FREEZE OPERATION, DF '62



TAYLOR PICTURES BYRD STATION TUNNEL

ICY OUTSIDE VIEW SHOT OF MEN AT WORK



VINCE'S CROSS BY ARNOLD E. TILLEY, PH3

Civilians Take Over Mess

Navy Men Assigned Elsewhere

On the first of February at NAS QUONSET, several Navy messmen laid aside brooms and swabs, and emerged from the scullery to assume other duties. Civilian workers picked up where the Navy messmen left off.

A survey is underway at Quonset, as well as other naval shore installations, to determine in what capacity civilian personnel will eventually replace Navy messmen completely. Civilians are working on a trial basis at naval installations in Washington, D.C. They are expected to work in Navy mess halls at NAS QUONSET and NS NEWPORT on a five-month trial basis ending 30 June 1962.

Civilian services include manning the scullery, cleaning and maintaining mess decks, pots and pans, the garbage room, etc. The Navy messmen still will be required to service the food. This includes working in the salad bar and vegetable preparation rooms, the station's hospital, and assisting with flight and bag lunches. They will also continue performing the galley's administrative duties.

PN3 Plus 13 Equals 184

Sees Superstition—and Stretches it

Bernard Garcia (whose name has 13 characters in it) is a PN3 assigned to Training Squadron 26 (when divided by two, gives him two more 13's to think about) at NAAS CHASE FIELD. He has his own reasons for thinking Friday the 13th is unlucky for some—particularly himself.

Garcia was scheduled for discharge on Friday the 13th last October, but he was involuntarily extended for six additional months' service. This he accepted in good grace, despite the fact that the six-month period adds to a total of 184 days (by adding the three digits of 184, he is given another 13 to worry over.)

What does have the young personnel-man concerned is his next discharge date. It falls in April—and again, on Friday the 13th.

Argentinian's Special Gift

Present Statuette on Departure

At NAS NORTH ISLAND, Calif., LCdr. Jorge Grau, OinC of a 37-man detachment of Argentinians addressed officers and men of Carrier Anti-Submarine Air Group 51 upon the graduation of his officers and enlisted men.

LCDR. GRAU PRESENTS STATUETTE TO VS-41

The Argentinians have been undergoing training with VS-41 in carrier and ASW operations since last September. In the group were 6 pilots, 3 maintenance officers, 23 enlisted maintenance men and 5 civilian technicians.

Cdr. Grau presented as an expression of appreciation, a statuette of an Argentine cabin boy. He said that members of his detachment had felt as inexperienced as the boy when they first checked in at San Diego.

The detachment left for Pensacola, Fla., for further training.

F8U-2N Simulator Ready

First is Delivered to NAS Miramar

A new tactics simulator has been designed to sharpen the shooting eyes of the Navy's fighter pilots.

The simulator, capable of displaying eight radar targets simultaneously was developed by Goodyear Aircraft Corporation under contract to the U.S. Naval Training Device Center at Port Washington, N.Y. It was delivered at NAS MIRAMAR, Calif.

Navy pilots flying the F8U-2N fighter must intercept aircraft under night and cloud conditions which prevent their seeing the target except as a radar blip. The new tactics trainer, which is electrically connected to a conventional instrument flight trainer, provides valuable ground training in interpreting the radar display and in intercept flight procedures.

Instructors may provide problems involving either formations or single aircraft. Bombers or fighters, either enemy or friendly, may be displayed. The pilot seated in the cockpit of the instrument trainer interprets the radar display, "flies" the intercept and "fires" *Sidewinder* missiles or 20 mm guns, "destroying" the enemy and completing the problem successfully.

The trainer also incorporates a checkout method of testing the system before the start of training problems. This enables the trainer operator to determine quickly whether the system is operating properly. It also isolates any faults in the small sub-systems, thereby greatly facilitating maintenance.

Filter Problem is Solved

Two-Stage Portable Unit Tested

A technical representative from NAS CUBI POINT and a Marine warrant officer from HMR-362 put their heads together and came up with a $150 solution to a $1000 problem.

They developed a two-stage portable fuel filter system that the Marine squadron can use on helicopter drum fuel when it is on maneuvers in the field.

HMR-362 had previously used chamois cloth to filter their drum fuel, which usually contains rust and water. The chamois did only a fair job at best.

Warrant Officer Blake Smith, HMR pilot, brought his problem to J.W. Riddle, Allison jet engine mechanic working with the Maintenance department here. Mr. Smith believed that two elements (fiber-glass) from shipboard filter units would do the job if a pump housing could be designed.

Mr. Riddle designed the housing. SRF in Subic manufactured the unit for a little over $150. The men took their manually-operated filter pump to NSD's fuel lab. It proved almost 100% efficient.

The pump weighs 50 pounds and can be handled by one man. Fuel is pumped from the drum to the pump right into the aircraft at 14-20 gallons per minute.

According to Mr. Riddle and Mr. Smith, the pump, designed of spark-proof aluminum, is safe. They estimate that the unit can be used for 100,000 gallons of dirty fuel before the fiber glass elements are replaced.

The unit is now on the USS *Princeton* where it is being field-tested.

ATSUGI'S ADDED TARGET SERVICE

A VU-7 AERO-36 TARGET IS PLACED IN 'BASKET' MOUNTED ON WING OF A CRUSADER

UTILITY SQUADRON FIVE at NAS ATSUGI is now using a Del Mar target mounted on the wings of *Crusader* jets. The targets help train surface units in anti-aircraft gunnery and aviation units in air-to-air missile accuracy. This target is also used by Utility Squadron Seven at NAS NORTH ISLAND.

The bright red, bomb-shaped object is eight feet long, 18 inches in diameter. Made of a pressed fiber substance, it weighs as little as 17 pounds.

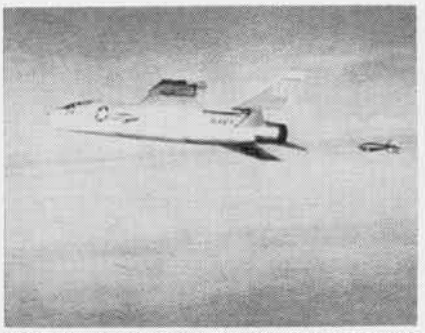
There are two types of this target. The 17-pound Aero 36 is a single device containing an aluminum foil radar reflector and is used as a target for radar-directed missiles and gunnery. The radar reflectors which show up on radar scopes are equal to the image of a four-engine aircraft. The second type is the Aero 42 (47 pounds) which contains flares to simulate the heat of a jet tailpipe and a radio device for timely flare ignition. This target is used for heat-seeking missiles.

The targets may be towed at the end of five miles of piano wire. Speeds are available up to 500 mph to a ceiling of 45,000 feet which may be reached with shorter wire lengths.

The target is streamed and retrieved by a reel device which derives its power from the aircraft slipstream. This power is harnessed by a reversible pitch propeller which supplies speed and direction to the reel. The propeller pitch is electrically controlled by the pilot as he monitors a footage counter and speed indicator inside the aircraft.

A towed system-equipped *Crusader* is expected to remain on station for approximately one hour, depending on the distance from base to operating area.

VU-5 furnishes target service throughout the Western Pacific by deploying aircraft to bases neighboring the various operating areas. VU-7 on the West Coast is continually sending out target mission detachments to Yuma, Ariz., Fallon, Nev., China Lake and Point Mugu, Calif. Occasionally detachments are sent to Alameda to serve ships berthed in the San Francisco area.



IN TOW, TARGET SEEMS ON HEELS OF F8U

Test Pilots are Graduated

Najeeb E. Halaby Main Speaker

Najeeb E. Halaby, Federal Aviation Agency administrator, was the main speaker at graduation ceremonies late in February for 17 U.S. Navy test pilots at NATC PATUXENT RIVER.

At the Navy Test Pilot School, experienced Navy and Marine aviators are given nine months of intensive technical training in aeronautics, mathematics, and engines. This class was the 30th graduated from the school since its founding in 1948.

Graduates of the school include astronauts—Cdr. Alan B. Shepard, Jr., and LCol. John H. Glenn, Jr—as well as many high-ranking military and civilian officials.

A former Naval Aviator, Mr. Halaby was associated with the establishment of the first Test Pilot School at NATC during World War II. He also served as assistant chief of the fighter section at the Test Center.

Cdr. Douglas M. Birdsall, Test Pilot School Director, was master of ceremonies for the program.

Ice Reconnaissance Pushed

Navy, Weather Bureau Join Canada

The U.S. Navy in cooperation with the U.S. Weather Bureau and Canadian agencies, has launched a major ice reconnaissance effort in the Gulf of St. Lawrence as a part of a project to develop procedures and techniques for interpreting satellite pictorial read-outs of ice information.

Project *Tirec* involves 12 aircraft of the U.S. Navy and the Royal Canadian Air Force. The effort was timed to coincide with the successful launch of *Tiros IV* February 8th.

The first phase of Project *Tirec* began within hours after *Tiros IV* went into orbit. The second phase begins early this month. The project involves an intensive visual and photographic coverage by jet and conventional aircraft operating from Argentia, Newfoundland, and Greenwood, Nova Scotia, coordinated with the passage of *Tiros IV* over the sea ice in the Gulf of St. Lawrence and eastern Newfoundland.

A control team, composed of representatives of the cooperating agencies, at Halifax directed the launch and flights of aircraft based on satellite pictorial data received from the station at Wallops Island, Virginia.

TWENTY-TWO *squadrons, not all at one time, are based at Miramar. Here is a long line of Chance Vought Crusaders belonging to Fighter Squadron 124. All military and civilian aircraft operating in the San Diego area are controlled by Radar Air Traffic Control Center.*

MIRAMAR CELEBRATES 10TH ANNIVERSARY

A SLEEK, NEW, fighter-interceptor jet roars down Mitscher Field runway, lifts its 40,000 pounds with featherweight ease, and banks north over open range. A pilot enters a trailer and climbs into a simulated cockpit for a "flight" in a new $2 million F8U-2N jet trainer. A student listens intently in a "Crusader College" classroom.

Such activities take place daily at NAS MIRAMAR, commanded by Capt. Burl L. Bailey. Until last year Miramar was home for both attack and fighter units, flying almost every kind of airplane in the Navy. After the reshuffling of West Coast squadrons in 1961, Miramar became the center for the support of all Pacific Fleet fighter squadrons.

To introduce the new Miramar to the public and at the same time commemorate the Tenth Anniversary of its commissioning, an air show, scheduled April 8th, features Naval Aviation's *Blue Angels* and the *Chuting Stars*.

Twenty-two squadrons—20 fighter, one photographic and one jet instrument training—are based at Miramar. Two main hangars, although crowded, hold 16 squadrons and the Maintenance Department at one time. To take care of the overflow, there are three nose hangars with adjoining shop and office spaces. The squadrons are under the direction of Capt. Paul F. Stevens who wears two hats, Commander Fleet Air Detachment and Commander Carrier Air Group 12.

There are always some Miramar squadrons overseas. Instead of losing an entire air group in any one Far East deployment, Miramar supplies fighter squadrons the year around. Operating costs are lowered when squadrons operate the same type of aircraft at one base. Chance Vought F8U *Crusaders*, McDonnell F3H *Demons* and the new record-smashing F4H *Phantom II*'s constitute most of the jet "population" at Miramar.

The 12,000 and 8000-foot runways are located in the middle of 15,281.86 acres. The Radar Air Traffic Control Center directs aircraft at all altitudes, from Oceanside, Calif., 27 miles north of Miramar to the Mexican border, 20 miles to the south, and from 25 miles at sea to some sixty miles inland.

RADM. A.R. MATTER, *Navy Inspector General, and Capt. Bailey inspect Mitscher plaque.*

MIRAMAR FACILITIES, *here the radar antenna and control tower, serve fighter squadrons.*

Weekend Warrior NEWS

DEBRIEFING OFFICER, *Lt. R.R. Rock (C) hears results of ASW flight from New Orleans Reservists, Lt. Ken Wersebe and Lt. G.E. Dugal.*

KENITRA'S MAYOR *accepts honors from Capt. L.E. Burke (L), RAdm. Frank Akers; Capt. J.L. Counihan, escort, Alameda Mayor Collischonn.*

CNAResTra-CNATra Conference

Five Naval Air Reserve admirals and 18 Reserve Air commanding officers attended a Flag Officers' conference at the headquarters of the Naval Air Reserve Training Command, Glenview, Ill. Co-hosts for the conference were VAdm. Fitzhugh Lee, CNATra, and RAdm. W.I. Martin, CNResTra. Briefings were given on all phases of the Reserve program.

ASW from Marine Base

VS-821, based at New Orleans, one of 18 active duty Reserve Air units, spent a week at MCAS CHERRY POINT, participating in Atlantic Fleet exercises and came away singing the praises of their host station. "Good support means everything in a successful deployment, and we certainly have to 'hand it to the Marines,' " the squadron C.O., Cdr. Clayton J. Borne, Jr., declared.

WEYMOUTH RESERVE *Hirshberg receives Carnegie Award for part in his airliner rescue.*

Weymouth Officer Honored

LCdr. Alvan Hirshberg, a Naval Air Reservist at South Weymouth, has been presented with a $1000 award and a bronze medal from the Carnegie Hero Fund Commission for his rescue work in the crash of an airliner at LaGuardia Airport on September 14, 1960. A passenger on the airliner, Hirshberg disembarked and went to the aid of the occupants in the cockpit. Hirshberg pried open the hatch with a coin. He suffered first degree burns. "Credit should go to the Navy for the fine training they have given me on how to react in emergencies," Cdr. Hirshberg said.

Pasha Made Welcome

His Excellency, Abdelhamid El Alaoui, Mayor of Kenitra, Morocco, was made an honorary Weekend Warrior and received welcoming proclamations from California at Alameda.

The Pasha is visiting installations which have sent squadrons to Morocco on reserve training cruises, basing at Port Lyautey, near Kenitra.

OLD AND NEW *rifles are compared by Marines at Willow Grove. Sgt. Ralph Keyer (L) sights down barrel of new M-14 rifle now used by station Marines. M-1 rifle (R) is fired by Sgt. H.W. Koerber. M-14 is lighter.*

VF-722 SKIPPER, *Cdr. J.E. Stevenson, is brought up short, but smiling, at the appearance of an unofficial headpiece during post cruise inspection of squadron. The unit just returned to Los Alamitos from Morocco.*

Silver Wings Among Gold

Former AF Pilot Becomes NAO

Seldom are an Air Force pilot's silver wings seen in the Naval Air Training Command, but Ens. Walter T. Cook, attached to VT-2 at NAAS WHITING FIELD, wears them while striving for Navy Wings of Gold.

Ens. Cook obtained his Air Force commission in 1954. After pilot training, 1st Lt. Cook amassed 1200 pilot hours at Mather AF Base in the T-29. After completing his active duty, he flew C-119's with the AF Reserve.

Wanting to return to military flying, he went to Pensacola last summer and was trained in the Naval Airborne Observer program. Upon receiving his commission in October 1961, Ens. Cook applied for flight training and gained permission to go through at an accelerated pace, owing to his previous experience in the USAF.

TWO-PLACE F8U-1T STREAMS ITS DROGUE CHUTE TO SLOW ROLL-OUT ON MAIDEN FLIGHT

F8U-1T in First Flight

Modification of Early Crusader

The Navy's first supersonic two-seater trainer plane—the Chance Vought F8U-1T—made its initial flight February 6 at Hensley Field, Dallas.

This newest *Crusader* is actually one of the early F8U's off the line with its face lifted. This particular aircraft has spent most of its life on bailment to Chance Vought. In one "life" it was the F8U-2N weapons system demonstrator.

In converting the F8U into a trainer, the second cockpit was placed immediately behind and 15 inches above the present cockpit. Both positions have the full F8U-2N cockpit configuration. Many features of the latest *Crusader* version, the F8U-2NE now in production, were built into the "T," including the radar and autopilot, enabling advanced students to fly tactical, instrument and other flights in a modern high performance aircraft.

A new feature of the "T" not in any of the previous seven models of the *Crusader* is a drogue chute. This device will aid landing performance on small fields not equipped with arresting gear.

Two of the 20-mm cannon were retained, along with provisions for two *Sidewinder* guided missiles.

The trainer, powered by an early version of the J-57 engine, has a speed of more than Mach 1.5 and a ceiling of above 50,000 feet.

After a short test program at the factory and an abbreviated evaluation at NATC, the plane will be sent to a RAG squadron to determine its value as a trainer.

Depending on results of the Fleet Evaluation and CNO future trainer requirements, a limited number of the earlier F8U-1 *Crusaders* could be converted into trainers in minimum time.

HRM-363 Sets Safety Mark

Logs 15,000 Safe Flight Hours

Marine Medium Helicopter Squadron 363 completed 15,000 consecutive accident-free flight hours on January 31, 1962.

The milestone flight was made by Maj. M.T. Jannell, squadron C.O. The flight also marked a milestone in Maj. Jannell's own flying career, since it brought his total time to over 8760 hours and gave him more than a year in the air.

The squadron racked up the record during the period, October 17, 1960 to January 31, 1962. LCol. J.T. Barden was C.O. at the beginning of the stretch.

HMR-363 flies the HUS helicopter.

New Calibrator Developed

Tests Navy's 'Dunking Sonar' Gear

A device to calibrate the efficiency of the Navy's "dunking sonar" system has been developed by the Navy Electronics Laboratory, San Diego.

The equipment reads out a figure of merit (FOM) and consists of two main parts: a testing transducer clamped to the sonar, and an electronic "box" carried in the helicopter. It has been tested and approved by the squadrons operating off the ASW carriers of Division 19 in the Western Pacific.

When lowered into the sea, the tester snaps into position exactly one yard from the helicopter's sonar. Signals sent from the FOM device measure the receiving ability of the sonar. In a similar manner, emanations from the sonar are picked up and measured by the FOM equipment.

Uniqueness of the system lies in the fact that signals are measured in their normal environment. In addition to the sonar source level, specific information is provided on (*1*) the system's self-generated noise, (*2*) the operator's performance, and (*3*) the transducer beam pattern. These performance influences could not be measured if the sonar were removed to a shop for testing.

The equipment will be used by helicopter squadron personnel on a regular routine checkout—about once every 60 hours.

The gear was developed by Code 2120 of the Human Factors Division, and built by the Mechanical Equipment Section, NEL. Contracts for commercial manufacture will be handled by the Bureau of Naval Weapons.

Record GCA Completed

Event Celebrated by Key West Unit

". . . on the glide path, over GCA point of touchdown, upon completion of your roll out, you are cleared to tower frequency, GCA standing by." With these familiar words, W.F. Maloney, AC2, the controller, completes his approach, and the pilot, Cdr. John F. Hill, X.O. of VF-101, puts another GCA run in his log.

This was the 50,000th approach for GCA Unit #8 at NAS KEY WEST. Ground Controlled Approach, which arrived in Key West in the fall of 1948, has been operating continuously ever since its original commissioning.

WORLD-WIDE MAINTENANCE CONFERENCE

THE NAVY's first World-Wide Naval Aircraft Maintenance Conference was held in Washington, D.C., in February.

The Bureau of Naval Weapons called the conference to preview the new *Naval Aircraft Maintenance Program Management Manual.* This 200-plus page book will be a comprehensive reference guide on the Naval Aircraft Maintenance Program (NAMP) and will replace a large number of separate directives.

Three hundred people attended the opening session and over 225 participated in the working panel sessions. Delegates came from as far as Atsugi, Japan, and Rota, Spain. This conference was reported to be the first time in Naval Aviation's history that so many people associated with aircraft maintenance were ever brought together in one room.

The conference opened with an informal talk by VAdm. Robert B. Pirie, DCNO(Air). He reviewed the development of the NAMP from the recommendations of the Pirie Board of 1958. He said it was apparent when the board made its studies that systems in use at that time would not be adequate to cope with the problems of the high-performance, high-complexity aircraft of the Sixties.

Speculating on future developments, he prophesied that in time the maintenance officer would come into his own, since it had become painfully obvious that Naval Aviation can be no better than its maintenance. He remarked that the day may come when we have a maintenance officer and a crew assigned to each aircraft who will stay with that one plane from its acceptance to the end of its service life.

RAdm. Paul D. Stroop, Chief of BUWEPS, followed with a detailed presentation of the Navy's problems and the actions being taken to cope with them.

He stated the Navy is now spending a billion dollars a year for naval aircraft maintenance, exclusive of personnel costs. In contrast to support costs, direct operating costs are only $190 million a year.

"You gentlemen are responsible for the skillful management of our limited resources, and I realize that we will

VADM. ROBERT B. PIRIE, DCNO(AIR)

probably never have as much money as we might wish for. Effective utilization of these resources is directly proportional to your management ability," Adm. Stroop said.

In recounting recent gains, he noted that out-of-service time for maintenance had been cut 17% in Progressive Aircraft Rework and had been cut substantially by calendar maintenance.

He also outlined some of the steps BUWEPS is taking to improve aircraft reliability and maintainability. "We have made major additions to our basic aircraft design specifications to include contract requirements for reliability. The new requirements will provide more reliable weapons and aircraft and will furnish valuable inputs into the Weapons Readiness Achievement Program (WRAP).

RADM. P.D. STROOP, CHIEF OF BUWEPS

"The BUWEPS quality-control functions have been improved by expanding the scope of the activities of the former BUORD Quality Control Group to cover aeronautical areas. We felt that BUORD had a very good quality control program."

The Fleet was commended for the way it made the transition from the FASRon to the NAMP with scarcely a hitch. He also noted that with the advent of the full-scale component repair program, the number of parts going to O&R for overhaul had been cut 40%. "This is the sort of do-it-yourself program which has made an important contribution to readiness," Adm. Stroop said.

On what is perhaps the most critical problem, personnel, he promised no "rabbit-out-of-the-hat" solution but urged the conference members to define their needs for personnel by relating them accurately to the workload, so "you can compete effectively for your share of the Navy's available manpower."

In preparation for the main work of the conference, draft copies of the new NAMP manuals were made available to all delegates. The advance issue gave panel members a chance to do their "homework."

The 14 chapters of the manual were divided among ten panels. Panels worked over their assigned chapters with word-by-word thoroughness. A typical panel had about 25 members, ranging from a Captain to a Master Chief Aviation Machinist's Mate. BUWEPS and the major commands were represented on all the panels. Other delegates represented the ComFair/ComNABS, the BUWEPS Fleet Readiness Representatives, maintenance departments of major air stations, and even some individual squadrons.

It was the consensus of the delegates that the conference accomplished valuable work. Knotty problems which had plagued the NAMP from its inception almost three years ago were threshed out in a few minutes of "toe-to-toe" discussion. Recommendations of the panels are not final until approved by the Bureau of Naval Weapons or other authority.

A3J PLANE *captains are trained at left, while a mechanic draws technical information in right frame. Through detailed engineering analysis,*

WRAP identifies, by maintenance levels, the skills, technical information, parts, tools and test equipment needed to keep planes mission-ready.

'WRAP' UNWRAPPED

By LCol. Richard A. Bauer, USMC

Maintenance Programs Section, Weapons Support Branch, BuWeps

THE CRYPTIC ACRONYM, WRAP, describes something of importance to everyone in the Naval Aviation maintenance field. WRAP is the title of a plan: Weapons Readiness Achievement Program. It is a fundamentally new approach to the problem of keeping complex modern planes ready to carry out their missions.

WRAP provides answers to these key questions:

- What maintenance has to be done?
- Why does it have to be done?
- When does it have to be done?
- Who is responsible for doing it?
- What does it take—people, time, parts, tools and pubs—to accomplish the required maintenance?

Answers to these questions are provided in the form of an integrated maintenance and support plan, covering all levels and types of maintenance from the flight line to the O&R, for the lifetime of the weapon system.

The objective of the program is maximum weapon readiness from available support resources—manpower, time, money and material. This objective includes not only effective and economical use of manpower and logistic support, but also minimum aircraft-out-of-service time owing to maintenance.

WRAP integrates all aspects of naval aircraft maintenance and logistic support programs, from technical training to parts procurement, by bringing them together as finely balanced parts of a single program.

The Needs of the Machine

Thirty years ago planes were still simple enough that one man could oversee the total design, be personnally acquainted with all the problems of its maintenance, and probably test-fly it too. There was no real problem of keeping the various support programs compatible and in balance, because one man could understand them all and therefore keep them integrated.

However, with progress, particularly in electronics, our planes have become so complex that no one man can be an expert in all the various support programs necessary to keep an aircraft and its systems mission-ready. Consequently, specialists are necessary to deal with parts of the problem of maintenance and logistic support. There are experts for determining requirements for spare parts, test equipment, tools, technical information and personnel training, to name a few.

These experts have developed many plans for dealing with specialized aspects of the maintenance and support problem. However, when it came to bringing all these programs together to keep the aircraft mission-ready, it was found all too often that there existed a weak link. A squadron might have the parts, the trained manpower and test equipment, but be unable to do necessary maintenance for lack of technical information. At other times the weakest link, or the "controlling constraint" as the systems analysts say, might be parts, test equipment or one of the other programs.

The point is: *maintenance can be no better than the weakest element of the support program.* It does no good to have fine test equipment, highly trained mechanics and a superb technical library if the needed parts are not available. WRAP promises to solve the problem of balance in the support programs by coordinating them all, and building, step by step from one common foundation, the true maintenance needs of the aircraft.

Analysis of the needs of the aircraft covers not only routine servicing and inspections, but also unscheduled maintenance, the "down gripe" kind resulting from unscheduled failure of a part or component.

This involves predicting random failures. A few years ago the idea of predicting and planning for random failures would have been considered "dream stuff." However, with recent advances in reliability prediction, such planning is not only feasible but highly practical. Good calculation of the "odds" on failures allows placing our

resource "bets" where they will bring the biggest return in readiness.

There are many ways to help predict how often a part will probably fail and what kinds of failure it might suffer. Contractor test programs yield much data. One of the best sources is the information on parts used on other aircraft accumulated from the FUR's (Failure and Unsatisfactory Reports). If a part has never been used before, the frequency and kinds of failures can be predicted by studying failure rates of similar equipment and by analyzing the types of stresses it will be subject to in its operating environment.

A plane's maintenance needs depend not only on the nature of the machine, but also on the mission it is to perform and the conditions under which it will serve. Therefore, the first step in WRAP is spelling out in detail the mission requirements and operating conditions for the aircraft.

Where will it operate? From unprepared fields in the dust and dirt? Or from a carrier exposed to salt air? How often will it be expected to fly and for how long? Only when the job the plane is to do has been spelled out is it possible to determine the support required to keep it ready to do that particular job.

Some people will argue that war is such an uncertain business that good answers to these questions are impossible. While it is true that it is impossible to "know" the answers for sure, an "educated guess" is feasible. The better the estimate of the aircraft program and usage, the more it will be feasible to tailor the support to the job to be done.

One thing is sure: the Navy can't buy lots of everything "just in case." It is necessary to calculate the odds and buy those things most likely to be needed.

Maintenance Engineering Analysis

What maintenance will the aircraft require to do its job under the conditions in which it will operate? To answer this question, WRAP requires the aircraft builder to conduct a Maintenance Engineering Analysis—almost a part-by-part analysis—of the aircraft and its systems. The results of the analysis are recorded on the MEAR, Maintenance Engineering Analysis Record, a blueprint for readiness that should prove invaluable.

TECHNICAL *information for squadrons will be culled out and put in handier form by WRAP.*

The maintenance engineering analysis is a contractor-team effort. Typically the team is made up of experts with vast experience in maintenance of the particular type aircraft. This contractor team includes practical mechanics and technicians as well as people with formal degrees in aircraft maintenance engineering.

Once the team has determined what can go wrong with a part or system, and how often these failures are likely to occur, it will work out the plan for routine maintenance and inspection.

Developing the plan for routine maintenance and inspection requires weighing many considerations to arrive at decisions which will give the best return on the maintenance man-hours invested. It is not intended to try to inspect everything, not even everything that inspection might catch before it failed completely. Inspection efforts are concentrated on those items where failure can cause real trouble—jeopardize completion of the mission or flight safety—*and* which can be detected by inspection.

After weighing all considerations a decision will be made as to when each item of routine maintenance and inspection should be performed. Choices range from daily inspection to progressive aircraft rework (PAR) which occurs about every 15 months.

A decision closely related to the question of *when* a maintenance action is to be performed is the question of *who* is to do it. Assignment of responsibility for the job is accomplished by the shorthand device of assigning the maintenance actions to maintenance levels—"A" overhaul, "C" component repair, "D" shop, "E" hangar and "F" line.

Navy squadrons are responsible for all tasks assigned "D", "E", or "F." Marine operational squadrons are responsible for "E" and "F," while the supporting Marine maintenance squadron performs the "C" and "D." "C" maintenance for Navy aircraft is the responsibility of the AMD's of major air stations, while "A" is done by our industrial activities, the O&R's.

All routine inspection or maintenance tasks assigned must be fully justified on the basis of the proved needs of the aircraft. The fact that "we have always inspected the 'gismo' on pre-flight" is not sufficient justification for continuing the inspection under WRAP.

After the engineering analysis team has determined *what* has to be done, *why* it must be done, *when* it is to be done and by *whom*, it then determines *how* to do it and what parts, tools and other support are required.

This team works out recommended methods for accomplishing the work and lists the parts, tools, personnel skills by skill level and time, and the aircraft environmental condition—whether up on jacks, power on, etc.

The technical information and detail for each operation are complete. In addition to full information on the specifics of each job, the MEAR spells out in detail the "symptoms" of proper operation, or conditions to be satisfied for a completed job.

The MEAR sets forth the facts which are evidence of proper operation. For instance, it might say that in a landing gear drop check with 3000 pounds hydraulic pressure on the system, the landing gear should retract in six seconds. Other details of pressures, voltages, clearances, torques, etc., are also spelled out. It is no longer enough to say, "Check landing gear for proper operation."

Development of the MEAR's goes beyond a mere recording of the maintenance needs of the machine and extends to actions to keep those needs to the lowest practicable level.

Very early in the maintenance analysis of an aircraft, man-hour and aircraft down-time target "parameters" or limits are set. On a simple aircraft, a target of 1.5 maintenance

man-hours per flight hour might be set, while 35 might not be excessive for one of the electronics-laden modern weapons systems.

In the future, it is anticipated that the maintenance man-hours per flight hour and the maintenance down-time required will be spelled out in the original proposals and will influence the selection of the contractor who will build the aircraft.

In attempting to control the maintenance requirements, the accumulation of man-hour requirements are closely checked against the target parameters as the work of developing the MEAR's progresses. If half the MEAR's are completed, but more than half the target maintenance man-hours per flight hour are already accounted for, it would show that, unless some changes were made, maintenance requirements would come out on the high side of the target.

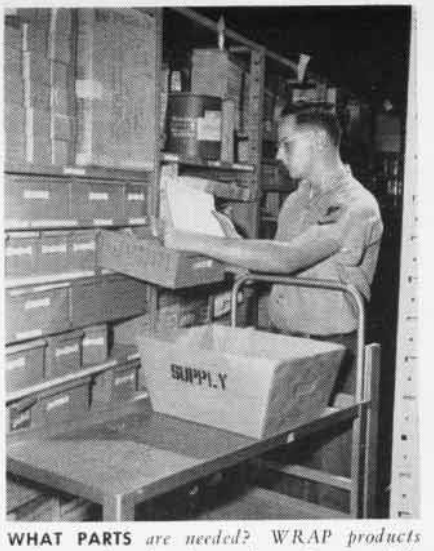
In such cases, the team would restudy some of the big "time" users and see what could be done. Possibly redesign will greatly reduce maintenance man-hour requirements.

Scheduled component replacement is another way maintenance requirements can be reduced. If information from FUR reports indicates that the failure rate on a component rose sharply at about 600 hours, squadron level maintenance might be greatly reduced by replacing the component at PAR.

Scheduled component replacement can save a lot of headaches; it can also cost a lot of money. Because of the cost in dollars and man-hours, the only items scheduled for replacement are those which meet the following conditions: (1) where failure is predictable, that is, where the failure rate tends to rise rapidly after a given number of flight hours; (2) where failure adversely affects flight safety or mission accomplishment; or (3) where scheduled replacement is more economical.

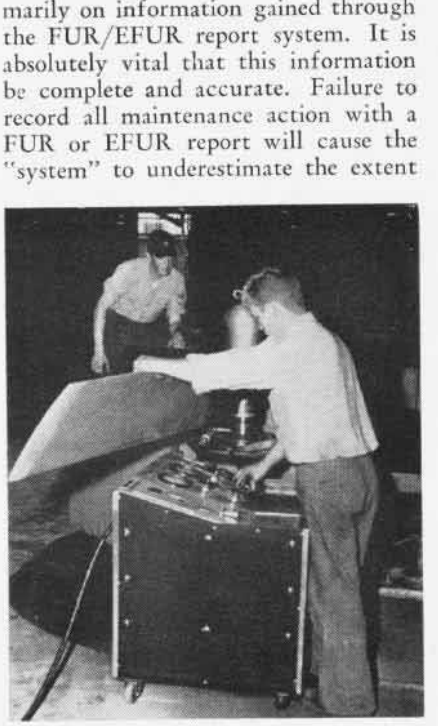
In addition to maintenance man-hours per flight hour, the team keeps a close watch on "out of service time" for maintenance. If down-time isn't tightly controlled, it is easy to get so many required maintenance actions—service changes, special inspections, etc.—that we might easily be forced to buy four aircraft to keep two mission-ready.

The maintenance engineering analysis is not a one-shot affair. In fact, it is a continuing process which will go on for the lifetime of the aircraft. As experience is gained, the maintenance requirements will be continuously refined. Whereas the first analysis is based on *predicted* maintenance requirements, with flight testing and service use the analysis can be perfected on the basis of *experience*.



WHAT PARTS *are needed? WRAP products will provide a list for each maintenance job.*

Refining the analysis in the light of fleet experience will depend primarily on information gained through the FUR/EFUR report system. It is absolutely vital that this information be complete and accurate. Failure to record all maintenance action with a FUR or EFUR report will cause the "system" to underestimate the extent of the required maintenance, and will lead to a cutting of the manpower and material support provided for maintenance.



TEST EQUIPMENT *is vital but expensive. WRAP data helps place it where it is needed.*

Requirements Review Team

The Maintenance Requirements Review Team will be responsible for the continuous refinement of maintenance requirements as experience is accumulated.

This team, which will meet at least every 90 days, will have representatives from the organizations most concerned with supporting a particular aircraft. There will be experts from the Inspection Requirements Branch of NATC at Pax River, the O&R responsible for PAR, the BuWeps representative at the plant where the plane is built, the Aviation Supply Office, and from the fleet activities living with the weapons system. Whenever needed, the team will call in other experts for advice on particular problems.

This team has the knowledge required for and the responsibility to make the proper logistic support decisions. The Maintenance Requirements Review Team actually makes the decisions reflected in the MEAR's, which are submitted by the contractor in the form of recommendations.

In its quarterly meetings, the review team will analyze the unscheduled maintenance as reflected in FUR/EFUR reports, review individual task analyses and update the scheduled maintenance plan.

This group has the responsibility to see that our maintenance plan remain pruned of unnecessary inspections and that every required maintenance man-hour actually contributes something important to weapon readiness. In the past, it seemed that once an item got on a list of inspection requirements, it would stay there for life. It was easy to add new requirements, but virtually impossible to remove obsolete requirements.

Benefits of WRAP

The detailed maintenance engineering analysis of the needs of the aircraft, as set forth in the MEAR's, will be the common foundation for all support aspects—personnel allowances, parts, test equipment, technical information, etc.—of the maintenance program. The common foundation will insure that all aspects of the

support program are mutually compatible and in balance.

One benefit of WRAP, visible from the squadron level, will be a pulling together and culling out of technical information and directives. Manuals will be written in terms of maintenance levels; class C, D, E, and F will be separated. Squadrons will be issued only the information needed to do the maintenance tasks assigned to squadron levels and for which they will be provided the necessary logistic support.

Much information now contained in widely scattered manuals and instructions will be brought together in a few manuals and in the handy maintenance requirements cards.

Squadrons will be provided with three basic sources of information:

- Periodic Maintenance Requirements Manual (PMRM). This book will set forth the scheduled maintenance plan with all the actions and the levels, A through F, to which they are assigned.
- Maintenance Requirements Cards and associated Sequence Control Charts. The cards give a handy brief of the required maintenance jobs, showing what has to be done and the parts, man-hours, etc., required to do the jobs. Sequence Control Charts show the best sequence for completing the various tasks covered in the cards.
- Maintenance Instruction Manuals (formerly the Handbook of Maintenance Instructions). This series of manuals will give complete technical information on how to perform all required maintenance actions and will be organized by maintenance levels.

This organization of technical information and directives is expected to reduce maintenance paper work greatly. Technical directives, which formerly were handled by numerous speedletters and messages, will now be handled by changes to the maintenance plan. Complete changes in Maintenance Requirements Cards can be made in five working days. That is, the basic MEAR can be changed and new cards printed and in the hands of the squadrons within five days.

Future Benefits

The firmly documented and experience-verified information provided by WRAP can have many uses in addition to the squadron-level benefits.

MAINTENANCE *Instruction Manual series gives detailed directions for each maintenance job.*

When the system is in full operation and the information has been programmed for automatic data processing, it will be possible to develop all allowance lists for personnel, tools, test equipment, spare parts and support equipment virtually automatically. Computers can summarize the requirements set forth on the MEAR's and thus give a total of the requirements by maintenance level for a given type aircraft.

When changes have been made to the MEAR's—and no change will be made to the maintenance plan or support requirements which will not be documented in a MEAR—new machine runs will provide corrections to the various allowance lists.

NEEDS OF THE MACHINE *are the common base for all support programs under WRAP.*

Once MEAR's have been completed on all types in the active inventory, it will be possible to solve the problem of what to load aboard a carrier for a deployment. If information on the numbers and types of aircraft to be aboard are fed into the machine, it can potentially print out totals of the spares which should be stocked.

WRAP information makes it possible to predict accurately the total cost of service changes. It will help show how much material will be made obsolete by a change, how much manpower will be required to make the change, the aircraft down-time, and the changes in requirements for technical information.

In the future, WRAP will provide a means for developing the kind of total-cost, total-lifetime information now required for program package-type budget decisions.

By providing knowledge of what costs ought to be, it will give a standard against which to measure performance. When costs are too high, it will draw command attention to problem areas and thus help improve Naval Aviation's total effectiveness in use of resources.

Present Status of WRAP

Today the Maintenance Requirements Cards, the Sequence Control Charts and the Periodic Maintenance Requirements Manuals are in use for the F4H and the A3J. By the end of the year, the "card system" on the A4D-5 and F8U-2NE will be available. WRAP has also been applied to the P3V, W2F and A2F. However, the first aircraft to have WRAP "from scratch" will be the HRB helicopter.

WRAP will provide the maintenance and management tools needed to keep modern, high-performance aerial weapons systems mission-ready. It furnishes a sound approach for achieving all the reliability inherent in our aircraft and for getting the most "effectiveness" from our maintenance support resources.

However, fullest benefit of the system can be achieved only with valid and complete information on true maintenance needs. For that information, the Navy must depend on feed-back from the Fleet through FUR/EFUR failure report system.

As stated previously: *Maintenance can be no better than the weakest element in the support program.*

QUALITY IS GOAL OF OVERHAUL PLAN

By Elretta Sudsbury
O&R, North Island

POWER PLANT DIVISION *head, C.S. LeQuire, and Capt. F.R. Myers, O&R Officer, admire T58 engine as Fred F. Euler, General Electric Representative, points out its special features.*

THE OVERHAUL and Repair Department, NAS NORTH ISLAND, San Diego, has swung into full production on overhaul of the T58-GE-8 turboshaft engine, power plant of the twin-engine HSS-2 helicopter and other new "whirlybirds." Thirty-five of the "Mighty Midgets" are scheduled for completion the first half of this year. Eleven were overhauled by the end of December.

HSS-2 helicopters now operate at NAAS REAM FIELD, only 15 miles from North Island. There, squadrons HS-2 and HS-10 patrol the Pacific waters in the HSS-2, one of the Navy's newest sub-hunting weapons systems. Lt. W.E. Aut, HS-2 Power Plant Officer, described the quality of the T58's overhaul at North Island as "outstanding."

The T58 engine is a graphic example of the development of power plants in the past 50-odd years. The 295-pound T58 has a rated horsepower of 1250—almost 80 times that of the 160-pound engine which powered the Kitty Hawk *Flyer*!

At North Island, the T58 engines are overhauled in a glistening, orderly production area. Under the direction of Capt. F.R. Myers, O&R Officer, and Mr. S.C. LeQuire, Power Plant Superintendent, systematic teamwork has been built into the shop. Production control, quality control, material control, cost control, and product standards have all been efficiently integrated.

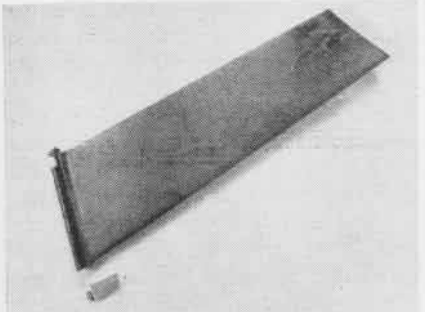
In terms of size, the T58 engine was a challenge even to the flexible O&R workers. The Mighty Midget looks like a beautiful toy beside the J57, J71, and J79, all overhauled at North Island. Big fingers felt clumsy at first as they handled the tiny parts of the T58. Artisans soon found that compressor blades, smaller than the wings of a butterfly, and other fragile items could be damaged easily if not treated with special care. In fact, *special* has been the watchword for the T58 program. Skills, handling devices, test equipment, and manual dexterity must all be *special* if they are to meet the maintenance requirements.

Both shops and staff personnel agree that, for a new assignment, surprisingly few problems have been encountered in overhauling the T58. "This has been a slick program from the start," according to Mr. W.E. Crain, the Weapons System Pilot Overhaul Coordinator, Operations Analysis Division.

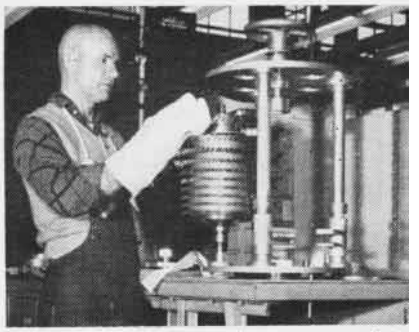
There were three major factors which made the T58 engine overhaul go into production with ease: technical competence of personnel, on-hand support of the General Electric Field Service Representative, and efficient, long-range planning by the Navy and the contractor. North Island planning began with a familiarization trip to the G.E. factory, Lynn, Mass., in early 1959. Later, at a provisioning conference there in August 1959, the material and tooling needs were developed, and procurement action was set in motion.

Two years passed. Those were changing years in O&R NORTH ISLAND, as the product mix shifted and more advanced, sophisticated weapons systems were assigned for overhaul. At present, North Island overhauls 19 basic models of aircraft, four engines, thousands of accessories and components, missiles, and varied other items. The work force of almost 6000 represents over 100 different trades and professions. Highly skilled employees are assigned to the T58.

A 26-man team was formed to pre



TINY T58 *and giant J71 compressor blades show contrast; J71 blade is 9½ times longer.*



K. V. WHITE, *O&R mechanic, wears asbesto gloves when working on shaft heated to 300°*

E. B. RICHARDSON *starts final assembly by installing compressor; Fred Euler at right.*

pare for the T58 program. Members were hand-picked for exceptional know-how, and the team effort was coordinated by Mr. Crain. Each team member performed within his specialized area. An efficient production area was laid out, equipment was installed, and personnel were trained. The result was a shop for the future, one which can be expanded to support other lilliputian engines as they are assigned to North Island in the years ahead.

IN AUGUST 1961, the pilot overhaul of the T58-GE-8 engine began. Each step of disassembly, assembly, and test was planned, tried out, then improved. Tooling capabilities, facilities, technical data, and trade skills were evaluated. When the pilot overhaul was completed, the processing pattern from beginning to end had been carefully documented to become part of the plant-wide Mechanized Production Control System.

The system which emerged from the pilot overhaul begins with the removal of the engine from its container. A planner and estimator evaluates the engine to determine the degree of overhaul required. In the T58 shop, the engine is then disassembled, and the material identified and tagged for routing. Parts are examined in various ways depending upon type. They may receive Magnaflux, Zyglo (a dye penetrant method of detecting cracks), dimensional checks, weight and balance, or any one of several other tests. Nothing is left to guesswork. Quality is the aim.

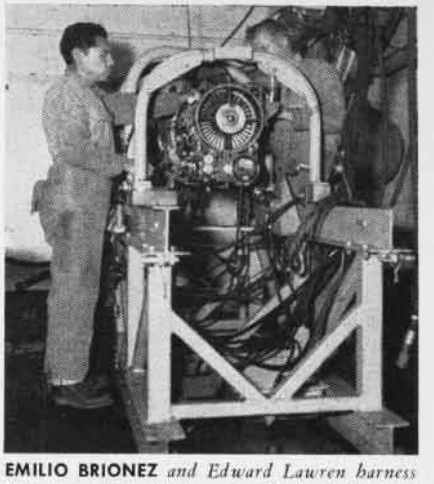
Material is reworked or replaced, then routed back to a finished parts storeroom. Items are grouped into 11 sub-assembly kits, assembled, then the total engine is built up. Many special tools and testing devices are required for the assembly operation. For example, a concentricity checking fixture is used to gauge a completed rotor at eight different places. Checking sub-assemblies prevents effort being wasted by going too far into the assembly operation before detecting discrepancies. The critical tolerances of the Mighty Midget make this constant testing and measuring essential.

The assembled engine receives an operational test under simulated flight conditions. Then, tightly sealed into a can, it is delivered to the Supply Department as a stock engine.

NAAS REAM FIELD is O&R NORTH ISLAND'S nearest T58 customer. Ream Field mechanics complete the T58 maintenance cycle begun at North Island. Take, for example, a typical operation in the Maintenance Department of HS-2. This department, under LCdr. E.R. Winslett, has a well trained crew which performs squadron maintenance of the T58.

The men enjoy working with the T58. P.L. Grattan, ADJ1 says, "We were thoroughly trained at Key West before we began working on the T58, so we've had no trouble with the engine. Naturally, there were things to work out, but that is to be expected in a new program."

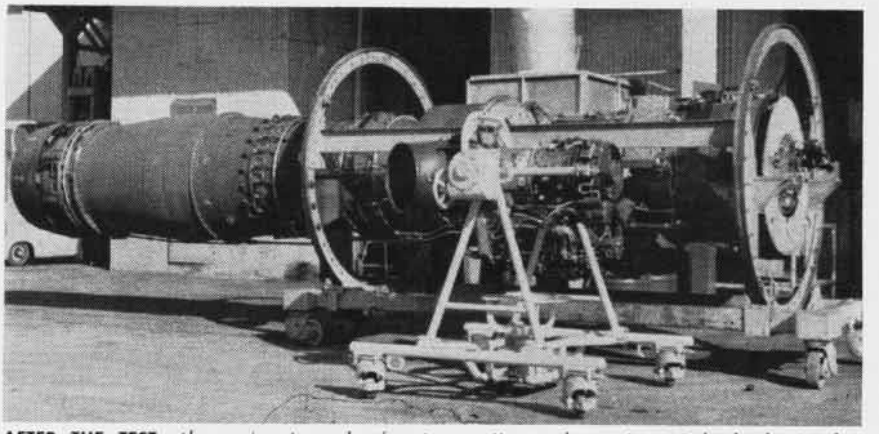
At HS-2, an engine is removed from the aircraft for a 120-hour check. If found O.K., the engine goes back on the helicopter for another 60 hours of operation. If defective, it is preserved, canned, and exchanged for a new one from the Supply Department. The used engine remains in Supply until put into overhaul at North Island.



EMILIO BRIONEZ *and Edward Lawren harness T58 in test cell for simulated flight test.*

When a new or newly overhauled engine is drawn from Supply by HS-2, it is removed from the container and placed on an upright, portable work stand. F.J. Weeks, ADC, in charge of the T58 shop, assigns a crew to inspect the engine, then to build it up to a quick engine change unit. They install the tail pipe, tubing, accessories and attaching parts. A hoisting device then lifts the T58 into place on the HSS-2. The whole operation from can to aircraft takes eight man-hours or less.

Any resemblance to a toy ends when the T58's are buttoned up into the HSS-2. With 2500 horsepower provided by two T58's, the night-flying, amphibian HSS-2 recently set a helicopter speed record of 210.6 mph.



AFTER THE TEST, *the engine is ready for preservation and canning. Behind the Mighty Midget is a J57, one of giant jets overhauled by O&R, Naval Air Station, North Island.*

ORDNANCEMAN'S DESIGN A WINNER

IN THIS AGE of missiles and space programs, the role of the Navy enlisted man was never more important. Take, for example, John N. Garbarini, a chief aviation ordnanceman on the staff of the Commander Fleet Air, Jacksonville, who came up with an idea. This idea, evaluated and refined by the Bureau of Naval Weapons, resulted in design which permits a *Bullpup* missile to be mounted swiftly on the A4D.

Back in 1959 when Garbarini, then an AO1, was attached to VA-34, at NAS CECIL FIELD, the *Bullpup* guided missile arrived. VA-34 was elected to be the first Navy operational squadron to have it.

Garbarini had a job on his hands. None of the squadron pilots or maintenance crew had any previous missile experience, and they now had to rig the A4D *Skyhawk* with the missiles. Rigging each plane took several man-hours of back-breaking labor, fitting the jigsaw puzzle of parts to the jet aircraft.

Following the first firings, VA-34 pilots began training with the missile in preparation for a deployment with the Sixth Fleet, Garbarini and his crew, after arming the planes with *Bullpups*, decided there must be a simpler way of doing things.

Garbarini set to work and in another week had designed an adapter which would mate the *Bullpup's* launching mechanism (Aero SA Guided Missile Launcher) with existing bomb racks on the planes. His simple adapter was designed to be suspended from the bomb racks and the *Bullpup* could be fitted to it with a minimum of fuss and bother.

Next, Garbarini brought the design to the Commander Fleet Air, Jacksonville, Ordnance Officer, LCdr. T. H. Beall, who realized the possibilities of the idea, held a discussion with his assistant, E. R. Faraday, AOC, the BUWEPS Contract Technician, N.M. Carter, and the Naval Aviation Electronics Service Unit engineer, D.G. Skidmore.

Since Garbarini and his squadron would soon sail for the Mediterranean and would not have time to develop a working model and drawings, Mr. Skidmore, was assigned pursuit of the project.

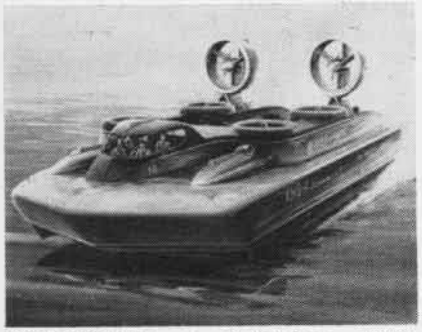
The first working model of the adapter was fabricated and delivered to Commander Fleet Air, Jacksonville, in November 1960. ComFairJax made both ground and flight tests with excellent results and the adapter was then submitted to the Chief of the Bureau of Naval Weapons for further evaluation.

Impressed with the potential of the adapter, BUWEPS initiated a program to evaluate it which consisted of laboratory environmental tests and flight, catapult, and arrested landing tests at the Naval Air Test Center, Patuxent River, Md. Again the adapter met all tests with excellent results.

Based on the above program, BUWEPS has initiated action to procure a production engineered version of Chief Garbarini's basic adapter concept to permit all Aero 5A Guided Missile Launchers to be mounted directly on the bomb racks of aircraft carrying *Bullpup*.

Is Chief Garbarini's contribution to go unnoticed? Not at all. In a letter to Commander Fleet Air, Jacksonville, the Chief of BUWEPS pointed out that the device eliminates a vast amount of bulky and costly equipment, greatly reduces reconfiguration time, reduces the amount of hard work required of squadron personnel and permits the aircraft to retain its conventional weapon capability when in a *Bullpup* configuration.

The Chief of BUWEPS made it clear in his letter that Chief Garbarini made a significant contribution to the efficiency of fleet operations and recommended that he receive a Commendation for Achievement.



HYDROSKIMMER, *a 62-foot-long, 22-ton ground effects machine may look like this when ready in mid-63. The* BUSHIPS *research craft to be designed and built by Textron's Bell Aerosystems Co., is expected to skim on a 24-inch air cushion over smooth water and flat land surface at speeds exceeding 70 knots.*

Transit II-A on the Job

More than 18 Months in Operation

After over a year-and-a-half of orbiting the earth, the Navy's *Transit II-A* experimental navigational satellite still is operating and transmitting information that is being used in development of a world-wide, all-weather navigation system.

The 223-pound, 36-inch trail-blazer was launched from Cape Canaveral June 22, 1960 to study the feasibility of the new Bureau of Naval Weapons navigational system. Since then *Transit II-A* has confirmed the practicality of satellite signals as a means of precise navigation, provided critical measurements of the effect of the ionosphere on such signals, and aided in calculating the shape of the earth.

Now *Transit II-A* is enabling scientists of the Applied Physics Laboratory (APL) of The Johns Hopkins University, prime contractor for *Transit*, to study long-term drag effects on satellites in high orbits. The long-lived sphere also has demonstrated reliability of internal components and durability of solar cells.

Operating only when it is in the sunlight, *Transit II-A* now apparently only utilizes energy it obtains from its belly-band of solar cells.

Transit II-A was the second in a series of five successful satellites developed for BUWEPS by APL. The satellites have demonstrated the practicality of an operational, navigational system that ships will be able to use to determine their positions any place on the earth to a fraction of a mile.

WHEN MARINE *Transport 131704 at Cherry Point made a training flight to Memphis, the crew on return learned they had completed 50,000 accident-free hours for VMR 353. Lt. M.M. Smith (2nd from left) was pilot.*

Weather Reports Advance

Antarctic Station Automatic Unit

In one of the most difficult places on earth in terms of weather forecasting, Antarctica, meteorologists and technicians of Operations *Deep Freeze* have installed a device to make the task easier: a nuclear-powered automatic weather station on the Ross Ice Shelf. A five-man crew buried the one-ton unit device in an eight-foot snow pit near Minna Bluff, 54 miles due south of McMurdo Sound.

In Antarctica, there are only 16 major reporting stations in an area much larger than the United States where there are some 450 weather stations. There is a critical need for weather information in Antarctica, particularly during the austral summer when the U.S. Navy conducts extensive flight operations for the resupply of inland scientific stations.

The only components to be seen above the surface of the snow are the antenna and meteorological sensing elements. The unmanned station collects temperature readings, barometric pressure, wind direction and wind speed. Collected data are transmitted in digital form to the McMurdo Station Weather Service Office every six hours. There Navymen correlate the information with data from other parts of the continent and prepare weather forecasts.

The weather station is an eight-foot cylinder containing insoluble strontium titanate which serves as an atomic generator, plus weather sensing and recording equipment, and radio transmitters.

Having no moving parts, the power generator operates on the principle of thermoelectric conversion. Energy is achieved through the slow decay of strontium-90 in the compound. The generator itself is about 21 inches high and 19 inches in diameter.

If all goes well, the power generator will need no servicing for at least two years. Built by the Martin Company of Baltimore, Maryland, for the Atomic Energy Commission, the unit could operate without refueling for up to ten years.

Mayor Rides Record Plane

Half-Millionth Landing Logged

The mayor of a quiet southern Alabama town found out recently how it feels to set an aeronautical record.

BREWTON MAYOR GETS COCKPIT X-OUT

The Honorable Philip May, Mayor of Brewton, Ala., was a passenger in a Navy training plane piloted by the Commanding Officer of VT-2, Cdr. Thomas Oxendine, when it made the half millionth T-28 landing at the Brewton airport.

The U.S. Navy has used Brewton Airport for bounce practice since 1943 and for T-28 landings there since 1956.

Ranger X.O. Proves Skill

Averts Emergency Crash Landing

Cdr. Howard Boydstun, Executive Officers of the USS *Ranger*, made an emergency landing while flying a TF-1 *Trader* at NAS CUBI POINT. His skill avoided injury to his crew and damage to the aircraft.

Cdr. Boydstun declared the emergency while on an inbound flight from Okinawa after futile attempts to lower the *Trader's* nose wheel.

In the Cubi tower backing up the TF's pilot was Cdr. G.F. Guyer, a pilot with vast experience in both TF's and S2F's. He suggested that the plane captain cut through the forward decking in the TF and kick the wheel loose. This was done and the dual wheels came down, but there was no indication that the locks were in place, and the wheels (see cut shown below) were turned 90° to the landing path.

SAFE—DESPITE THE TURNED NOSE WHEELS

Pilot Boydstun directed his crew to move most of the cargo aft and to station themselves there to act as ballast. This would allow him to set the ship down on its main gear and tail skag.

Cdr. Boydstun executed a perfect two-wheel landing, then gently allowed the tail to come down on the tail skag roller assembly. Immediately upon landing, the co-pilot, Cdr. D.M. Krueger, feathered and secured both engines while the pilot kept the nose wheel clear of the runway throughout the coasting stop.

Aside from the damage inflicted to the forward decking by the plane captain, there was absolutely no damage to the aircraft. The gear apparently jammed in the well sideways instead of fore-and-aft when it was raised.

New Iberia Men Commended

Rescued Aircraft Crash Victims

The Navy Commendation Medal has been awarded by the Secretary of the Navy to three Navy men for their courageous action in the rescue of personnel from a wrecked aircraft at Spanish Lake, near NAAS NEW IBERIA, La., on June 13, 1961.

The medals went to Lt. Donald E. Hines, flight surgeon attached to the station, Lt. Donald L. Miller, formerly attached to VT-27, and Arthur J. Hoeny, HM3, formerly attached to the New Iberia station.

Within three minutes of the crash alarm at the air station, the rescue helicopter, piloted by LCdr. A.E. Henke, was airborne.

Just before the arrival of the rescue team, Lt. Miller, student pilot in the rear compartment of the crashed aircraft, not seriously injured, managed to get to the cockpit which was almost completely submerged. Both pilots in front were under water and Lt. Miller went to their rescue.

He freed the pilots from their belts, and administered mouth-to-mouth resuscitation to one pilot while the other managed to keep his head above water.

The helicopter located the aircraft. Dr. Hines and Corpsman Hoeny were lowered to the water and repeatedly dived beneath gasoline and contaminated swamp water.

They persisted until both injured pilots and Lt. Miller, who also aided, were hoisted safely into the helicopter.

LETTERS

SIRS:

Grampaw Pettibone's blast entitled "Risky Business" in the January issue of *Naval Aviation News* and the embarrassing illustration of a fine Navy ship by a famous old Navy friend, Mr. Osborn, have falsely implied that this terrible accident happened on board the USS *Jupiter*, the only aviation supply ship in the United States Navy. "Great balls of fire!" What's happend to your accuracy?

The USS *Jupiter*, known as *Baka Hachi* in these parts, is the only United States Navy ship in commission carrying the AVS designation. The *Jupiter*, alias the "Crazy Eight," has done a few unusual things in her day. However, this is one crazy stunt we don't wish to add to our credit.

During *Jupiter's* 24 years, she has seen considerable service, and, to keep up with the times, she had a flight deck added in 1957. A total of 262 helicopter landings on board have been made with only the loss of a tail wheel by a whirlybird a couple of years ago to mar the record. We are looking forward to keeping the record this way for a happy cake-cutting at the first 1000th landing and many more thereafter.

Jupiter has a fully equipped helicopter platform with a trained and ready flight deck crew from director to "hot papa." She is also manned in part by aviation personnel, including qualified helicopter pilots. We are proud of her ability to undertake the helicopter replenishment of any big sister carrier that appears over the horizon. This has built our motto, "We Keep Them Flying."

Now that you know a small part of our duties, I'm sure you will understand our shock at your article and wipe this blotch off our record.

G. C. DUNCAN, CAPT.
Commanding Officer
U.S.S. *Jupiter* (AVS-8)

"There's a long story behind this, Captain. Boils down to the fact that ol' brownshoe, Gramps, plucked the designation "AKA" from the AAR and completely mauled the translation. He's reasonably contrite and willingly admits USS *Jupiter* handles her helo deck in a manner which softens his hardened heart.

SIRS:

We at NARTU MEMPHIS do not wish to claim an honor that possibly may not be deserved. We are referring to our article entitled, "Six-Month Trainee Gets Wings," on page 25 of your December issue.

In view of the fact that the Aviation Information Officer at NAS WILLOW GROVE has pointed out his installation enlisted the first six-month trainee in a Navy Flight program, we wish to withdraw our claim to the honor.

Nelson W. Gill, Jr., AE3, was qualified in every respect to wear his Navy Wings of Gold, with the exception of time in the program. We felt that since this was the only unsatisfied qualification, the story could be released. We were under the impression, of course, that Gill would be the first six-monther in the command to get wings.

We compliment Lt. J. Winsor Baker, Jr., for his alertness in setting the record straight in the matter.

B. W. ROSENBAUM, CDR.
Aviation Information Officer

SIRS:

Our hangar deck crew has made a record which we consider a truly significant achievement. This harried, hard-working, often unappreciated group has, to date, moved more than 2000 aircraft in two-and-a-half months without a single "crunch." I don't know whether other carriers keep records of this sort, but we are proud of ours and expect to see it soar to astronomical proportions.

It should be noted that, as flagship of Task Force Bravo, *Wasp* frequently operates in areas boasting somewhat less than ideal sea and weather conditions and, during the past two-and-one-half months, has deployed with the following heterogeneous assortment of aircraft: A4D, S2F, AD5W, TF, SNB, HSS-1/1N, HUP, HUS, S-62 (Sikorsky commercial helicopter), and a space capsule (full scale model).

R. P. BUERGER, CDR.
Assistant Air Officer

Pure Sparkling Sun on Demand

Now they've invented a sun machine to give pure, sparkling bright, cleaner than clean—and hotter than hot—sunbeams.

Scientists in the Astrionics Division of Aerojet-General Corporation invented the machine to learn more about the effects of the sun out in space, where it is "unfiltered" by any atmosphere such as surrounds the earth.

Using a high-intensity heat source—a carbon arc light like those used in searchlights—and focusing it through an optic system, they have duplicated sunbeams.

With this machine they can now determine the effects of this 10,000° F. intensity on men and machinery.

They want to know if this unfiltered sunny brilliance might blind man in space—or possibly even blind a satellite optic system.

They also want to know what effect the raw, unfiltered heat could have on various component parts of space equipment.

In addition to duplicating pure sunlight, the machine can also simulate the movement of the sun across the sky, horizon to horizon.

Products of this new research tool will include devices to protect man in space as well as equipment, including, quite conceivably, "sunglasses for satellites."

Photo Credit

Appreciation for furnishing the photos of World War I British aircraft published in the March issue is belatedly extended to Mr. J.M. Bruce of the city of Birmingham, England.

HU-4 Unit Assists Scientists

Air Flow Studies Done on 'Big E'

USS *Enterprise* (CVAN-65) recently underwent a series of tests to determine the effect that the radical structural design has on the air flow over the deck and behind the ship. Scientists and technicians from the David Taylor Model Basin accumulated wind data from 180 stations in the aircraft landing pattern behind the ship.

Pilots and ground crewmen from HU-4 out of NAS LAKEHURST were asked to assist the scientists.

Data were obtained by hanging a number of sensitive instruments in a bomb-like container 165 feet below a helicopter. Although actual test conditions cannot be controlled as well as wind tunnel conditions, the operation resulted in the successful accumulation of data in only one day of flying, just half of the expected time.

Wind information from these tests and a series of others is considered important not only to the pilots who will land on the "Big E," but to the deck personnel controlling the aircraft as well. Data will be used to determine the best "wind" to give pilots.

Control Center Phased Out

Change to be Complete July 1, '64

The Federal Aviation Agency will phase out its El Paso Air Route Traffic Control Center and assign the El Paso control area to adjacent centers. This consolidation is designed for safer, more efficient use of airspace.

The El Paso consolidation will be completed by July 1, 1964. The center's control area will be gradually divided and transferred to Albuquerque, Fort Worth and San Antonio centers.

The change is the latest in a series of nation-wide consolidations scheduled in line with a long-range realignment study of ARTC center control area boundaries. There are 29 centers in the 48 contiguous states.

As a result of this study, FAA recently announced that the St. Louis, Phoenix and Detroit centers will be phased out and their control areas combined with others. The four consolidations will result in annual operating savings of more than $3.5 million. Action has been under way since 1959 to phase out the Pittsburgh, Spokane and Norfolk control areas.

MARCH MARKED TWENTY YEARS FOR VR-1

Transport Squadron One

Convair R4Y-1 is flown on one of support missions

Douglas R6D is a transport VR-1 flies regularly

In 20 years, the squadron has logged millions of miles

'TWENTY YEARS OF SERVICE' was the theme of Fleet Tactical Support Squadron One's Twentieth Anniversary Celebration March 9th. The Navy's first transport squadron, VR-1, based at Naval Air Station, Norfolk, until July 1943 when it moved to its present home at Naval Air Station, Patuxent River, Md. Now under the command of Capt. Edwin L. Kiem, VR-1 continues to provide air logistic support for the forces of the United States Atlantic Fleet over the vast area of its commitments.

NAVAL AVIATION NEWS

At the White House on February 26, 1962, with President Kennedy and Vice President Johnson participating in the singular ceremony, LCol. John H. Glenn, Jr., places his name on the Explorers' Globe of the American Geographical Society. Dr. Charles B. Hitchcock, A.G.S. Director, assists the Astronaut. Other noteworthy signatures are those of Lindbergh, Stefansson, Amundsen, Earhart, and another famous Naval Aviator, RAdm. Richard E. Byrd. Glenn, who won his Navy wings at Pensacola in 1943, amassed a total of 5000 military flight hours and flew 122 combat missions in WW II and Korea prior to his selection as one of four Naval Aviators assigned to Mercury.