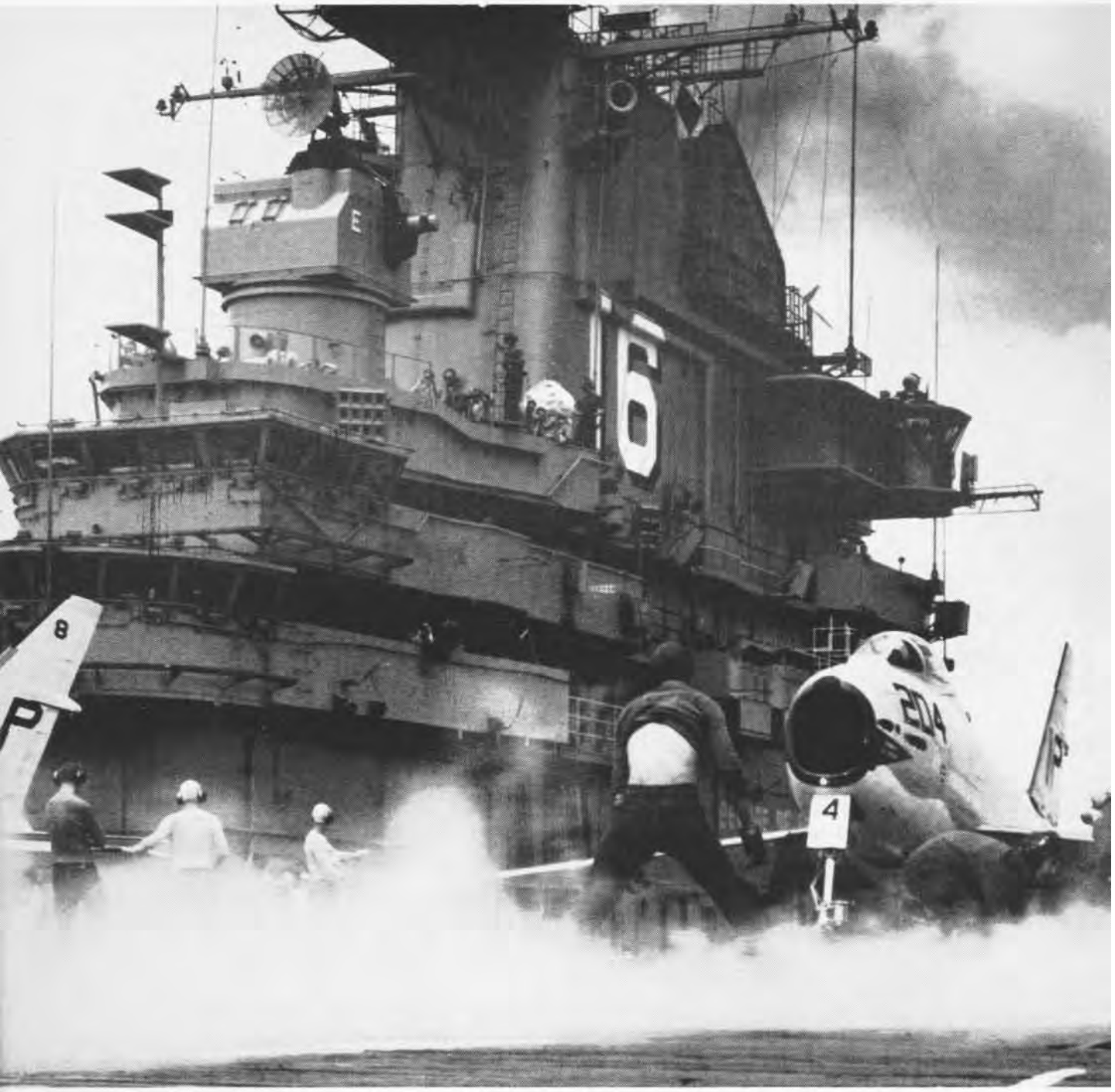
NAVAL AVIATION NEWS

41st Year of Publication

JULY 1960

NavWeps No. 00-75R-3

SHARE THIS COPY



TEAMWORK IS THEIR TRADEMARK

Few military operations demand the kind of teamwork involved in handling aircraft aboard a modern flattop. Over some 38 years, the personnel of deck crews have built an impressive reputation for speed and safety in the launch and recovery of aircraft. Where time is of the essence, sureness and skill are basic assumptions, and teamwork is the traditional trademark.

NAVAL AVIATION NEWS

FORTY-FIRST YEAR OF PUBLICATION, JULY 1960

■ IN THIS ISSUE

Pathway over the Pacific	**6**	*VAH-4's pioneering effort in working out a new, fast route to the Orient, via the northern Pacific.*
'Brains' at NRL	**12**	*The U.S. Naval Research Laboratory's use of young officer-scientists described briefly.*
Armed Forces College	**15**	*Fourth in a series of articles on schools for advanced military learning.*
Global Gallery	**20**	*Attack carriers' world-wide portraits.*
USS Independence	**22**	*An enthusiastic "And there I was" account of one day aboard CVA-62.*
Oriskany Today	**29**	*Reconverted carrier as it rejoins Fleet.*
Astronaut at AMAL	**30**	*LCol. Glenn is shown in various phases of test work at the Aviation Medicine Acceleration Laboratory at Johnsville, Pa.*
British 'Scimitar'	**34**	*British evalnation of one of their carrier-based fighter aircraft.*

■ THE STAFF

Cdr. E. G. Colgan	Head, Aviation Periodicals Office
Cdr. George F. Rodgers	Editor
Izetta Winter Robb	Managing Editor
Lt. B. T. Sullivan, Joseph E. Oglesby, JOCS	Associate Editors
Cdr. Oliver Ortman, Cdr. S. G. Parsons, LCdr. R. J. Massey, Harold Andrews	Contributing Editors
Ardis Pitman	Secretary
James M. Springer	Art Director

Use of funds for printing this publication has been approved by the Director of the Bureau of the Budget, 10 Feb. 1959.

Published monthly by Chief of Naval Operations and Bureau of Naval Weapons to disseminate safety, training, maintenance, and technical data. Send mail to Naval Aviation News, Op 05A5, Navy Department, Washington 25, D. C. Office is located in 3413 Munitions Bldg.; Telephone Oxford 61755 or 61880. Annual subscription rate is $2.50 check or money order ($1.00 additional for foreign mailing) made payable to Superintendent of Documents, Government Printing Office, Washington 25, D. C. Single copy, $.25.

■ COVERS

Appropriate to the July issue is the article entitled "Declaration for Independence" which begins on page 22. Naval Aviation News also celebrates the Fourth with a picture of Lt. J. H. Ward of VAW-12 as he touches down his radar-equipped, early warning WF-2 plane on the deck of USS Independence.

NAVAL AVIATION NEWS

VAdm. Thach Wins Award

Cited for Command of T. G. Alfa

Vice Admiral John S. Thach has been awarded the Navy League's Stephen Decatur award for his "outstanding personal contribution in the course of Naval operations which has advanced the readiness and competence of the Naval service."

His work as commander of Task Group Alfa from 1958 to 1960 was cited. He is now Commander Antisubmarine Defense Force, Pacific.

Task Group Alfa, under VAdm. Thach's guidance, pioneered new tactics and doctrine in anti-submarine warfare.

Fiddler Who Fiddles Not

Scores 61 of 94 for VT-3 Record

Lt. Jerry Loeb, a former concert violinist, set a new T-28 gunnery record at Whiting Field. He scored 61 hits out of 94 rounds fired for an average of 65%. The former VT-3 record was 40%.

He is the newest member of the gunnery squadron's instructor staff and had just completed his instructor training when he broke the old record.

NAS Jax Tracks Tiros

Camera Photographs Satellite

NAS JACKSONVILLE is one of the six military installations in the southeastern United States assigned the job of taking photographs of America's *Tiros* TV weather satellite.

A 35-millimeter camera has been set up at the Station's weather office in the operations building by the Signal Corps Research Center at Fort Monmouth, N. J. for the mission. The camera is operated by enlisted personnel attached to the local Navy weather office, with John Jones, AGC, supervising the operation.

The camera installed at the station is operated under the direction of officials at Ft. Monmouth, who will pass on the word that *Tiros* is overhead. Unprocessed film is forwarded to Ft. Monmouth. Automatic in operation, the camera shoots five-minute time exposures, 12 photos per hour.

The 270-lb. satellite, launched from Cape Canaveral on April 1, carries two TV cameras and records the earth's cloud cover continually.

Management Institute Held

Report Made Available to Public

A pilot Management Development Institute for commanding officers, executive officers, and other key officers of the Naval Air Training Command was held in Washington in May. The institute, first of its kind for CNATRA, was attended by 30 officers.

The June issue of the *Navy Management Review* is devoted entirely to material from this conference. If any command not now receiving the Navy Management Review desires to be placed on the mailing list, address requests to: Editor, Navy Management Review, Room 0137, Main Navy Building, Washington 25, D. C.

'Wind-up Keys' Installed

Will Double A4D Flight Range

"The smoking lamp is out throughout the ship while re-winding A4D's," was the word passed one fine morning by VA-15 to their cousin squadrons, VA-172 and VA-46, aboard the USS *Franklin D. Roosevelt*.

The occasion of this intra-Air Group

A4D SKYHAWKS AND THEIR WIND-UP KEYS

One harassment was Operation *Tinkertoy* performed by the AD-6 prop drivers of VA-15 during the FDR's current deployment with the Sixth Fleet.

Equipping the two squadrons of A4D's with a "wind-up key" was the work of VA-15's Lt. Gordon F. Udall and Jesse B. Hartley, AMC.

No ready reply was forthcoming from the A4D personnel, but the news of the day aboard the FDR was that "with in-flight re-winding, the range of the A4D will surely be doubled."

The *Valions* of VA-15 are silently standing by for the big counterplay.

VAH-8 Ends Deployment

Makes 4800-mile Formation Flight

Nine A3D *Skywarriors* of Heavy Attack Squadron Eight pointed their noses eastward for a 4800-mile formation Trans-Pac to end an eight months deployment in the Far East.

Aboard USS *Midway*, the "Fireballers" logged more than 2800 accident-free hours and 820 arrested landings during the deployment.

The homeward-bound flight was led by Cdr. Cyrus F. Fitton, squadron commander. The flight left the *Midway* three days out of Yokosuka and 2100 miles west of Hawaii.

From Barber's Point they proceeded in the same formation to Alameda, then to their home base at Whidbey.

Each plane displayed a multicolored drag chute for the landing at Whidbey. As the planes taxied toward their parking areas, the leading aircraft unfurled the squadron flag.

Flies 1000 Crusader Hours

Also Becomes F8U Double Centurian

LCdr. Jim Stockdale, until recently executive officer of VF-24, has become the first pilot to pass the 1000 flight hour mark in the F8U *Crusader*.

He was first checked out in the *Crusader* at Patuxent River in 1956 and logged his 1000th hour in April 1960 while flying a VF-24 F8U-2. He made 202 F8U carrier landings.

Landing Systems Ordered

Bell to Provide "No Hands" Gear

BuShips has awarded Bell Aircraft Corporation a $4.3-million contract for four "hands off" electronic airplane landing systems. Three will be installed aboard aircraft carriers, and one will be used at a land base for pilot familiarization upon delivery in 1961.

The AN/SPN-10 systems provide improved carrier-controlled approach capability through the incorporation of stabilized glide slope information, ship motion prediction, and improved precision radar.

Employing a combination of radar, radio and computers, the automatic landing system can fly an airplane to touchdown on a carrier deck without the pilot touching the controls.

At first, however, the Navy will use it for carrier control approach as a preliminary to incorporating it into an "All-Weather Return to Carrier System" which will permit fleet air operations under all weather conditions, including heavy fog or rain.

Under the latter concept, long-range and intermediate traffic control and guidance systems will guide airplanes within a few miles of the carrier and the Bell System would assume competely automatic control for the final approach and landing.

An important feature of the system is its ability to anticipate the roll and pitch of the carrier deck in rough weather and forecast whether or not a touch-down attempt should be made.

THESE CHIEFS' *hats are within reach for ten happy First Class Petty Officers on the USS Hancock, the 45,000-ton Alameda-based attack aircraft carrier. Signs indicate the effective dates for advancement. This year marks the greatest advance to the rate of Chief Petty Officer since the end of World War II. Representing over 100 years of honorable Navy service are: F. W. McDonnell, IC1, J. J. Goss, BT1, R. F. Smith, CS1, B. L. Stark, AO1, B. Viers, AO1, R. E. Casale, NW1, B. G. Hannon, SK1, M. H. McCoy, BT1, N. Roberson, SD1, and J. W. Swinney.*

Jackie Logs Another 'First'

Famed Aviatrix on Independence

Lipstick freshly aligned and her blonde hair newly combed, Jacqueline Cochran Odlum stepped lightly out of an A3D *Skywarrior* on the USS *Independence* on 15 June and became the first woman to arrive aboard a U.S. carrier in a jet.

Her arrival was observed by 70 members of the Navy League, the Air Force Association, and the Association of the Army who were aboard the giant attack carrier on an overnight cruise to view carrier operations and become acquainted with the latest antisubmarine tactics and techniques.

Miss Cochran was flown aboard Independence by Cdr. D. A. King, Jr. The flight, originating at NAS Floyd Bennett, was made at 18,000 feet at a speed of 580 knots and required 70 minutes to complete. A return flight was made the same day.

The famed aviatrix, a former winner of the Bendix Race and the first woman to break the sound barrier, was greeted by VAdm. R. B. Pirie, DCNO (Air), VAdm. Robert Goldthwaite, CNATRA, and RAdm. Ray C. Needham, Commander Carrier Division Two.

The carrier, USS *Independence*, is commanded by Capt. James W. Grady.

JACQUELINE COCHRAN *is greeted on USS Independence (CVA-62) after Skywarrior arrival off East Coast. Center, she walks with RAdm. Ray C. Needham, ComCarDiv Two. At right, she discusses "first" flight with her pilot, Cdr. D. A. King, Jr. and VAdm. R. B. Pirie.*

GRAMPAW PETTIBONE

No Know—No Go

A TV-2 on a cross-country flight reported into the traffic pattern at an East Coast air station. As he lowered the wheels for a practice GCA, oil smoke filled the cockpit. Declaring an emergency, the pilot made an immediate landing.

The oil filler cap was found to be off, and two quarts of oil were required to refill the tank. Otherwise the TV was O.K. The ground crew refueled all except the tip tanks. The pilot then made an unsuccessful search for the passenger he had been scheduled to pick up, decided to RON, and turned in at the BOQ.

Early next morning he made a good preflight inspection of his aircraft and filed his flight plan for the trip home. Still no passenger to be found.

Engine start was normal but after receiving taxi instructions and clearance he was informed of a 30-minute wait caused by a fouled runway and shut down again. Later, after receiving a green light from the tower, he restarted, taxied out, checked fuel boost pumps and transfer on all tanks, and completed his check off list. Oil pressure had dropped to "zero" at idle RPM but came up to 55 lbs. at 70% power. Seemed O.K. to him.

He made a normal and uneventful take-off but approximately four minutes later while flying just under the overcast at 1500 feet, the engine started running rough. He gently eased off some power, felt the engine smooth out, and started a gentle turn back to the airfield.

As he came out of the turn, the engine unwound quickly, the tachometer showing 6%, but no red lights showed in the cockpit. Fuel totalizer showed 730 gallons. With his left hand he gang-barred the fuel switches, with his right he switched IFF to "emergency." Easing the nose up to trade excess speed for altitude, he tried one re-light, but was unsuccessful. Since he was entering the overcast, he popped

the nose over and started a descent at 210 knots.

Suddenly he realized he was over water and low. He thought only of ditching the TV-2, but a quick look at the many small fishing boats on the river ahead changed his mind; he decided to eject.

Easing the TV-2 back up to level flight, he pulled up both handles of the seat and fired the canopy. He then pulled what he thought was the trigger but nothing happened!

Airspeed had now dropped off to 150 knots in level flight as he finally decided to roll it inverted and bail out. His oxygen hose was now disconnected, shoulder straps and lap belt released. The pilot rolled the TV-2 inverted and started to slide out of the seat, but found himself held back by the right shoulder harness strap, which was caught on his Mae West!

Quickly he rolled the plane right side up, released the snagged shoulder strap, saw at a glance he was at 800 feet, and rolled inverted again.

This time he fell clear, pulled the "D" ring and with a great feeling of relief felt the chute blossom immediately. He had a good chute, so pushed back in the harness and unsnapped the leg straps and chest buckle. A moment later he hit the water and slid out of the chute. Rescue was accomplished by an oyster boat in a matter of minutes, his only injuries a few abrasions.

Grampaw Pettibone says:

Bust my blood vessels! This lad had all the indications of a main bearing failure, also every indication of fuel exhaustion caused by failure of the tips to transfer. Recommended procedure for the TV-2 is to gang-bar the fuel switches for take-off. Do you suppose the line crew failed to fuel the tips that morning? We'll never know.

Investigation revealed that this pilot had only 59 hours in the TV in the last three and a half years! This just isn't enough to be thoroughly familiar with the cockpit, airstart, or emergency procedures. The ejection system is a USAF type and requires a good, closely supervised check-out. This pilot was squeezing the trigger guard, not the trigger. Pretty sad.

Absolute minimum oil pressure at idle RPM for the TV-2 is 2 PSI, recommended is 7 PSI, and the gauges are red-lined accordingly. Max is 50 PSI at maximum continuous cruise power settings.

This pilot better read the handbook or he's gonna end up spread all over the landscape. He lucked out this time.

Sad Tale

A multi-engine flight instructor and his student taxied out to the duty runway in an SNB-5, ready for a pre-solo training flight. Both the student pilot and his instructor had done a careful pre-flight inspection of the *Beech* and followed the pre-start and before-take-off check-off lists to the letter.

The SNB checked out perfectly and the student, in the left seat, added take-off power after receiving tower clearance. It was a smooth take-off run, but as he brought the tail up at about 40 knots, the SNB settled hard,

ILLUSTRATED BY Oplom

the main landing gear retracted, and with its props flailing the runway, it slid to a screeching stop on the fuselage and engine nacelles. All switches were cut; fuel and throttles, off.

Both pilots, another student, and a maintenance man who was riding as a passenger to check the landing gear operation, (this was a test hop after installation of a new landing gear switch) abandoned the *Beech* as soon as possible and awaited the arrival of the crash crew. Fortunately no one was injured.

Grampaw Pettibone says:

Oh my achin' blood pressure! What a soul searchin' those two pilots musta done as they looked at that busted bird on the runway? It'd give anybody a guilt complex, especially when the AAR board hits the scene!

Fortunately for them, some intelligent checkin' on the part of AAR board revealed that some idiot had wired the new landing gear switch up BACKWARDS! On the take-off roll, as the oleos extended, the safety microswitches were opened, the circuit activated, and the gear retracted.

If there's one basic maintenance rule that should NEVER be violated, it's the one requiring a drop check after a change of ANY component of the landing gear! This wasn't done here or the accident *never would have happened!* Is YOUR outfit takin' this kind of shortcut? Let's hope not!

Belly Whopper

After a very thorough flight briefing, two FSU-1P photo *Crusaders* taxied out and took the runway at their Far East base. They were scheduled for an instrument training flight, so this was to be a section take-off.

They taxied into position, the wingman lining up in a port wing position since there was a left crosswind. After a full power turn up in positions and a "thumbs up" from the wingman, take-off roll was initiated, both pilots releasing the brakes and going into afterburner simultaneously.

The take-off roll was normal although the wingman had considerable difficulty with glare from the sun and had to lower his visor. Both aircraft flew off at the same time, the wingman maintaining a position slightly stepped down. As the wingman saw the landing gear of the lead aircraft start to retract, he raised his own gear as briefed.

The sun glare made it difficult to maintain position, and a slight porpoise started. The *Crusader* lightly struck the runway before complete recovery was effected. The pilot used considerable back stick pressure but it wouldn't come unglued.

The FSU continued to scrape its belly down the runway and the pilot, glancing at the airspeed indicator, saw 180 knots and decided not to abort!

Still more back stick would not raise the nose, but when the stick was brought back sharply through the last inch or two of travel, the tail struck the ground, and the *Crusader* flew off!

On climb-out with the plane vibrating heavily, he came out of burner, left the wing up, and slowed to 160 knots. The vibration eased up considerably at the slower speed. At this point, he called his section leader, told him he had apparently scraped his gear doors on take-off and asked for a visual check.

The leader slid into a wing position and reported the lower landing gear doors were hanging and the entire belly and tail were scraped, from forward of the nose wheel to the tip of the tail cone.

They were too heavy to land so the section leader told him to "dirty up," dump wing fuel and burn down the aft cluster fuel before attempting a landing. Some 40 minutes later, down to 4000 pounds of fuel, he made a normal approach and landing.

Grampaw Pettibone says:

Great gallopin' gollywobs! This U-bird probably has got the most-scraped-up-belly since the night our old swimmin' hole went dry unexpectedly. It's a rugged aircraft, but nobody ought to test the manufacturer's guarantee this hard. Leaving metal on the runway for 1000 feet is pretty brutal, and most birds won't take it.

Raising the gear just because the leader has his wheels comin' up with no indication you're comfortably airborne yourself is just plain foolishness. Add the sun shining in your eyes from right over the leader's plane, and you've a bad situation starin' you right in the face. Second guesses are easy, but if you were a man who "thinks for himself," you would have deliberately let him pull ahead a hair, eased off to the left, lost a little pride, but saved your belly. You were lucky.

This air station requires jets to remain below traffic pattern altitude until clear of the pattern. They should take another look at this course rule. An FSU in burner accelerates so fast after lift-off, you "invite" trouble by keeping him low. A pilot has to get the gear up, wing down, and come out of burner almost immediately. You've exchanged one hazard for another.

THREE VAH-4 SKYWARRIORS RENDEZVOUS ABOVE NORTH PACIFIC. SQUADRON'S MISSION LED TO PIONEERING ROUTE TO JAPAN.

PATHWAY OVER THE PACIFIC

By Ltjg. Gary C. Caron, VAH-4

RECENTLY a Navy bomber crew ate breakfast in the States, had a "snack" in Alaska, and arrived in Japan in time for lunch to pioneer a new "Pathway over the Pacific."

Pilot of the sleek Douglas A3D *Skywarrior* was Cdr. John J. Emanski, Jr., who originally proposed the northern Great Circle trans-Pacific route to the Orient via Alaska and the Aleutians.

The twin-jet attack bomber lost a day in crossing the international date line and made the trip in approximately 10 hours and 45 minutes elapsed flying time.

Other crew members included LCdr. Charley Boldt, assistant pilot, Ltjg. Gary Caron, radar bombardier, and Chief Aviation Fire Control Man, Vince O'Brien, navigator.

Cdr. Emanski is Commanding Officer of Navy Heavy Attack Squadron Four, based at NAS WHIDBEY ISLAND.

STUDIES on the feasibility of flying a North Pacific track to the Orient began at Whidbey in the spring of 1959, under the operational direction of RAdm. John W. Byng, Commander Fleet Air Whidbey.

The flight climaxed months of extensive research and preparation by the VAH-4 and ComFairWhidbey operations staffs.

At Whidbey, replacement A3D's were frequently needed by Air Groups in WestPac "Mo Skosh." But the procedure of delivering them via the Navy's accepted trans-Pacific route usually required considerable time and expense.

The trip involved several days (sometimes weeks) delay at Alameda awaiting favorable winds over the Pacific prior to launching for Barber's Point. From Hawaii, the trip became a puddle-jumping jaunt over numerous scattered small islands out in the Pacific—Johnson, Kwajalein, Midway, Guam, Wake, etc.

CDR. EMANSKI (L) WELCOMED AT ATSUGI

At best, the circuitous trip covered some 7000-odd miles, and necessitated up to five separate take-offs and landings after departing from Whidbey Island.

Maintenance, particularly on the elaborate electronic, communications and navigation systems used in high speed jet aircraft, does not exist *per se* at many of the stops en route.

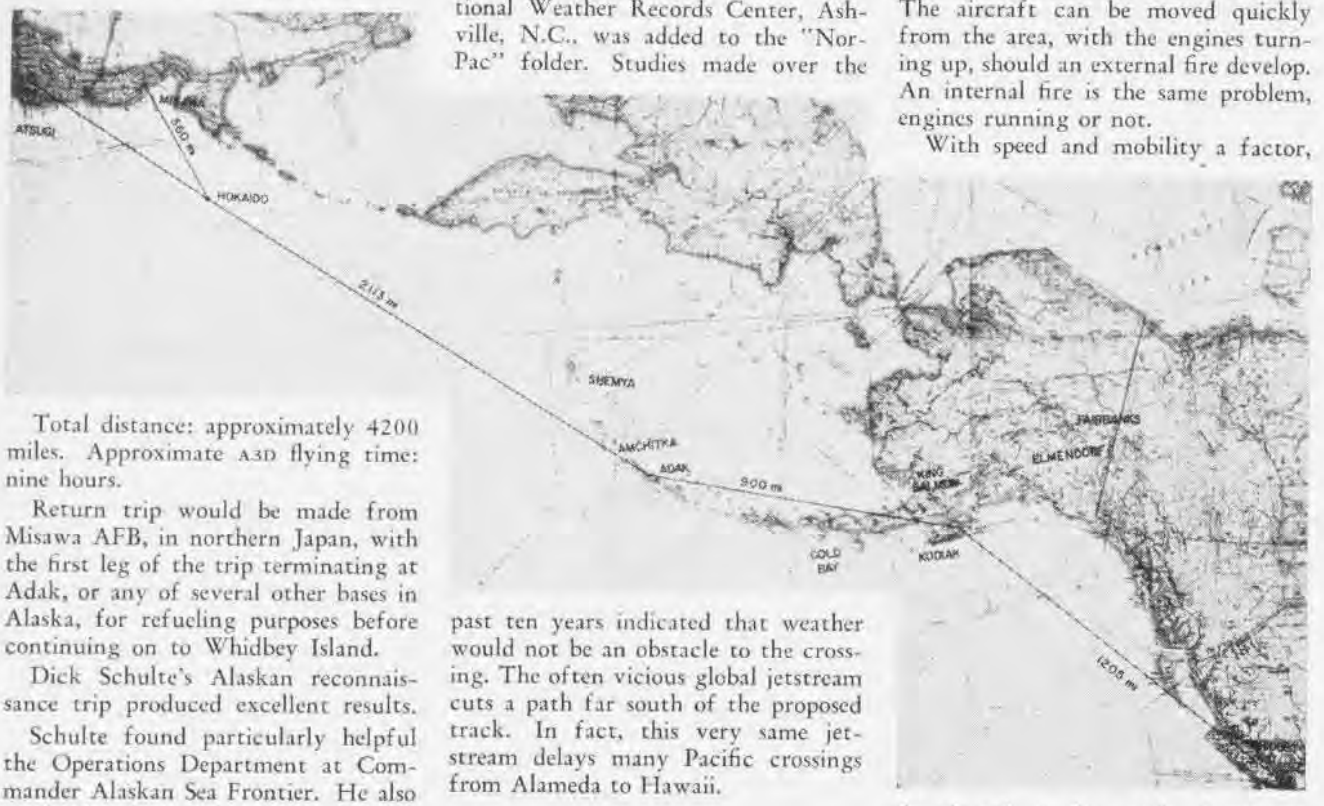
The problem was something of a personal matter to VAH-4.

Heavy Four supports the Navy's small 27C *Essex*-class attack carriers and, as such, may maintain several different detachments out at sea at any given time. The parent squadron remains stateside. While other bomber squadrons might take their entire stock of *Skywarriors* with them on deployment, Four is faced with the continual threat of having to supply a replacement bomber for one of the smaller carriers.

VAH-4 received permission from ComNavAirPac to conduct a study on

the problem. Shortly thereafter, Lt. Dick Schulte, Four's able young operations "Troubleshooter," was on his way to Alaska to gather information on the proposed Great Circle "Nor-Pac" route to Japan, via Alaska and the Aleutians.

The plan was this: launch from Whidbey and overfly Alaska to the far tip of the Aleutians; land at Adak Island out on the end of the chain to refuel; fly a Great Circle track from Adak into NAS ATSUGI, Japan.



Total distance: approximately 4200 miles. Approximate A3D flying time: nine hours.

Return trip would be made from Misawa AFB, in northern Japan, with the first leg of the trip terminating at Adak, or any of several other bases in Alaska, for refueling purposes before continuing on to Whidbey Island.

Dick Schulte's Alaskan reconnaissance trip produced excellent results.

Schulte found particularly helpful the Operations Department at Commander Alaskan Sea Frontier. He also received substantial assistance from the Air Department and Aerology Offices at both Kodiak and Adak Naval Stations and the operations departments at King Salmon and Elmendorf AF Bases.

Pilots in VP-17, then based at Kodiak, offered information not readily available in the published handbooks. Veteran UF, R5D and P2V pilots in the area also added many "unpublished" tips on Aleutian flying conditions.

Schulte scrounged information and photographs on all available emergency fields and airstrips in the Alaskan area. Many of the fields are long-abandoned WW II runways now in a miserable state of neglect. But a flat piece of land looks better than a cold stretch of sea to a bomber crew in an emergency situation.

At Shemya, a bleak, desolate isle far out on the tip of the Aleutian chain, the Northwest Orient Airlines precision GCA team (actually only one man) has become legendary among pilots flying in the Aleutian area, as have the outstanding GCA units of Adak, King Salmon, and Elmendorf.

Weather and climatological information, prepared especially by the National Weather Records Center, Asheville, N.C., was added to the "Nor-Pac" folder. Studies made over the past ten years indicated that weather would not be an obstacle to the crossing. The often vicious global jetstream cuts a path far south of the proposed track. In fact, this very same jetstream delays many Pacific crossings from Alameda to Hawaii.

ADAK WAS to be the final "jumpoff" point, for striking out on the 2100-mile overwater leg to Japan. Many good arguments supported this decision. Adak is almost an exact mid-point (2100 miles, either way) between Whidbey and Atsugi. In addition to its excellent GCA facilities, Adak generally rates as the best all-weather field on the Aleutian chain and utilizes an unpublished jet approach procedure. Aerology briefing facilities at Adak are outstanding, and the weather-guessers there exceptionally well-qualified. The station is also headquarters for the Western Aleutian Search and Rescue Unit. And, equally important, Adak has jet fuel.

Adak, however, did not have available a jet starter of the type used by A3D's. Because of this, it was recommended that refueling be conducted on the end of the runway with engines still running to provide power for the refueling operation.

There are few additional dangers and many safety advantages involved in refueling with engines running.

Electrical power (AC and DC) must be used in either case, so the electrical fire potential remains the same. The aircraft can be moved quickly from the area, with the engines turning up, should an external fire develop. An internal fire is the same problem, engines running or not.

With speed and mobility a factor, the aircraft is alive with all systems functioning. By not shutting down, the chances are good that the plane will remain "up" if it was in such a status upon landing.

These and other proposals concerning the trip were included in a packaged report submitted by VAH-4 to the Commander, Naval Air Forces Pacific Fleet, in the summer of 1959.

ASSIGNMENT of the flight crew was never in doubt. VAH-4, after proposing the idea and having done all the advance legwork on the project, supplied both pilots and bombardier/navigators who were to make the trip. Selection of the crew was based upon such factors as general experience,

LCDR. BOLDT CHECKS MAINTENANCE ITEMS WITH SHOP PERSONNEL

RADM. JOHN W. BYNG, COMFAIR WHIDBEY, POINTS OUT ROUTE

command decision ability, pilot proficiency, maintenance background, radar technical knowledge and navigation skill.

Both pilots, Cdr. Emanski and LCdr. Boldt, are veteran bomber pilots, each with well over 3000 hours flying time in their logbooks. Both flew AJ *Savages* back in the dawn days of Navy Heavy Attack, and both now possess well over 700 hours in the A3D.

Cdr. Emanski had already skippered the squadron to the 1959 Air Pac Bombing Derby championship and—subsequent to the NorPac flight—would also lead his troops to victory over the East Coast in the heavy attack bombing phase of the 1959 Naval Air Weapons Meet.

LCdr. Boldt is generally conceded to be the best all-around A3D Maintenance Officer in the business.

Radar and navigation work in the crew would be handled by squadron bombardier/navigators who were rated statistically the top men in their trade, in Air Pac, at the time.

All four of the crew were experienced heavy attack crew members, having made numerous deployments and "Transpac" crossings before. Cdr. Emanski and LCdr. Boldt had, in fact, piloted heavy bombers across both the Atlantic and Pacific.

ALTHOUGH any of VAH-4's aircraft could be considered capable of making the trip, the crew voted sentimentally to take Old Number Twelve, the famed "Goosed Moose," a magnificent flying machine renowned for its mechanical reliability and consistent lack of "downing" discrepancies.

This plane was equipped with an upper bomb-bay tank which provided ample fuel reserve and allowed room for a GTC-85 jet starter to be mounted in the bomb-bay for use in event of emergency (a wise precaution as later events were to show.)

Eight portable 514 cubic-inch "walk-around" oxygen bottles with regulators were carried in the bomb-bay to preclude the possibility of loss of oxygen during the flight.

Radio communication equipment aboard the aircraft included the very high frequency, ultra high frequency, high frequency, low frequency "bird-dog," and ultra high frequency homer. Crystals on the VHF and HF receivers were pre-set to the civilian and military frequencies which would be used throughout the flight.

Component parts for the plane's radar system were carried for installation at Adak in case of failure or malfunction in the radar bombing/navigation gear. Since the radar was not being counted on as the primary means of navigation, loss of the "TV Set" would not necessarily have caused cancellation of the flight.

The aircraft was equipped with two Kollsman celestial periscopic sextants.

Survival gear carried for the trip included such normal Navy overwater equipment as .38 caliber revolvers for each crew member; extra food and cans of juice; canteens of water; PSK-2 (personal survival kits) and first aid packets; quick-don cold weather exposure "poopy suits;" hunting knives, and such additional personal items as each crew member deemed necessary.

LCdr. Boldt supervised the pre-mission maintenance preparation of the airplane. All radios and electronic navigation aids were given a final peak-up to perfection, which included a high altitude test hop.

The aircraft was thoroughly ground and air tested for any possible discrepancies in the fuel transfer and electrical systems. Radar, RMI and magnetic compasses were given final recalibration swings.

PRIMARY MEANS of navigation on the flight would be pressure pattern lines of position, using the aircraft's radar system to obtain accurate altitude settings. In brief, the pressure pattern system gives a reliable and accurate indication of the planes' deviation, left or right, of track through comparison of pressure vs. radar altitudes.

On the first leg of the trip—Whidbey to Adak—radar would be of some use in flying down the Aleutian chain. For the second half of the flight, Amchitka Island (approximately 120 miles west of Adak) would provide the only radar fix on the route.

The crosshairs on the aircraft's optical bombing system were employed to obtain a running drift check except when heavy cloud cover prevented observation of whitecaps on the water.

A daylight flight was planned for arrival at Adak under the best possible

conditions of visibility. Since neither pilot had flown into the field before, this was an added safety precaution. However, this limited celestial navigation to the observation of sunlines of position.

A Great Circle navigation track, which included heading changes for every five degrees of longitude, was planned. Aerology winds are predicted in five-degree zones across the Pacific, so the great circle system did not seriously increase the DR navigation work load.

Advance navigation preparation was so thorough that two separate sets of charts and running logs were compiled in order to familiarize the crew with each mile of the route. This inspired LCdr. Boldt to frequent moments of fairly eloquent heckling about the "cluttered up cockpit."

Chief "Red" Barber (now Ens. Barber), a veteran West Coast B/N and an instructor attached to VAH-123, assisted in the navigation plans, and stood by in the event either bombardier/navigator became ill prior to launch.

All position reports were filled out beforehand with a complete summary of the desired information listed. In accordance with standard flight manual procedures, position reports were given over all normal reporting points and at each five degree change in longitude. For each report, primary, secondary and tertiary frequencies were listed on each of three different radios (VHF, UHF and HF).

Pre-flight planning called for the assistant pilot to handle most of the outside voice reports and communications, and also to maintain the fuel cruise control howgozit. This system was carried out successfully on the trip, and it allowed the pilot to devote his full attention to driving the aircraft.

Both Cdr. Emanski and LCdr. Boldt spent hours studying the approach and let-down plates for the various Alaskan and northern Japan fields. The pair memorized dozens of photographs and charts on the Aleutian strips and now may well be the only pilots in Navy Heavy Attack to know the location of every mountain and flat strip of land, from Anchorage to Attu. They were absolutely determined to know their route thoroughly.

BY THE MORNING of 27 October 1959, all possible pre-flight preparations were completed.

The weatherman now held the secret to the success of the mission.

ComFAirWhidbey established a ceiling of 1000 feet and two miles visibility at Adak as the acceptable minimum weather conditions for launching from Whidbey. No less than 400 feet and one mile would be accepted before a final penetration would be made.

An accurate terminal forecast at Adak would be necessary for the safe launching of the flight. A favorable six hour Adak forecast which will hold is the key to the entire trip.

In the event of rapid terminal weather deterioration, the A3D should normally be capable of making the round trip from Adak back to King Salmon.

A special firm six hour terminal forecast was requested and received from Adak.

At 23 minutes after eight on the morning of the 27th, Cdr. Emanski lifted the heavily-loaded bomber off the deck at Whidbey and began climbing on instruments through thick, dark rain clouds.

Above 25,000 feet, the tops were scattered and broken.

Cdr. Emanski leveled off at 34,500 feet over Vancouver Island. Fuel consumption figures checked out as planned. The aircraft would be fed a gradual cruise climb diet for the remainder of the flight, gaining altitude slowly as excess fuel was burned off.

A final departure radar fix was obtained over the point of Cape St. James, on the southern tip of the Queen Charlotte Islands, and the Whidbey Wanderers were on their way.

The VHF frequency of 126.7 was the most useful communications channel for position reports along the Canadian coast and Alaska. Flight following on UHF frequencies by GCI sites was similar to the U.S. procedures and, as expected, UHF communications were no problem.

Forecast winds for the first leg were generally good, except for the area between Cape St. James and Kodiak. Flight following fixes and pressure drift navigation checks indicated that the plane was approximately 25-30 miles to the right of track. A corrective heading change was made and, soon after, Kodiak was picked up dead ahead on radar. Kodiak radio informed Cdr. Emanski that the Adak weather was holding good, and the flight continued on down the chain.

There being no published jet approach or penetration into Adak, a modified low frequency approach plate was agreed upon. This consisted of a standard tear drop penetration on either the Tacan or UHF homer from an initial altitude of 20,000 feet on an outboard heading of 000°. The penetration turn commenced at half altitude plus 2000 feet (12,000 feet) and brought the aircraft in to hold at 7000 feet on a course of 210° until

WITHIN 45 MINUTES, REFUELING AND ALL OTHER SERVICES WERE COMPLETED AT ADAK

CREW MEMBERS ON THE BIG NORPAC MISSION WERE EMANSKI, BOLDT, O'BRIEN, AND CARON

picked up by Ground Control Approach.

However, on this pioneer flight, Cdr. Emanski made a straight-in descent to the GCA pick-up point. A GCA approach was then made to runway 23 down to an altitude of 800 feet where a left turn was given for a right hand landing approach.

The normal wave-off or missed approach procedure at Adak calls for a standard left turn. With the field being physically located between several menacing hills, a turn would not be advisable in the A3D which turns slowly but climbs fast. A safer maneuver would be to pull up straight ahead, climb to 7000 feet and box around for another approach.

Fuel had been no problem, on this first half of the trip as the reliable old "moose" eased into Adak with a comfortable reserve aboard.

A fuel truck greeted the plane on the end of the runway. All other services requested were available, and the aerological brief was from the standpoint of coverage and accuracy, best of the entire flight.

Exactly 45 minutes after the original touchdown, the big bomber was rolling down the runway again and this time LCdr. Boldt was at the controls and Atsugi, Japan, was the destination. From here on in, the mission was strictly a "no sweat" proposition.

The crack Northwest Orient Airlines operator at Shemya picked up all of the aircraft's position reports and, communications being so good, carried on something of a running conversation with the crew all the way across the ocean.

Adak aerology's winds held good, but pressure pattern lines of position, crossed with sunlines, indicated that the airplane was on track and on time. Use of the optical bombing system also showed the winds to be drifting the aircraft as predicted.

A humorous aspect of the position report problem involved the relaying of the information back to Commander, Fleet Air Whidbey. The phrase "ComFAir Whidbey" completely faked out several of the native Japanese operators. "Whidbey Flight Following" was hastily submitted as a substitute, to enable the folks back home to keep posted on the plane's progress.

The landing at Atsugi was made without incident, 11 hours and 30 minutes elapsed time out of Whidbey.

After paying their respects to Adm. Nation at ComFAirJapan Headquarters, all hands retired to the base "Hotsey Bath" to steam out.

On recommendation of Adm. Nation, the return trip was made from Misawa AFB, in Northern Japan, to King Salmon AFB, Alaska. This proved that the flight back to the states can be made safely into King Salmon, or any one of several other Alaskan bases available, should Adak's weather be sour.

Departing from Misawa on the morning of 31 October, the flight doglegged to Hokaido intersection, and then progressed via the Great Circle to Adak. Although the weather at Adak was excellent, the flight continued into King Salmon.

After a two-hour delay at King Salmon for servicing (engines shut down), the flight continued direct to Kodiak and then via the Great Circle into Whidbey. The jet starter carried in the bomb bay was used to fire up the jets at King Salmon.

On landing at Whidbey, the crew immediately laid claim to some sort of international speed distance record—having left Japan on Saturday morning and arrived in the U.S. on the Friday night before. Flight time for the return trip was eight hours and 24 minutes.

FIRST FLIGHT HAD TOP GROUND SUPPORT

THE SUCCESS of the NorPac flight cannot be measured in terms of "speed" records alone. From a practical viewpoint, the flight provided a somewhat dramatic demonstration of the "globility" potential of Navy heavy attack. Within a few short hours, a jet attack bomber had been delivered from a base here in the states to the Seventh Fleet. An entire squadron—or even a complete Air Group—could just as easily be moved.

The safety advantages of the NorPac route are almost too obvious to mention: complete overwater communications throughout; excellent weather reporting facilities; GCI radar flight following over most of the track; only one refueling stop necessary; numerous emergency and alternate airfields available; and minimum of crew fatigue (roughly nine or ten hours in the air).

The pioneer A3D flight may have paved the way for increased aviation operations in the Northen Pacific area. Since this proof flight, other A3D *Skywarriors* have joined the Seventh Fleet by way of the shorter and safer northern "Pathway over the Pacific."

F4H

ON THE GROUND *and in the air, extensive, thorough tests continue on the Phantom II. Above, an airframe, scheduled to spend its life in McDonnell's structural laboratory, is set to determine strength for high sink rate landings. Below, a test F4H airplane is about to release an external store (additional to Sparrow III missiles) to check separation and drop characteristics. Movie cameras, mounted just under the wing-tip, photograph the separation.*

YOUNG MEN, BIG BRAINS AT NRL

At the Naval Research Laboratory, a command where brains are working tools, a small group of young Naval officers are using some king-sized wrenches.

They are part of a Navy program designed to select outstanding college graduates and place them where they can do the Navy and the nation the most good.

One of them, Ens. R. L. Blake, 26, B.S. in physics from Rensselaer, made national headlines when he developed a camera which could photograph the sun during a period of intense flare activity. He used an x-ray camera in which aluminum coated plastic membranes covered pinholes to replace conventional lenses. The camera was strapped to the side of an *Aerobee Hi* rocket and launched to an altitude of 130 miles above the New Mexico desert. Photographs showed regions in the sun's atmosphere seven times hotter than the sun's core.

Ltjg. T. R. Cass, 23, M.S. in metallurgy from the University of California, is experimenting with "super" metals which will stand up under the extreme stresses of high speed aircraft and space vehicles.

Ltjg. L. E. Bryant, 24, M.S. in nuclear physics from Vanderbilt University, wears three hats as health physics engineer at NRL. He helps to solve any problems which might affect the health of persons working around NRL's pool nuclear reactor or in High Voltage areas, and is responsible for providing safety badges, dosimeters, etc., used in tests for radioactivity. He has already designed a counter which is used to identify alpha rays and measure the distance these particular rays extend from their source.

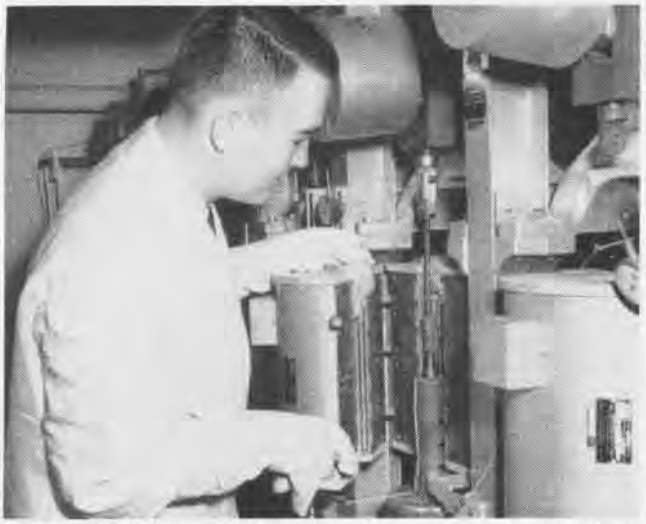
ENS. BLAKE *studies film which recorded x-ray distribution across sun during solar activity.*

Ens. M. D. Montgomery, 24, M.S. in scientific and electrical engineering from Stanford University, is experimenting with tunnel diodes in the solid state branch of the electronics division. His goal is to develop ways to improve the amplifiers used in radar and radios. If successful, the project will permit smaller, simpler-to-operate, more efficient radars and better miniature communications equipment for satellites and rockets.

Ens. P. B. Ulrich, 23, B.S. in physics from Yale University, is making precise measurements of electron beams. He uses an intense electron gun which he designed, a long drift tube with negative focusing, and a recording probe which sweeps back and forth across the beam to display the resulting particle density on a recording scope for measurement.

Ens. J. M. Yarborough, 24, M.S. in electrical engineering from Stanford University, is assigned to the lab's underwater sound division, electronic applications branch. The project he is currently working on cannot be described for reasons of security, but it deals with the programming of precise facts, so that certain events will take place according to an exact schedule. He has designed a digital timer which is accurate to one part in a million.

The six 1959 college graduates who form the contingent at NRL are not exactly pioneers. When the Navy was placed in charge of Project *Vanguard*, ten hand-picked young Naval officers were ordered to NRL for duty. Of the ten, six stayed on, either at NRL or in a related government agency when they completed their military tours. One extended his military tour



SEEKING HIGH *strength alloy, Ltjg. Cass prepares to test relative strength of oxide bond in nickel and nickel alloys in split furnace.*

LTJG. BUCHANAN *checks visible and infrared transmission on a spectrophotometer. He calibrates radiometers in various space satellites.*

in order to remain on an NRL project.

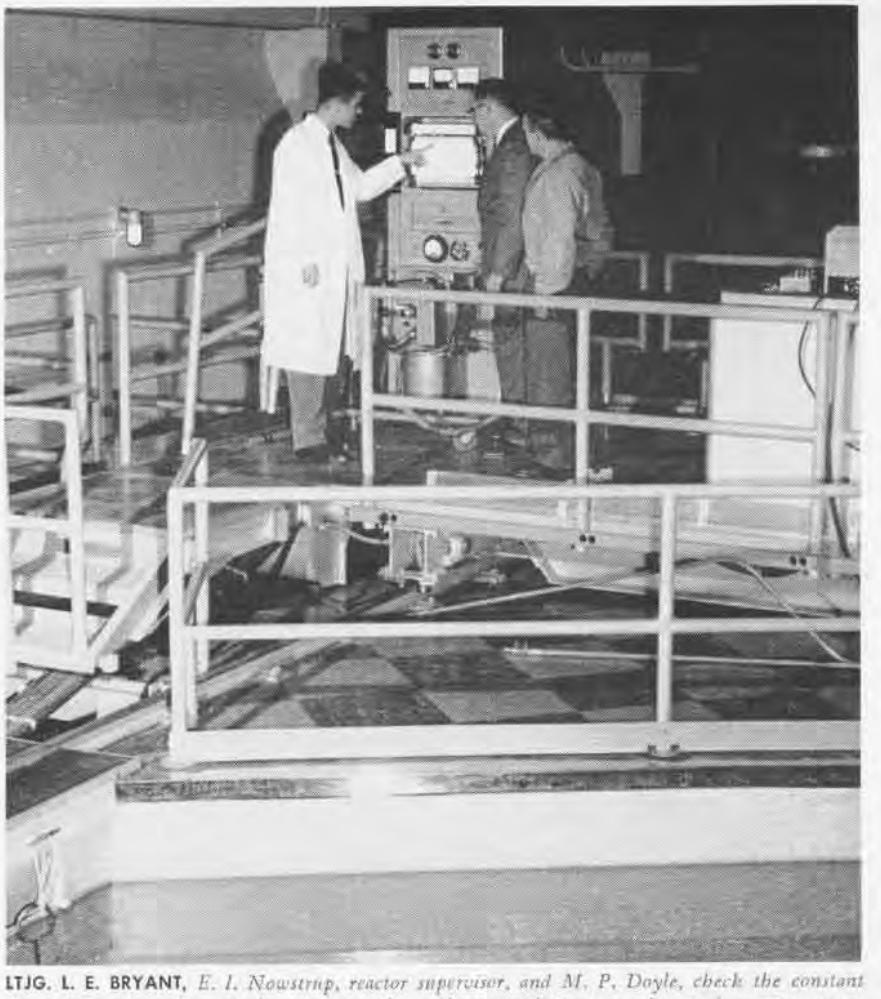
Other bright young men have come to NRL by "special request" of the scientific staff. One of them, Ltjg. Joel P. Stinson, 25, B.S. in mechanical engineering, University of Maine, has made a significant contribution to the Navy's space surveillance program.

Another, Ltjg. William B. Buchanan, 24, B.S. in optics from the University of Rochester, is assigned the task of calibrating instruments which are to be installed in satellites for measuring radiation in space.

Ltjg. Albert J. Martin, 24, B.A. in mathematics/physics from the University of Mississippi, is the holdover from *Vanguard*. His job now is to make mathematical calculations for problems related to space surveillance. A typical problem confronting him is: Where will a certain satellite be at a given time, so that the fleet can take advantage of the knowledge to take evasive action, observe communications blackout, use the information for a navigational fix, or obtain a weather report from it.

How do these "upstarts" fit into the staid, learned fraternity of "hard core" civilian scientists at NRL? Here are various reports from the technical directors of the divisions to which the young men are assigned:

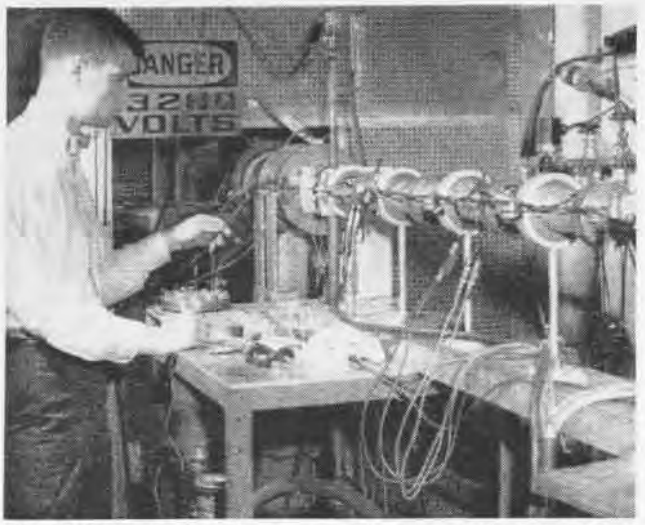
"He is making excellent progress with the military problem assigned. He is a hard worker, a good cooper-



LTJG. L. E. BRYANT, *E. I. Nowstrup, reactor supervisor, and M. P. Doyle, check the constant air monitor recorder which measures the airborne radiation in the pool reactor room.*

USING THE ALPHA *particle range determination device with radiation counter and recorder. Ltjg. Bryant identifies which alpha particle emitting isotope is in sample.*

BRYANT USES *hand radiation monitor to test shielding for gamma rays near the base of the pool reactor.*



ENS. ULRICH *makes an adjustment to the magnetic lenses on intense electron gun in order to make precise measurements of electron beams.*

THE ELECTRON GUN *has a probe which sweeps the beam and displays the resulting particle density on recording scope for measurement.*

ator, concentrates on the job, and requires little supervision."

"He is industrious, sharp, cooperative. He has a definite potentiality for original work."

"This officer has made excellent progress. He is cooperative and carries through on problems."

". . . is extremely cooperative, well-liked, and intelligent."

"Industrious and cooperative, he carries the load and shows excellent professional growth."

"His training was curtailed because he already thought like a professional. He has initiative and quickly grasps situations."

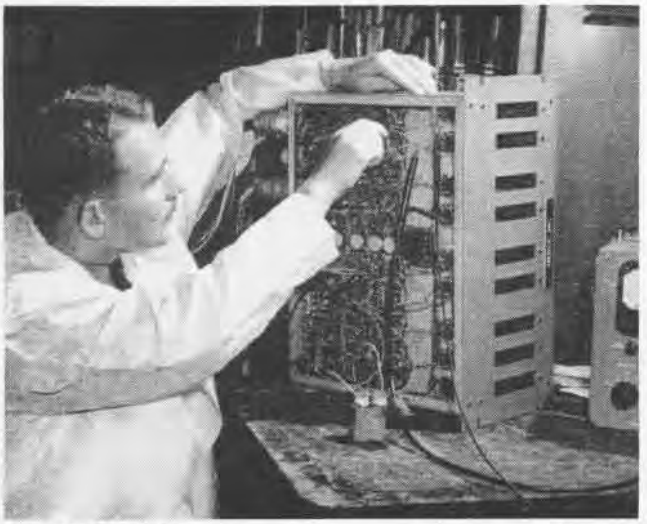
Is there a hint of jealousy among the old-timers because the young men have been given such vital projects at their age and experience levels? Absolutely none. The senior scientists are strongly back of the program. They wish it could be expanded.

So much for brains. What type of Naval officers do they make? Being identified as an elite group, are they prone to get swelled heads? Cdr. W. P. Reuland, NRL Administrative Officer, answered these questions.

"We've had no morale or disciplinary problems with the group. The only disciplinary concession we make is that we permit them to wear civilian clothes on the job. And they fit right in with the civilian scientists. Apparently they are so thoroughly occupied with their scientific projects they give little thought to their status."

The officer-scientists get regular military watches, he continued, just as do all junior officers at NRL. "If any one aspect of their watchstanding ability has impressed me," said Cdr. Reuland, "it is their maturity. With a minimum of indoctrination they stand an excellent watch. The snap decisions they must make as duty officers reflect great maturity."

They never beef about standing a watch, he paused, "except when their watch falls on an evening when they have exams scheduled. Then what they want is a swap, not a replacement."



ENS. YARBOROUGH *makes an adjustment in the circuitry of a time storage unit he designed for a problem in underwater sound approach.*

ENS. MONTGOMERY *measures noise voltage in tunnel diodes which are being studied in order to build more efficient communication equipment.*

ARMED FORCES STAFF COLLEGE

JOINT STUDY GROUP ATTACKING A PROBLEM DEALING WITH THE ORGANIZATION OF UNIFIED COMMANDS CONSTITUTES TYPICAL SCENE

EVERY FEBRUARY and August, Naval Aviators join representatives of the other United States military services, of many of the allied nations and several government agencies, to begin a five and a half month course in joint and combined operations at the Armed Forces Staff College, Norfolk, Virginia. These officers, with proved staff and command leadership potential, comprise the student body of the only United States service school which deals with operations at the unified theater and major joint task force level.

Established in 1946 under the technical direction and supervision of the Joint Chiefs of Staff, the Armed Forces Staff College was set up to provide an inter-service educational system which would help remove the operational difficulties encountered during WW II that were attributable to lack of understanding of the other services' mission, strategy and tactics. Responsibility for the administration and maintenance of the facilities was assigned to the Chief of Naval Operations, and the site selected had formerly been used as the Norfolk Naval Receiving Station.

The first class convened in February 1947 and there have been 26 groups since. Graduates now number close to 5000, including more than 600 Naval Aviators. During the past 13 years, the school has continued to broaden in scope and in size. Today, approximately 200 students attend each semi-annual session, which is an increase of 35% since the College opened. There has been a corresponding increase of more than 50% in the number of Naval Aviators per class.

In addition to the U.S. officers of all branches, Australian, British, Canadian, French and New Zealand officers are admitted as Allied observers. The Department of State, Central Intelligence Agency, National Security Agency and the U.S. Information Agency also send representatives as regular students.

ADMINISTRATION BUILDING OF THE SCHOOL

The college is organized as a joint military command. The position of Commandant, filled by a general or flag officer, is rotated among the services. He is assisted by three high-ranking Deputy Commandants from the other branches. Today MGen. John S. Upham, Jr., USA, is commandant; RAdm. William M. Nation, USN; BGen. H. L. Neeley, USAF; and Col. E. R. Posell, USA, are the deputies. The 60 faculty members consist of equal numbers from all the armed forces.

The mission of the institution, as prescribed by the Joint Chiefs of Staff, is "to educate selected officers in joint and combined organization, planning, and operations, and in related aspects of national and international security in order to prepare them for duty in all echelons of joint and combined commands." Since the officers attending the school are presumed to have both the ability and the desire to learn, they are allowed as much intellectual freedom as possible. They question guest speakers freely and discuss controversial issues frankly and objectively.

While the syllabus is centered on

A PERISCOPE IS EXPLAINED TO ARMY MEN ABOARD USS CUTLASS

OFFICER OF USS NEWPORT NEWS EXPLAINS FIRING MECHANISM

MARINE CORPS PILOT GIVES RUN-DOWN ON NAVY AD SKYRAIDER

THE FORMER COMMANDANT AND DEPUTIES TACKLE PROBLEMS

operational planning, it also provides instruction in strategic considerations in the fields of geopolitics, economics and sociology. The students thereby gain an understanding of a complete joint operation from the planning phase through execution and evaluation, as well as many of the non-military aspects involved.

The faculty is divided into seven sections: personnel and civil affairs, intelligence, plans and operations, logistics, communications and electronics, research and development, and academic planning. The program of instruction falls broadly into four phases: introduction, orientation, joint and combined planning and operations, strategic considerations. The introduction provides the necessary background by explaining the course objectives and the methods of instruction. During the weeks devoted to orientation, which is aimed at defining the functions, organization, capabilities and limitations of the three military services, the students themselves serve as instructors. In turn, members of the Army, Navy with Marine Corps, and Air Force, discuss the strong and weak points, the mission and organization, of their respective services. This concentration on each of the individual branches not only enlightens, but also clarifies the thinking of the officers making the presentations. Group projects are another effective aid to increasing understanding. For example, the Navy will provide hypothetical problem situations to illustrate the coordination and employment of many different types of naval commands in a major fleet exercise or operation.

The third phase begins with the organization of unified commands and familiarization with the documents used in planning joint operations. Using the seminar method, the specific structure of the unified command is carefully studied and analyzed. Then, each work unit is given three problems to resolve, each one dealing with a different area of the planning procedure. A final problem is a complete exercise. The student officers take over key command and staff positions, develop the schedule of split-second coordination, and work up the OpPlans. Upon completion, the solutions are constructively critized by the faculty and other

study groups and so everyone profits.

The final phase of the curriculum, strategic considerations, stimulates an awareness of international trends that influence the world picture. These studies, as a result, provide a basis for an appreciation of the factors involved in the formulation of national policy. Lectures and discussions emphasize the importance of certain widespread areas and consolidate thinking about our actual or potential allies and enemies. As unresolved issues and new developments are studied, each student has an opportunity to indulge in imaginative thinking leading to concrete contributions in new concepts of future joint and combined operations.

The mechanics of instruction are built around morning lectures and afternoon seminars. Faculty and guest lecturers cover salient topics of both military and non-military nature. Question and answer periods follow each talk, so that the students may gather additional information and background material.

At the Staff College, the seminar plan is used extensively. Divided into study units of 15 which include representatives of all services, the officers form different groups for each phase of instruction. This day to day exchange of ideas and experience on such a widespread scale is extremely profitable to all concerned. A thesis or staff study must be completed by each individual before graduation.

Field trips supplement classroom work. For this facet of the syllabus, the Armed Forces Staff College has an ideal location because of its proximity to so many major Navy, Army, Air Force and Marine Corps activities. Norfolk is headquarters for Commander-in-Chief Atlantic and Commander, Naval Air Forces Atlantic and offers ready access to operating units of the fleet. The Continental Army Command is based at Fort Monroe, only 20 minutes away. Langley AF Base is the home of the Air Force Tactical Air Command as well as the National Aeronautics and Space Administration's Research Center. The Naval Amphibious Command at Little Creek is but a stone's throw away. The international command of the Supreme Allied Commander, Atlantic (SACLANT), also in Norfolk, affords the students an opportunity to study first-hand one of the top-level NATO commands.

In addition, cruises are made on board submarines and aircraft carriers, and tours are conducted through guided missile cruisers and destroyers. Classes normally visit such out-of-the area installations as the Headquarters of the Strategic Air Command in Omaha, Nebraska, the Army Infantry Center in Fort Benning, Georgia, and the Marine Corps Base at Camp Lejeune, North Carolina.

While they attend the school, Naval Aviators and Air Force pilots are provided aircraft for maintaining flight requirements by the flight section of NAS NORFOLK's operations department. For those qualified, jets are available at NAS OCEANA.

An expansion and modernization program is now underway for both living and administrative facilities. The first step will be a new academic building which will house 18 seminar classroom, student study rooms, an auditorium which can seat 700, a 150,000 volume capacity library, a map and chart room and offices. However, the temporary structures that have been in use have not interfered with the establishment of firm and fine traditions in inter-service education.

"A basic requirement for national security is unity in all principal features of military activity. In this spirit, the Armed Forces Staff College plays a vital role," so wrote President Eisenhower on April 21, 1958. The school is striving to build greater mutual understanding and a stronger groundwork for cooperation among the services. "That All May Labor as One" is more than the College's motto; it is the primary goal.

NAVY, MARINE CORPS, ARMY AND AIR FORCE OFFICERS ARE PRESENTED DIPLOMAS AT GRADUATION CEREMONIES FOR 26TH CLASS

HIGH AWARD FOR 'SENSE' PAMPHLETEER

IN A CEREMONY on 17 May in the office of VAdm. R. B. Pirie, Deputy Chief of Operations (Air), the Navy's Distinguished Public Service Award was given in honor of the late George Harding Foster, Sense Pamphlet writer.

The citation for the posthumous award, signed by the Secretary of the Navy, stated that it was given "for Mr. Foster's outstanding contributions to the Department of the Navy in the fields of flight safety and aviation training. Through his unfailing understanding of the problems ever present in military flying, Mr. Foster consistently provided timely and pointedly humorous texts, bringing to the readers the salient points in a manner most easily understood and retained."

After describing the great contribution Mr. Foster had made to Naval Aviation, Admiral Pirie pinned the medal on young Ned Foster, the 13-year-old son of the writer, and gave him the framed citation. Mrs. Foster, her other son, Billy, and her brother, William Hudson, were present on this occasion.

Mr. Foster was the second member of the partnership of Osborn, Foster and Smith, a company which has produced all the Sense Pamphlets for Naval Aviation since World War II. Mr. Foster served the Navy in the Reserve in WW II during which he advanced to the rank of lieutenant commander. In the early part of the war, he served as an air combat intelligence officer with a patrol squadron. Later, in 1944, he came to DCNO(Air) and was a Sense Pamphlet writer from then on.

Mr. Foster, at the time of his death on 26 November 1959, was a professor at Washington and Lee University, Lexington, Va., where he had been a faculty member since WW II. He earned his doctorate degree at the University of North Carolina.

In 1954, Naval Aviation News reported: "He has the proud record of having produced more Sense Pamphlets than any other writer connected with Training Lit." And this number was greatly augmented in the years since that statement was made.

NAVAL AVIATION WRITER FOR 15 YEARS

Mr. Foster's work was marked by brilliancy, wit, and thoroughness. Though not a Naval Aviator, Mr. Foster handled each subject so accurately that no pilot found his work anything but authentic. Many of the Sense Pamphlets at the end of WW II and all of the Aviation Training Sense Pamphlets since 1946, as well as all those revised and brought up to date, were written or edited by Mr. Foster.

In a steady succession of Sense Pamphlets, Mr. Foster revealed an increasing facility to deal with difficult concepts in such a way that pilots would get the word, heed the warning and escape the fate of witless Dilberts. Under such titles as *Instrument Flying Sense, GCA Sense, Swept and Delta Wing Sense,* and *Night Flying Sense,* Mr. Foster packed urgent instructions.

Since 1957, these Sense Pamphlets have been released by DCNO(Air): *Carrier Sense* which gives a convincing and informative run-down on the optical landing system; *Ditching Sense* and later *Bail-Out and Ejection Sense* which give the latest words on survival procedure in the jet age; and *Shark Sense, Simulator Sense,* and *Collision Sense* which were among the last Mr. Foster wrote.

VADM. PIRIE PINS MEDAL ON NED FOSTER

The pamphlets Mr. Foster produced since 1954 were the products of a perceptive, gifted writer. What was said of one Sense Pamphlet applies to all those written during these years; "The style of George Foster's writing is not conducive to putting the booklet down, and the Bob Osborn drawings really get across the ideas. Anyway you look at it, it's bound to hit home and set you to thinking."

Flight Trainers Rebuilt

Mechanicsburg Technicians Do Job

Free life insurance for a large number of Navy pilots is underwritten each year by the Training Device Division at the Mechanicsburg Naval Supply Depot. The Division, under the supervision of Warrant Officer Emil J. Welk, rebuilds, modifies and tests flight trainers, the "proving ground" or "survival station" for the Navy's pilots.

The trainers are Operational Flight and Tactics Trainers or Flight Simulators of actual Navy aircraft, according to Welk.

He said it is the job of his division to rebuild the trainers entirely, complete with all new modifications that have been designed for the type of aircraft which the trainer represents.

Welk's "ground crew" recently rebuilt and modified a $400,000 P2V-5 Flight Simulator.

Welk estimates that about 11,000 hours were logged by the "ground crew"—technicians and engineers of the Training Device Division—rebuilding and modifying the P2V-5 trainer. About $30,000 was spent for material for the job, while the total cost for overhauling and modernizing the trainer, including labor, approximated $70,000, he said.

The P2V-5 trainer passed its final operational acceptance tests and was accepted by Naval Training Device Center representatives. It was transported by commercial carrier to a naval air station on the West Coast.

NAVAL RESERVES ASSIST IN CORNELL DEFENSE STUDY

AERIAL PHOTOGRAPHERS *load equipment into photo plane prior to their mapping mission.*

NAVAL AIR Reserve Wing Staff-83 at NAS NEW YORK assisted Cornell University, Ithaca, N. Y., in a study to determine what an upstate New York industrial community can do to protect itself against the effects of nuclear warfare.

Air Wing Staff-83, commanded by Cdr. F. S. Schauffler, provided aerial maps for the project. Cdr. Schauffler was assisted by Cdr. R. L. Finucane, and LCdr. B. L. Elias, AWS Photographic Officer.

During a drill weekend, AWS-83 personnel made more than 300 photographs of the designated upstate area. The following weekend, the photographic department at NAS NEW YORK processed the photos.

The photos and maps used in the Cornell University study of subterranean city planning for civil defense against nuclear warfare established soil classification, surface rock, drainage, slope and vegetation in Schoharie County, 35 miles from Albany.

The study was made under the direction of F. W. Edmondson, Professor of Architecture at Cornell, to determine the feasibility of placing a hypothetical manufacturing plant, employing 1500 workers, underground. International Business Machines Corporation provided the hypothetical site location data and plant design data to be used in planning the facility. The study also included planning for protection of the support community with a total of 9000 inhabitants.

Entrances to the underground part of the installation are located conveniently to all parts of the above-ground portion of the proposed plan.

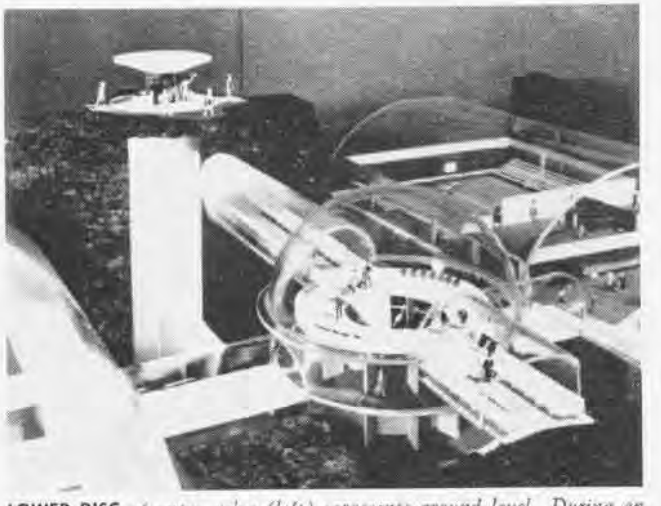
CDR. FINUCANE (L), *R. J. Eckman, PH2, and Cdr. Schauffler in SNB-5P used by AWS-83.*

All construction shown in the Cornell model would be of reinforced concrete vaults and domes. The underground complex would be completely air-conditioned and is designed to filter out particles of radio-active fallout materials and biological warfare agents, as well as to retain and neutralize chemical warfare agents. Closed-circuit TV designed to serve the school system would readily be converted to use for both entertainment and education during sub-surface isolation periods.

Like all the facilities in the underground part of the city, the transportation system tunnels serve more than one purpose. In case of disaster, the seatway system could be stopped, the seats dismantled, and the corridors used for living space.

Results of the Cornell study were introduced at the United Nations Plaza to representative of some 90 organizations and members of the press.

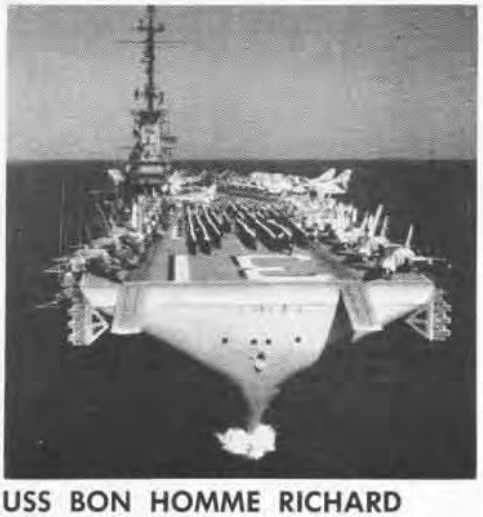
PROFESSOR EDMONDSON *points out installations at the hub of the above-ground portion of the plan for a nuclear-attack-protected city.*



LOWER DISC *of entry valve (left) represents ground level. During an attack, upper disc would move downward and entrance would be sealed.*

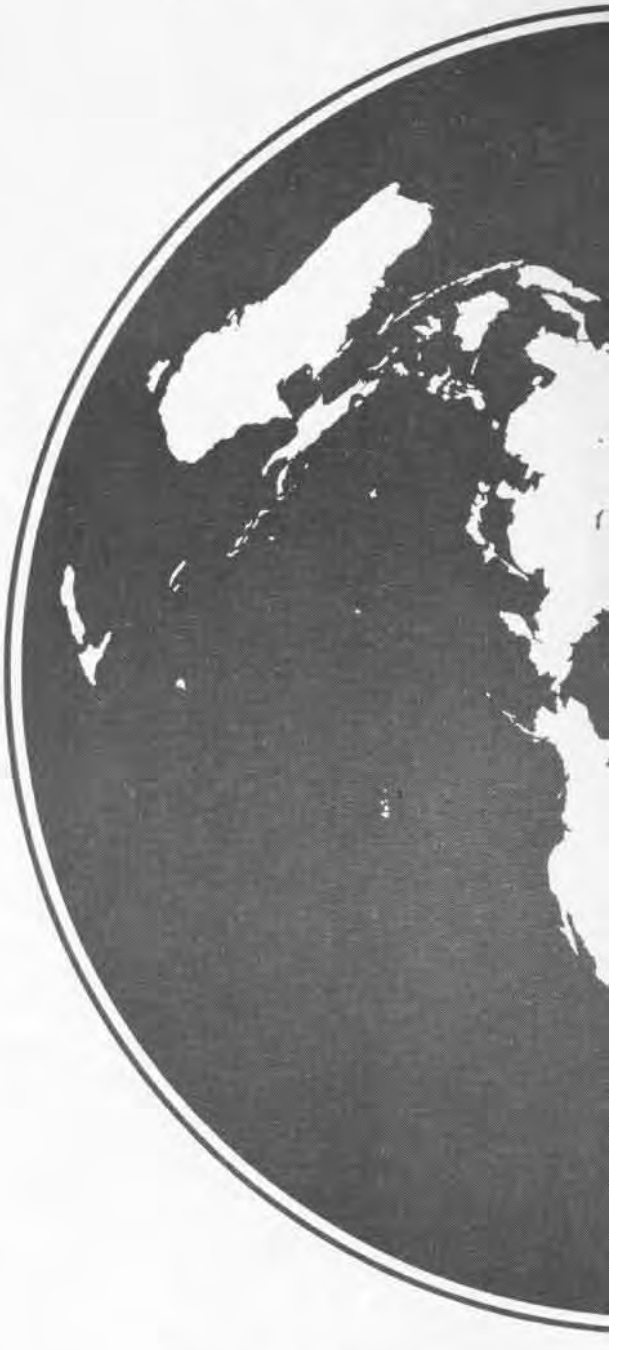
USS LEXINGTON

USS RANGER



USS BON HOMME RICHARD

GLOBAL

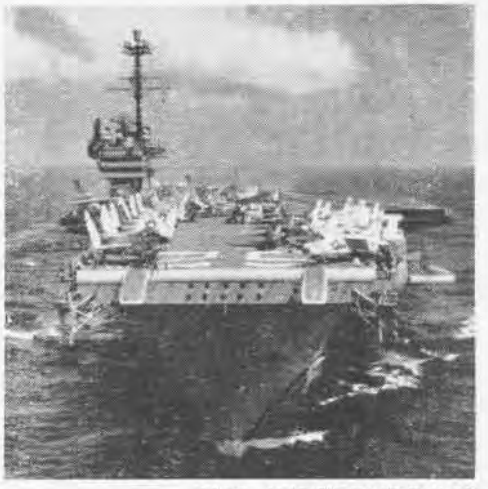


Power in the Pacific or Muscle in
will, she's an awesome argume
out three-quarters of a troubled w
around-the-clock availability for
Lebanon and Formosa, her ver
manned the attack carrier, unde

GALLERY

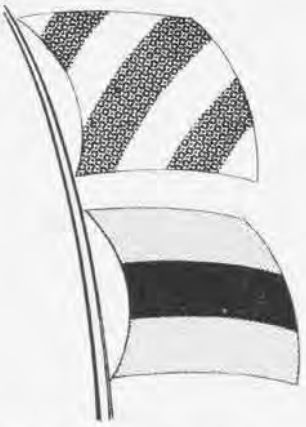
Med—call the attack carrier what you afloat wherever she may be. Through-d, she maintains constant vigilance and y eventuality, large or small. At Suez, ile aircraft, and the skilled men who ored the meaning of the word *Readiness*.

USS SARATOGA



USS INDEPENDENCE

USS FORRESTAL



DECLARATION *FOR* INDEPENDENCE

Now I AM not a Naval Aviator, and unfortunately never will be, but for the past several years I've been closely associated with the flying branch of the Navy. I celebrated the commissioning of the Super-*Sara* and watched the conversion of the illustrious *Essex*. I saw the F4H come and the F7U go, and have marvelled at the revolution in training techniques.

All this time I've been laboring under a big disadvantage—an almost total lack of exposure to the operating forces (You know how it is with a desk job in Washington!). The deficiency was finally remedied in first-class fashion last spring. I spent a routine working day underway aboard USS *Independence*, CVA-62.

An official request was forwarded, and ultimately, all the via's having come through with affirmative endorsements, permission was granted. I flew down to Norfolk.

A TF from FASRon-3 awaited me there. The plane captain, 6000 pounds of *Crusader* parts and yours truly were the main cargo. I wondered about rescue priority in the event of a crash. However, it was a smooth flight, and I learned that from 800 feet up a 60,000-ton carrier actually does look like the proverbial postage stamp. We caught the wire at 0915. It was a famous first for me.

Some 70 miles off the Virginia coast *Independence* was cruising and honing up for LantPhibEx 1-60, a large scale amphibious maneuver. The first launch of the day had just taken place.

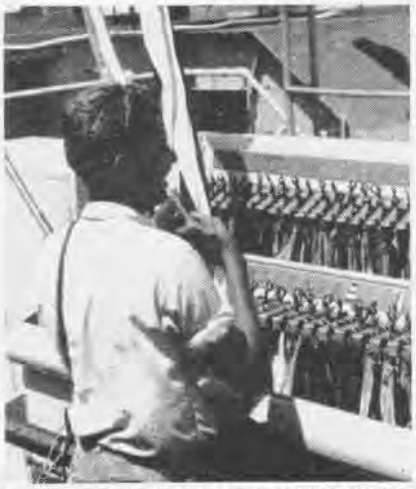
We (an escort officer, LCdr. Ben Macon and I), made a quick trip to the bridge, where I paid my respects to Capt. James W. O'Grady, the commanding officer. He interrupted his busy schedule to extend a cordial "Welcome Aboard."

The next stop was a visit to Cdr. Ralph Elliott, X.O. of the big ship. The carrier had gotten underway two days before, on a Monday A.M. to boot, with an unprecedented AWOL-ism of one. The executive officer's pride in the morale of the crew was visible and understandable.

At the end of the call, I was led to engineering spaces far below the main deck. Impressive is the word for Central Control with the countless dials and gauges that operate and monitor the main propulsion plant, electrical and air conditioning circuits, as well as water and hydraulic systems. Even the damage control diagrams on a ship the size of the *Independence* are pretty formidable. A conversation with Cdr. Mike Lilly, Chief Engineer, had to be cut short because we were due in Pri-Fly to watch the first recovery and second launch of the day.

During the long journey topside, I became fully aware of the immensity of the carrier. It takes time to get oriented, let me tell you. I also noticed a number of startled stares and double takes by personnel encountered in the passageways, but figured that the men seldom saw dress blues with overseas caps at sea.

We arrived at primary flight control three minutes before launch time. The activity on the four-acre flight deck had reached a peak of intensity. A *Skywarrior* was poised on number one cat. The *Crusaders* on 2, 3, and 4 seemed to be champing at the bit. Within the



SIGNALMAN AT FLAG BAG HOISTS PENNANT

A VF-84 F8U-2 CRUSADER IS POSITIONED FOR LAUNCHING FROM THE PORT CATAPULT

glass-enclosed, air-conditioned, soundproof compartment, skilled men sorted the radio chatter and responded, gave orders, synchronized the time. Finally, Cdr. Gerald Peddicord, the air officer, gave the familiar command, "Launch Aircraft!"

Within seconds the three F8U's were hurled from the deck followed by the A3D. With unbelievable speed, four more jets were spotted and flung into the air. *Skyhawks* had replaced *Crusaders* on Number 3 and 4 catapults, and before the second volley I paid close attention to the silent conversation between pilot and catapult officer. The exchange of hand signals, precise and meaningful, assured complete preparation for the firing.

Finally, the last AD-6 *Skyraider* took to the air under its own power. It's amazing how those prop-jobs can get airborne in less than 500 feet. Just ten minutes after the first cat shot, a *Crusader* was recovered. The arresting wire had barely snapped back into place, when a second hit the deck, followed in rapid succession by the rest of the incoming aircraft.

There was one bolter. A jet missed the wire, touched down briefly and took off smoothly from the angled deck. The entire maneuver was reflex action and revealed in a split-second the long hours of training that went into making each movement automatic for the pilot.

When the last *Spad* was on deck, the word was passed "All the birds are in the nest." Activity on the flight deck stopped as if by magic.

The first exposure to air operations purportedly stirs the stoutest hearts. I was no exception. Throughout the entire stay in PriFly I was literally slack-jawed. The launch and recovery sequence was a study in synchronization. The proficiency of the personnel and the power of the planes produced a picture that made me proud to be a member of the same organization.

Logically, a ready room visit followed. We arrived just in time to get in on Cdr. Dick Jester's debriefing session with the VF-84 *Crusader* pilots who just landed. (Again I noted looks of surprise when I entered.) One of the innovations is a TV screen which automatically shows weather data, ship's course and speed, and the other usual info at the moment it is being typed in other parts of the carrier.

USS INDEPENDENCE, LIVING SYMBOL OF THE MOTTO SPELLED OUT ON THE FLIGHT DECK

There was a quick trip to Ready Three, used by the *Sidewinders* of VA-86 and then on to CIC for a run-down on dead reckoning tracers, plotting boards and radar repeaters. The eerily lit nerve center with its hushed air of efficiency is always an impressive spectacle.

Enroute we had stopped at the compartment that holds the Number Two catapult machinery, where I met Chief Aviation Boatswain's Mate H. A. Fischer who triggers the cat. He explained each piece of equipment and reviewed the launch sequence, showing how each hand signal on the flight deck is converted to a mechanical direction below, which fires the catapult at exactly the right moment.

Before lunch at high noon there was just time to go through the well-equipped photo department headed by LCdr. Barney Smith. It's a busy shop. Motion pictures which must be processed in short order are taken of all airops, there is special equipment for instantaneous development of aerial film and the dark room for color photography is seldom empty (the cheese cake art that adorns the bulkheads may account for this). All the spaces were terrifically neat in spite of the great volume of work handled.

Lunch in the wardroom as guest of the executive officer provided a welcome break in the rigorous schedule. However, it was a brief pause. At 1230 LCdr. Macon appeared, and we were again off and running at full speed.

We "inspected" sick bay. Dr. N. W. Todd showed us one ward of the 84-bed hospital, the modern operating room and some of the lab facilities. He said for record that the medical set-up aboard *Independence* is as complete and up-to-date as the best hospitals ashore.

On the way back to PriFly I had a fast look at the Communications Center and the telephone lash-up that rivals the service in a fair-sized community. The transmitter arrangement is especially intricate.

Air operations were set for 1300, and when we entered the control tower of the ship, I learned that I would be permitted to handle some of the last-minute transmissions. I picked up the mike and in my most official voice read: "All aircraft, all aircraft, this is Gun Train Control. Foxtrot Corpen three two zero." There was a long pause, then a single exclamation—"We're with you!" I thought that was an unusual response.

Cdr. Hal Lang, CAG-7, was in PriFly. He explained that only about half the air group was embarked so that I would see the same type aircraft launched. Once more I watched Naval Aviation come alive.

Right after the last *Skyraider* was recovered, we set out for the flag bridge. In passing, we checked the forecastle, a spotless compartment that rated a second look. The huge space contained two bright, blue and white windlasses and two capstans for the two huge black chains that stretched

READY ROOM 4 BRIEFING SCENE INCLUDES ROYAL NAVY PILOT

A4D SKYHAWK MOVES UP TO STARBOARD CAT SOON AFTER A SHOT

to the anchor housing. Each link weighs 360 pounds in order to handle the 30 ton anchors.

Finally, we reached the flag bridge where I had the privilege of meeting RAdm. Ray C. Needham, Commander, Carrier Division Two. In the midst of our conversation, the General Quarters alarm sounded. Permission had been granted for me to tour the ship with a Master-at-Arms while all hands were manning their battle stations. I learned that within seven minutes the ship became watertight by closing the 3700 doors, hatches and ducts. A guide was necessary because during the serious drill only certain passageways could be used and a MAA is most familiar with the routes.

The first stop was Secondary Control all the way forward. Under battle conditions, it is the executive officer's station and he can take the con if any damage is sustained by the bridge. Incidentally, this was the only spot where I experienced any sensation of being afloat. I might just as well have been on an island the rest of the day. Control was shifted while we were there, and, after watching the adjustment, we went on to the Combat Information Center. What a contrast from the morning's proceedings. The number of personnel was tripled. Wave after wave of "enemy" aircraft were detected, identified and destroyed. It was hard to believe that this wasn't the real thing.

We went again to Central Control to find the chief engineer, sitting calmly at his vantage point in the center of the room, directing the repair crews to the damage areas, receiving their reports and keeping his eye on all the other activities going on at the same time. Finally, he passed the word to the bridge that all damage had been repaired, and the order came, "Secure from General Quarters."

When conditions returned to normal, we went below to within eight feet of the keel. I saw some of the massive machinery that makes *Independence* work. I couldn't get over the water-making plant. Each day 200,000 gallons of fresh water are converted from sea water. The very purest is used for the boilers and the rest is used for drinking, bathing and cooking. Even at that the crew complains about the flat taste since it's much "softer" than most city water.

At this point, I began dreading the ascent because my legs were getting weary from the scores of ladders already conquered. I was obviously out of condition. We climbed a couple of decks and then appeared a most welcome sight—an escalator. I knew there were two some place, but had been forewarned that only the pilots found them where they ought to be, and that's the way it should be since they were planned for their convenience. At the rate of 120 feet a minute we were whisked from the second deck to the 03 level and, in true Navy fashion, proceeded to walk *down* to the Public Information Office.

There I was presented with a very professional television script. An interview on the closed circuit station, WIND-TV, was scheduled for 1600. In spite of the fact that the channel had been inoperative for about 24 hours, we went on the air successfully at precisely eight bells, thanks to the industry and ingenuity of WO1 T. R. Carroll and Chief F. D. Graves, the station technicians. The line of questioning was a bit out of the ordinary, but I answered to the best of my ability, since the queries had been prepared by L. S. Craft, JOC, in the PIO shop, and I figured he knew his exclusive audience better than I did.

After sign-off, it was chow-time again and, after all the exercise, I was glad. We went through the line at First Class Petty Officers' Mess and I watched first class steaks being individually prepared to suit 200 tastes. With heaping trays we were taken to the one table with a table cloth and were joined by the Mess President, L. A. Boozer, EM1 and the Caterer, J. W. Farrington, PN1. We ate heartily to the accompaniment of a shipboard disc jockey program on the PA, complete with special request numbers. The highlight came at the end of the meal. I was introduced to the men and made an honorary member of the E-6 Mess.

My sea duty was fast drawing to a close. Take-off was set for 1715. There was just time to telephone Capt. O'Grady to thank him for my day underway on a CVA. It was one of the few times in my naval career that I didn't have to sound off. You see, my name is Lt. Barbara Sullivan, and I was the only woman aboard the carrier.

The TF was waiting. To climax the whole thrilling experience, it was spotted for catting. I donned the bright orange helmet, listened carefully to the thorough briefing by Airman Smith, the plane captain, and tried to calm the butterflies in my stomach. When a blue shirt removed the chock and the engines turned at full power, I knew this was it. Away we went. It was just terrific.

'Rebel Aircraft' at Whiting

Concerted Efforts Rout the Enemy

An armada of rebel aircraft landed at Whiting's North Field early one morning, and, to the amazement of personnel there, immediately commandeered two T-28's belonging to Squadron Four.

It was too late to sound the "Imminent Attack" warning when the foreign flyers took over. BTG-2 personnel put up a stiff resistance, battling the invaders with compressed air, carbon dioxide and finally gasoline.

"There seemed to be no explanation of where those bees came from or why they settled where they did, but we finally got them off," Capt. W. R. Fails, maintenance officer for Squadron Four said after the tiny flyers surrendered.

The first try to rout the bees, which landed on the wing of 2W-560 and later buzzed over to the same position on the adjacent 2W-584, was with a CO_2 extinguisher.

Approaching cautiously and using the wing as a shield, Capt. Fails and D. R. Andrew, AN, sprayed and sprayed, but the bees matched their determination and returned to the wing as soon as the extinguisher was stopped.

After trying air blasts and vibrations, the fighters, observing all safety precautions, threw gasoline on the bees. This did the trick as the majority of the bees fell to the ground, their fight destroyed by the fume laden gas.

By noon, operations at Squadron Four were once again in full swing but all of the personnel there and one bee-stung photographer recognized the truth of the old adage, "Don't under estimate the strength of your enemy."

Scientist Gets Navy Flight

Observes Reef in Central America

On a scheduled navigational flight from Corpus Christi, a P2V plane carried University of Texas geologist Charles M. Hoskin to observe and photograph Alacran Reef near the Yucatan Peninsula in Central America.

The University is making a three-year study of the corals and extinct animal life there in conjunction with the Institutes of Biology and Geology in Mexico. Mr. Hoskins is working under a grant by the National Academy of Sciences, sponsored appropriately by the Office of Naval Research.

The P2V which flew him to Central America was piloted by LCdr. G. J. Sharp, with Lt. D. J. Childers flying co-pilot.

Bomb Adapter is Proposed

Would Let P2V's Make More Drops

LCdr. William M. Foster, former ASW training officer at NAS ATLANTA, has suggested a method that would permit bombs to be reloaded in P2V-5F *Neptunes* in flight.

Heretofore, bomb racks were placed in the bomb bay and the aircraft had to make a landing in order to replace bombs which had been dropped. If four pilots were to be qualified, four separate flights were required.

LCdr. Foster's solution would be to place an adapter over the after hatch of the P2V so that a miniature bomb rack could be installed on the adapter and re-loaded in flight.

The cost of all components required to construct the adapter would be $5, as opposed to $60 for each take-off and $50 per hour operating expense for enroute time to and from the target.

The Bureau of Naval Weapons feels LCdr. Foster's idea possesses "significant merit." Details on the adapter may be obtained from NAS ATLANTA.

Scores 2000th Safe Hour

VT-31 Instructor Sees the Nation

LCdr. Forest O. McKinney of Training Squadron 31 has completed his 2000th hour of accident-free instruction flight in the SNB at Corpus.

He began instructing with ATU-601 in October, 1957, and remained in the squadron through its changeover to VT-31 in May.

Instruction flights have carried him as far east as Niagara Falls, as far west as San Francisco, and southward to Miami.

When not on cross country flights, he gives check flights to students and instructors as a member of the squadron's standardization board.

NAVY POLARIS *"Dolphins" make giant cross-country leaps on their way to the sea. At left, one of them is hoisted in preparation for loading it aboard a C-124 cargo plane at Lockheed Missiles and Space Division's Van Nuys, California, plant for delivery to the USS George Washington at Groton, Conn. Dolphins first attend "fish school" in Southern California waters off San Clemente Island. There they leap from the sea, send a stream of water high overhead, stop dead in mid-air, and float on the surface until caught by Navy fishermen. Then they are ready for the main stream, chilly East Coast waters, where they make their leaps from the submerged George Washington. The Dolphin launch test vehicle, which has the very same diameter and length of Polaris, simulates all the missile launch characteristics.*

Weekend Warrior NEWS

ANNUAL MILITARY *Inspections at such diverse spots as NAS Oakland, left, and NARTU Anacostia, were among RAdm. Allen Smith's last duties as CNAResTra. He has been relieved by RAdm. Arnold W. McKechnie and is now ComCaribSeaFron in San Juan, Puerto Rico.*

VS-893 Trains at LosAl

Members of Reserve Anti-Submarine Squadron 893, based at NAS Seattle, spent two weeks at NAS Los ALAMITOS for intensive schooling and air operations with fleet destroyers and submarines. About 25 officers and 34 enlisted men participated in the cruise.

At the Naval Air Electronics Training Unit, pilots and their aircrewmen attended morning classes together each day, perfecting their skills in radar, search and detection equipment on the latest type trainers.

Afternoons and evenings they took off on sea patrols, tracking submarine targets, and learning to work as smooth teams in executing the complicated search patterns.

Climax of VS-893's training tour was a three-day hunter-killer operation. The squadron's S2F *Trackers*, together with the destroyers, hunted U.S. Navy snorkel submarines. Cdr. Edward A. Cabler commands VS-893.

Minneapolis Hosts Science Fair

Official host for the 1960 Annual Minneapolis-St. Paul Regional Science Fair was Capt. E. M. Morgan, Commanding Officer of NAS MINNEAPOLIS. Over 700 exhibits were displayed by science and mathematics students in the seventh through 12th grade, residing within a 30-mile radius of the Twin Cities. About 7000 people attended the exhibit which proved to be an excellent community relations project for the Naval Air Reserve Training program in the area.

The Blue Ribbon winner was a satellite, complete with everything but a means of propulsion, dubbed *Minervite I*, and designed by young David Myers.

Jax is VP-732's Cruise Site

The primary mission of a patrol squadron in today's Navy is to detect, track and destroy submarines. Reserve VP-732, attached to NAS GROSSE ILE, is equipped with P2V-5 *Neptunes* to do the job on a long-range scale. The operation of the aircraft and all its complex equipment requires highly qualified and skillful personnel.

MINERVITE I *is examined by Dr. T. J. Hanwick, chm.; David, creator; Capt. Morgan.*

This year VP-732 underwent two weeks active duty training with Patrol Squadron 5 under the operational control of Commander, Fleet Air Wing 11 at NAS JACKSONVILLE. About 60 Weekend Warriors assumed their duties as pilots and maintenance men flying long missions over vast areas of the South Atlantic, Caribbean and Gulf of Mexico.

Realistic wartime maneuvers included rocket and bombing practice over water, celestial navigation flights and submarine exercises with components of the regular Navy.

Upon departing Jacksonville, Cdr. Patrick J. Concannon, the C.O., expressed his satisfaction with the tour: "Through the sustained efforts of all hands," he said, "Patrol Squadron 732 enjoys the reputation of being an effective combat ready team. We have had the professional satisfaction of being part of a vital command and of accomplishing the mission at hand."

AirCats Are Real Hep

There's a new enlistment program that went into effect on 1 July in the Naval Air Reserve Training Command. Authorized by the Secretary of

PARADES *present good recruiting opportunities when "Fly Navy" cars participate. Left, Seneca Chief Halftown waves from NAS Willow Grove auto in Ocean City, N.J. Right, Lt. J. M. Pierce drives NARTU Lakehurst vehicle down Fifth Ave., N. Y. on Loyalty Day, 1 May.*

Defense and the Secretary of the Navy, on a trial basis, its purpose is to increase the number of petty officers in specialty ratings as aircrewmen in drill units in order to carry out the Selected Air Reserve mission.

Under the program, which is spelled out in CNAResTra Instruction 1306.-15 of 9 March 1960, men 17 through 26 years of age who are selected, will be given intensive training in specialized Navy jobs for six months on active duty. They will be released to their home duty station upon completion, but will have an obligation to serve a total of seven and a half years of inactive duty. As aircrewmen they will spend one weekend each month at the Naval Air Reserve activity nearest home, and will also take annual two-week training cruises with their assigned squadrons to gain proficiency in standard operating procedures.

The fields in which training will be concentrated are aviation mechanics, electronics and electricity, ordnance and sonar. As more and more attention is paid to the anti-submarine warfare phase of the Navy's role in defense, the Naval Air Reserve needs more trained personnel to operate and maintain the complicated airborne tools that help alleviate the submarine menace.

The first year's entire quota is 1500 men. Accepted enlistees are sent to NARTU MEMPHIS for four weeks of basic recruit training and then, depending on the school for which they were qualified they go to NATTU JACKSONVILLE, NAS KEY WEST or remain at NATTC MEMPHIS.

The physical and mental requirements of the six months program are very high and the men who complete the active duty phase and are assigned to Weekend Warrior squadrons must maintain a record of satisfactory drill attendance to stay on as civilian members. Those who miss too many periods may be ordered to active duty for periods up to 45 days.

High school seniors selected for this program will be permitted to finish the year before being called up for training. Selectees not in school will go on active duty within 120 days of their enlistment date.

The whole idea of the program is to get sharp young men well trained as quickly as possible in challenging specialties to add to the efficiency of the Air Reserve. The name, AirCat program, is Navy's abbreviation for the Aircrewmen Accelerated Training.

CDR. P. J. CONCANNON, *at the controls of a P2V-5 Neptune, was congratulated by ComFAirWing 11, for VP-732's performance on cruise.*

READY FOR ASW *patrol, VS-893 pilots go to their planes: L. to R. Lt. Weston Chandler, Cdr. B. H. Moebring, X.O. and Cdr. Cahler.*

'CRANE' CARTS A CRIPPLE

A QUONSET QUANDARY *which started at noon was solved before the close of working hours recently by virtue of a quick assist from Sikorsky and its phenomenal aerial workhorse, the S-60 "Flying Crane." Stymied by the problems of recovering an HSS-1 from nearby Fox Island, where it had landed following an engine failure, NAS Quonset officials accepted a Sikorsky offer to airlift the stricken chopper. In top view, huge helo deposits HSS-1 rotors and detection gear at NAS before lifting (middle view) 8,425-pound load from Fox Island and heading home. Delivery at Quonset by Sikorsky pilot, Jack Porth (bottom), was termed a "superb" job by observers.*

Aerial Navigator Advanced
Antarctic 1955 Tour Outstanding

Outstanding performance of duty during Operation *Deep Freeze I* in Antarctica earned a meritorious promotion to Staff Sergeant for Marine aerial navigator Robert C. Spann.

Spann was appointed to his new rank by BGen. R. K. Rottet, Commanding General, at MCAS CHERRY POINT, N. C. in special ceremonies.

Now a member of the Air Station Operations and Engineering Squadron, Spann was one of the Marines selected for *Deep Freeze I,* 1955-56.

The accelerated promotion was based on Spann's skill and courage in navigating a Navy *Neptune* during several flights across the Antarctic.

These included the first two transcontinental flights across Antarctica by way of the South Pole. Both flights were made over area never before seen by man. No aids to navigation existed and only the most precise grid navigation using sun, aircraft gyro compass and drift meter kept the aircraft on its assigned route and returned it safely to its base.

On one flight Spann's navigation, navigational records and associated photography proved that the Antarctic continent was not divided in that area. Results of sightings and photography made on the Weddell Sea flight credited discovery of new mountain ranges to the United States.

Lasting recognition was given to Spann when the U. S. Board on Geographic Names, Department of the Interior, named one of the peaks of these mountains, Mt. Spann.

Subsequent to *Deep Freeze I,* VX-6 recommended Spann for a decoration. On June 9, 1958 Spann was awarded a Navy Letter of Commendation by the Secretary of the Navy.

Safety Record Chalked Up
Friday, May 13, Proved No Jinx

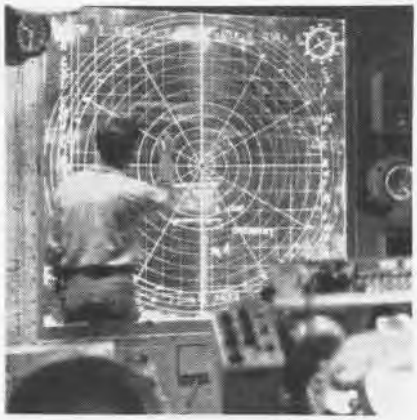
Friday, the 13th of May, was a great day for Training Squadron Three at Whiting Field. That day the squadron broke the all-time accident-free flying hours record in the Naval Air Basic Training Command.

The squadron refuted the popular notion that "Black Friday" is unlucky by reaching the total of 35,600 accident free hours that day. Cdr. R. E. Ries, Jr., heads the squadron.

CONVERTED ORISKANY DEPLOYS

USS ORISKANY BEFORE . . .

. . . AFTER CONVERSION



NEW MODULAR CIC

THIS SPRING the USS *Oriskany* (CVA-34), one of the latest attack carriers converted for modern air-sea warfare, joined the Seventh Fleet for a seven month operational tour in the Western Pacific.

Following a 30-month conversion period at San Francisco Naval Shipyard and shakedown training out of San Diego, *Oriskany* sailed for the Far East with a number of new features. In addition to such attack carrier modernizations as an angled deck, steam catapults, hurricane bow, and landing mirror, she was equipped with the prototype "modular" Combat Information Center. USS *Oriskany* is the first attack aircraft carrier to have the entire after part of the flight deck made of extruded aluminum planking, rather than of the conventional wood planking.

The new combat information center, called "Modular CIC," replaces the somewhat overcrowded and confusing arrangement of previous CIC's. It has been enlarged and subdivided into "modules" or glassed-off sections, grouped about a central control area called "Display and Decision." Each module is organized to perform one of a carrier CIC's essential functions: air operations, air control, surface operations, electronic countermeasures, detection and tracking, carrier controlled approach (CCA), and weapons control. The modular CIC concept, having proved successful, has been installed in the USS *Coral Sea* and is being installed in all carriers under construction at the present time.

Deploying to the Far East on board the newly converted attack carrier is Carrier Air Group 14, commanded by Commander Gordon E. Hartley and flying F3H *Demons*, F J4 *Furies*, A3D *Skywarriors*, F8U *Crusaders*, and AD *Skyraiders*. The *Oriskany* is commanded by Captain William S. Guest. Her Executive Officer is Commander Martin D. Carmody.

DEMONS ON CATS . . .

. . . A FURY LANDS

MARINE ASTRONAUT AT AMAL

JOSEPH SCHMITT CHECKS LCOL. GLENN'S FULL PRESSURE SUIT

R. W. McGUIRE, HM2, ATTACHES THE ELECTROCARDIOGRAM LEADS

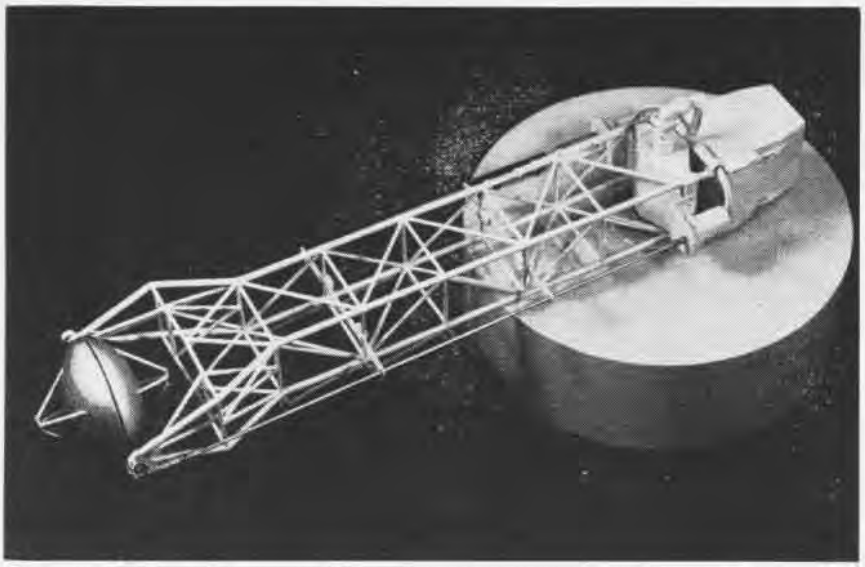
ONE OF THE seven candidates preparing for the distinction of making the U.S.'s first orbital space flight in a McDonnell-built Project *Mercury* capsule is LCol. John H. Glenn, USMC.

Since the beginning of the National Aeronautics and Space Administration's program, Glenn and his fellow *Astronauts* have been subjected to realistic dynamic simulation of space flight conditions at the Navy's Aviation Medicine Acceleration Laboratory at Johnsville, Pennsylvania—site of the world's largest human centrifuge. During this period AMAL scientists and equipments have contributed considerably to the NASA's project for achieving manned orbital flight.

The flight program for NASA Project *Mercury*, our highest priority manned satellite program, includes six orbital flights in FY 1961 of capsules carrying instrumentation in the earlier flights and animals in the later ones. In FY 1962 five flights are scheduled. It is expected that one of these during the last half of the calendar year 1961 will carry the first United States *Astronaut* into orbit and return him safely to earth.

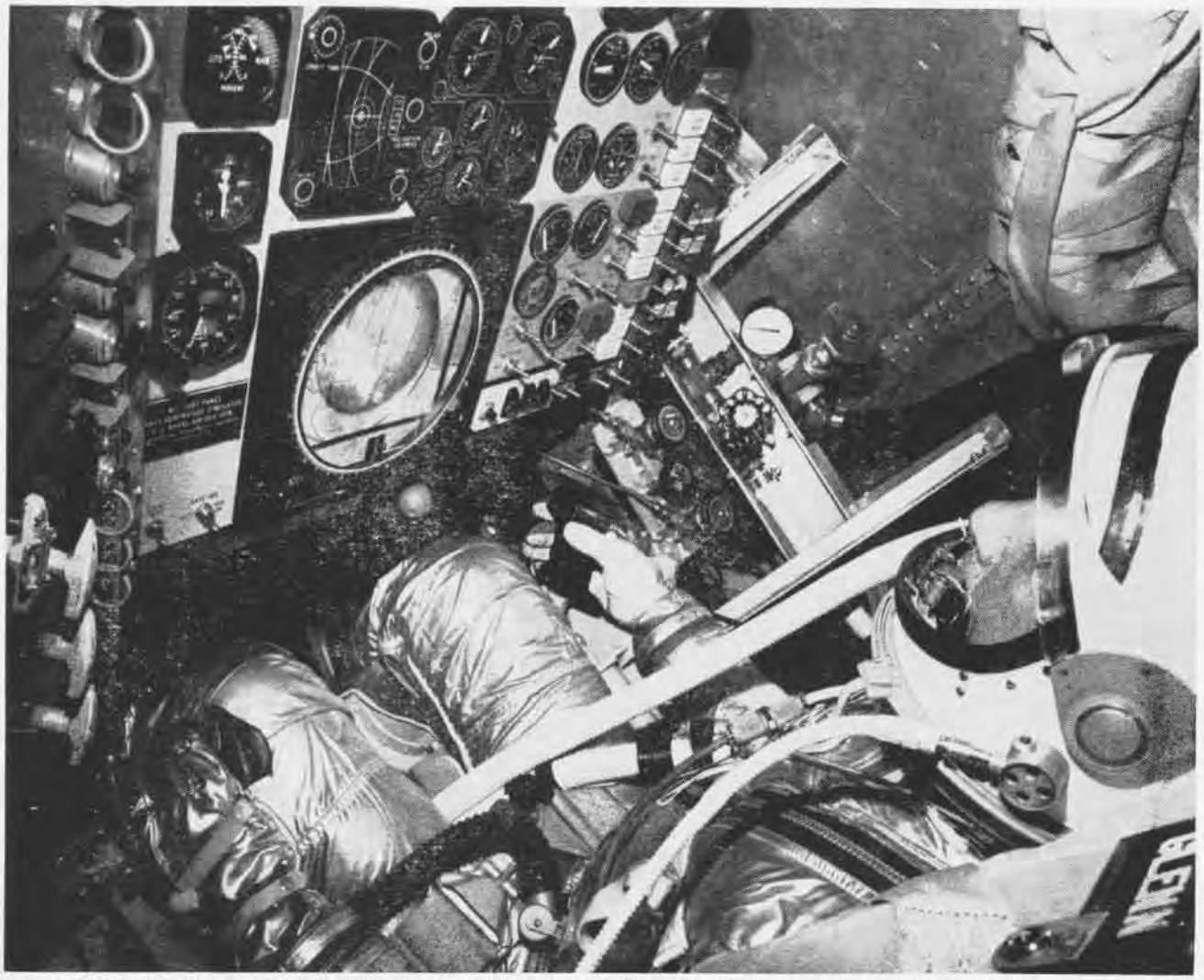
'ABSOLUTELY PERFECT FIT' IS THE AIM OF NASA AND AMAL MEN

ASTRONAUT GLENN JUST BEFORE TESTS IN GONDOLA OF CENTRIFUGE



MODEL OF CENTRIFUGE IN WHICH ASTRONAUT EXPERIENCES MERCURY TYPE ACCELERATIONS

READY TO ENTER THE CENTRIFUGE GONDOLA



LCOL. GLENN IS SHOWN AT MERCURY TYPE CONSOLE WHICH IS PART OF SIMULATION OF SPACE FLIGHT CONDUCTED AT JOHNSVILLE

CLEANER THAN A HOUND'S TOOTH

THE AERONAUTICAL Engine Laboratory at Philadelphia has developed a simple and reliable device for determining the amount of finely divided sediment contaminants in aircraft fuels.

The device strains a sample of fuel through a fine porosity filter and then measures the passage of light through the filter. Deposits of dirt or rust on the filter block the passage of some of the light and permit an accurate reading of the fuel's purity.

Extensive field testing has shown that the AEL detector is nearly as accurate as a gravimetric (weight) test for fuels ranging from mogas through avgas and jet fuels. It is portable.

Current BUWEPS instructions specify that fuel delivered to aircraft should not contain more than two milligrams of solid contaminants per liter, which is two parts per million. The AEL device is the first accurate method of determining the contaminant level outside a chemical laboratory.

LCdr. Donald E. Nash, a member of the Power Plants Division of the Bureau of Naval Weapons, explained the steps that led to development of the new detector.

"When jet engines first came into general use in the Navy, a great legend was born," he began. "According to common belief, the 'simple' jet engine would solve practically all fuel problems. It could burn 'anything from kerosene to martinis' and it was hailed as being free from all problems of fuel digestion.

"But the more we learned about jet engines, the more we realized how little we knew," he continued. "This much we now can be sure of: Particles of sludge that cannot be seen by the human eye can cause severe damage to a jet engine."

He cited this example. Without a magnifying glass or other optical aid, the human eye cannot see particles smaller than 40 microns (a white blood cell measures about 25). Yet fuel containing from three to five micron particles can block the tiny ducts and valves the fuel must pass through in a jet engine.

Up to 1956 the Navy could either make a visual test of a fuel sample or send the sample to a chemical laboratory for test. Obviously a carrier operating at sea did not have ready access to a laboratory.

EQUIPMENT IS PACKED IN PORTABLE UNIT

Compounding the problem was the advent of a new generation of higher performance jet aircraft whose flight envelopes carried their engines through a much wider range of environmental extremes of heat and cold, thick and thin atmospheres and varying moistures, and at higher speeds.

AEL's research problem was aggravated by the advent of JP-5 jet fuel which is heavier than avgas or JP-4 and from which contaminants settle much more slowly than either. While impurities settle in lighter fuels at the rate of several feet within hours in bulk lots, some contaminants in JP-5 settle at the rate of only a few inches in days.

The Bureau of Naval Weapons, then BUAER, asked the Aeronautical Engine Laboratory to develop a portable fuel tester which could be used by a man with average intelligence after a minimum of training, and which would stand up under field conditions for a long time. The tester, of course, had to be as accurate as a laboratory test.

AEL made several approaches, but each tester had one or more shortcomings. The current and successful model is in the category of the bumblebee which theoretically could not fly because of its excessive wing load, but which flies anyway. Many theoretical reasons have been advanced to show why the AEL tester would not work, but it works consistently.

In tests aboard USS *Essex* and USS *Ranger*, the device paid for itself several times over. When fuel was found to be contaminated, it was not pumped into an aircraft. This was a big factor in reducing maintenance. Contaminated tanks and faulty filters could be by-passed until they were inspected, filter elements replaced, or lines purged as necessary to eliminate the source of contamination.

That aircraft engines might have been saved, or that aircraft accidents were prevented by the tester's presence aboard ship is more than speculation, says LCdr. Nash.

The accuracy of the portable tester was established when filters sent in by the ships were forwarded to chemical laboratories for weight tests. In each case, the lab findings bore out what the field tester had determined as the "contamination count."

The tester as currently designed weighs about 50 pounds. It measures 17 inches long, 11 inches wide, and 9 inches deep. Pre-production changes will bring the weight down to 30 or 35 pounds without sacrificing any vital components.

When production funds become available, the Bureau of Ships plans to purchase enough testers to provide each aircraft carrier with two, and BUWEPS is considering procurement for air stations.

"In essence," says LCdr. Nash, "the tester will provide us with an on-the-spot, go-no-go safety capability."

Deep Freeze 60 Season Ends

Copter Flight Closes Air Ops

The 12th of May at McMurdo Sound, Antarctica, marked the last aircraft flight for *Deep Freeze 60*.

A local flight was flown in an HUS helicopter piloted by Lt. Benjamin Hooper of VX-6's Detachment Alpha which is spending the Antarctic winter at McMurdo. For Lt. Hooper, it was his 121st flight for the current season. These, in addition to missions in a previous *Deep Freeze* operation, give him a total of 287 flights in direct support of the U.S. scientific operations in Antarctica.

After the flight, the helicopter joined an assortment of eight other aircraft already in winter storage. In late August, the planes will be dug out of their cover of drifted snow and readied for September operations.

HYDRA CONCEPT ANNOUNCED

USING THE SEA as a giant hemispheric launching pad for missiles is the original idea of two Point Mugu officers at the Naval Missile Center. Together they have developed a new system called "Hydra" which would make use of the 70 per cent of the earth's surface to send missiles into flight.

The two men responsible for the innovation are LCdr. John Draim, head of the research division of the Astronautics Department, Naval Missile Center, and Lt. Charles E. Stalzer, research engineer associated with him.

In the initial public demonstration in Mugu Lagoon, a vehicle constructed of laminated wood and measuring 70 inches high was launched more than 60 feet into the air without use of tube or pad. The mock-up was powered by a 2.25-inch solid rocket motor.

This was the first time persons not directly involved in the project witnessed the launch. The small rocket had been proved successful in six previous shots. No problems were encountered either in underwater ignition or pop-out. According to LCdr. Draim, the water itself provides stability in the initial stages until momentum builds up and the missile leaves the water.

The first flights have been unguided. If the concept receives acceptance, a guidance system similar to that used in *Polaris* could be supplied.

One great advantage of the Hydra concept is economy which would result in using the world's bodies of water rather than fixed pads. This economy would be greater as boosters increase in size. The ever-present danger of destructive malfunctions and explosions, which knock out concrete pads for long periods of repair time, would be eliminated. The initial price tag of $30 million attached to one *Saturn* pad, for example, would be eliminated.

Using the Hydra system, a missile would be constructed in drydock, towed either by surface ship or submarine to the desired location. With the nose cone attached and the tow line cast off, the bird is ready.

The missile would immediately assume a vertical position with about one-third of its height above the water. The weight displacement would maintain the missile vertically with only slight variation caused by wave or wind action.

Hydra will be particularly adaptable to the large multi-million pound space boosters being planned. In addition, with complete choice of latitude for a launching position, the preferred equatorial launch which permits a greater ratio of payload to booster, would cease being a matter of international concern in obtaining launching sites on or near the equator.

The greatest single advantage of the proposed water launch is the relative ease with which logistics and handling problems are met. Additional benefits include safety, mobility, secrecy and a no-cost multi-location launch pad.

AiResearch Builds APU's
Will be Used with Eagle Missiles

A compact, lightweight auxiliary power unit for the *Eagle* air-to-air missile will be provided by the AiResearch Manufacturing Division of the Garrett Corporation.

The turbine-driven unit will supply both hydraulic and electrical power for operation of surface controls, navigational systems, and others.

The *Eagle* missile is designed to destroy any enemy aircraft or missile.

TWO PROTOTYPES *of a new towing tractor for A3J and other carrier planes is tested for first time at NAS Glenview. The Vigilante was towed and parked in various positions by both a short turbine-less model of the tractor and a longer version with a built-in turbine unit for starting jet aircraft engines. Towing was demonstrated with three different tow bars; one about 20 ft. long, another 7 ft., and another only 4 ft. long. Electrical power and engine starting tests also were attempted. Known as the 'Paymover' TD 80, the tractor is made by the Frank G. Hough Co. It resembles a flat rectangular box with a driver's seat carved into its left midsection. The TD 80 stands 36 in. high, is 65 in. wide, and with an aircraft engine starting turbine, is 161 in. long. Without turbine section, it is only 121 in. Equipped with power steering, power brakes and an automatic transmission, the diesel-powered tractor has a low gear speed of 6.4 mph., an intermediate speed of 10.6 mph., and a max. speed of 15 mph.; in reverse it makes 7.7 mph. Drawbar pulls 8000 lbs.*

SCIMITARS ON HMS VICTORIOUS

IN DISCUSSING Vickers Supermarine *Scimitars* in *Flight Deck*, Cdr. G. R. Higgs, RN, formerly skipper of 803 Squadron, the first to take the aircraft aboard a carrier, confines himself to the discussion of front line operation at sea of the Royal Navy's low-level interceptor fighter and strike aircraft.

He finds the cockpit roomy and says "most controls come easily to hand." He adds a humorous note of warning, "As the boffins invent more iron-

TWO SCIMITARS ON THE CATAPULTS ARE ABOUT READY TO 'GO'

PROFILE VIEW STRESSES PLANE'S 'NOSE HIGH' CHARACTERISTICS

mongery for installation, it is to be hoped that space can be found for its assimilation without marring the present layout."

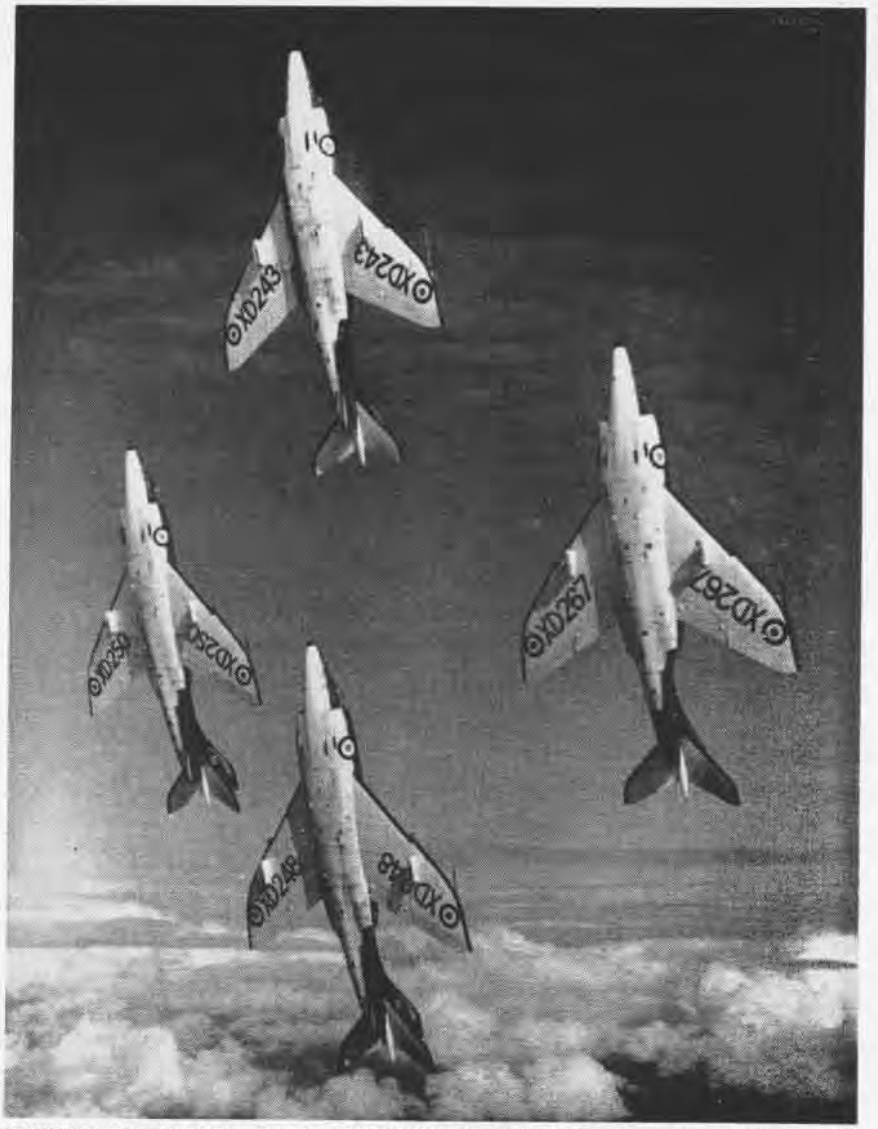
Deck handling is very good, save for the limited view from the cockpit caused by the extreme height of the nose. Such is the design that flight directors need to be stationed some distance away, or the pilot will see "only boundless blue seas and a pair of clawing hands."

As for catapulting, Cdr. Higgs says, "Probably the most impressive sight at sea today is that of a *Scimitar* sitting up begging on a catapult prior to launching." Once the *Scimitar* is airborne, its cockpit is "probably a little noisier than most, but stick forces are light and well harmonized, giving the impression of a smaller aircraft. Even without external fuel, its range is a great improvement on earlier types and this, with the added luxuries of Tacan and a good flowmeter, gives the pilot a sense of confidence."

Scimitar's landing is reasonably straightforward, and "although ailerons tend to lose their crispness at 130 knots, control is still adequate."

Maintenance presents a problem because the *Scimitar* is far more complex than earlier aircraft. Accessibility is another problem because there has been a substantial increase in components.

Commenting on the tremendous amount of gear required, regular and special, Cdr. Higgs says, "It is reckoned that two more *Scimitar* squadrons each disembarking at Portsmouth to Lossiemouth every three months, and returning again four weeks later, will provide sufficient traffic to balance the British Railways' budget."



SCIMITARS OF 807 ROYAL NAVAL SQUADRON FLY IN 'BOX' FORMATION DURING A LOOP

★ ★ ★

LANDING GEAR EXTENDED, AIRCRAFT IS READY TO COME ABOARD

ONE OF 803 SQUADRON LANDS DURING EXERCISE 'SHOPWINDOW'

GCA PUT ON TURNTABLES

F8U CRUSADER IS 'TALKED OUT' BY GCA UNIT MOUNTED ON TURNTABLE AT NAS DALLAS

GROUND Controlled Approach equipment at NAS DALLAS and MCAS BEAUFORT has been placed on turntables to improve operating efficiency.

The new arrangement makes it possible to shift runways and realign equipment within three minutes. Before the trailers were placed on turntables, it required 20 to 30 minutes to disconnect trailers, drive to new hardstands, reconnect the trailer, and realign the equipment.

The turntable has several advantages. The major one will be the savings in maintenance time and spare parts expenditures as a result of not having to shift to new hardstands.

In addition, aircraft will encounter only a small delay in the event a change of runway is necessary.

Turntable mounts for GCA trailers are being authorized for those stations where airport runway layout makes it economically feasible.

Cost of the hand-operated turntable installation is slightly over $5000.

Transmissions Coordinated

U.S.—U.K. Cooperation Announced

The United Kingdom and the United States have begun coordination of their Time and Frequency transmissions.

This step was announced jointly in Washington by Dr. James H. Wakelin, Jr., Asst. SecNav (Research and Development), Dr. Allen V. Astin, Director of the U.S. National Bureau of Standards, and in the United Kingdom by the Astronomer Royal, Royal Greenwich Observatory, and the Director of the National Physical Laboratory.

Coordination was begun early this year in order to help provide a uniform system of time and frequency transmissions. This is needed in the solution of many scientific and technical problems in such fields as radio communications, geodesy, and the tracking of artificial satellites.

Participating in the project are the Royal Greenwich Observatory, the National Physical Laboratory, and the Post Office Engineering Department in the United Kingdom, and, in the United States, the U.S. Naval Observatory, the Naval Research Laboratory, and the National Bureau of Standards.

Transmitting stations which are included in the coordination plan are GBR and MSF at Rugby, England, NBA, Canal Zone, WWV, Beltsville, Maryland, and WWVH, Hawaii.

It is expected that by the end of 1960, time signals from all the participating stations will be synchronized to the thousandth of a second. Such accuracy is the kind that is needed to track satellites on a world-wide basis.

ZPG-2 Shatters Record

Endurance Flight Lasts 95 Hours

At 0820 on 29 March 1960, a Navy ZPG-2 airship landed at NAS LAKEHURST after having been aloft for more than 95 hours of unrefueled flight. This flight shattered the record of 73.1 hours of operational antisubmarine training hours set only 12 days before by LCdr. "Casey" J. Suchcicki.

Commanding pilot of the aircraft was Lt. Lundi Moore who is temporarily attached to ZP-3.

Other crew members were LCdr. F. L. Johnstone, Lt. William C. McAdoo, Ltjg. Jackson A. Wilson, Ltjg. James J. Christopher, Ltjg. John J. Fitzpatrick, AM1 Marco N. Zambrano, AT1 Charles E. Hinkle, AD2 G. J. Gillen, AE2 J. D. Hinton, AT2 G. H. Fox, AT2 Frederick R. Heckel, AD3 J. H. Thumma, AT3 L. D. Lee, AM3 W. R. Crowder, AM3 R. L. Ison, AO3 J. E. Schmidt, and Gerald Mayer.

VA-113 Target Club Grows

Stingers Increase their Membership

Cdr. Robert E. Gallatin's *Stingers* of VA-113, NAS MIRAMAR, enlarged the squadron membership in the "Exclusive Order of the Royal Bull's Eye" to a total of ten during a recent training deployment at NAAS Fallon, Nevada. Six new members joined the club.

Membership is obtained by dropping the 25-lb. training bomb in the bull's-eye of the loft bombing target at the range in Nevada.

Sperry Provides Systems

Polaris Subs to Get SINS, NAVDAC

Sperry Gyroscope Company will provide navigation systems and field engineering for the Navy's *Polaris* submarine fleet of nine subs and two submarine tenders.

Among the navigational systems covered are SINS (Ship's Inertial Navigation Systems) which show where the ship is and where it is going; and NAVDAC—a computer which keeps the accuracy of the inertial system intact over long periods of time by periodic cross-checking with other equipment and with star fixes.

Also furnished will be navigation control consoles and instrument panels, and keyboards which tie together SINS and NAVDAC, and which monitor all the navigational equipment.

German Navy Pilots on FDR

Visit Heavy Attack Squadron 11

Four top officers of the Federal German Naval Air Force were the guests of VA-11 aboard the aircraft carrier *Franklin D. Roosevelt* in the Mediterranean. Part of a group of officers and students from the German Marine Academy in Hamburg, Germany, they were aboard to observe air operations and fleet exercises being conducted by the Sixth Fleet.

The four aviators—Cdr. Werner Kluemper, Cdr. Werner Albring, LCdr. Hans Usener, and LCdr. Guenter Luther—are members of the German Naval Air Force's only attack wing. Cdr. Kluemper is skipper of the wing. Cdr. Albring is the assistant Naval Liaison Officer to Northern Army Group II, ATAF.

Since the Federal German Navy has no aircraft carriers, the Naval Air-Force is designed to operate from shore bases. In the event of war, their primary concern would be the defense of the Baltic Sea area and the protection of friendly forces at sea. The German naval attack wing is comprised of three squadrons: a reconnaissance squadron that flies British-built *Seahawk* jets, a multi-purpose squadron that also flies *Seahawks*, and an anti-submarine squadron flying twin-engine turbo-prop aircraft.

Two-year Survey Underway

Operation 'Sea Scan' Has Started

A two-year submarine hydrographic survey cruise covering the Atlantic and Pacific Oceans commenced in May when the USS *Archerfish* departed New London, Connecticut.

The WW II submarine had undergone repairs and special adaptations for the operation, dubbed Operation *Sea Scan*. The *Archerfish* began the long cruise with a group of scientists aboard from the Naval Hydrographic Office, Washington, D. C. who will conduct the survey.

The entire crew is made up of volunteers. Except for one officer and one enlisted man all are unmarried.

Among other preparations being made for the long cruise is the taping of sermons to be used by Catholic and Protestant lay leaders in conducting divine services.

Commanding Officer of the USS *Archerfish* is LCdr Kenneth Woods.

FLYING AT 150 FEET, SKYHAWK DELIVERS 300 GALLONS OF INSECTICIDE A MINUTE

JET ATTACK ON INSECTS

THE MOSQUITOES in the Jacksonville area might as well give up. Jet-powered spraying of insecticide is the very latest step taken to insure their demise.

VA-44 and VA-12 jet aircraft have proved that flying at 150 feet, the *Skyhawk* can distribute 300 gallons of insecticide a minute.

This has all been a part of the experiment conducted by NAS JAX Disease Vector Control Center to determine the value of jet-propelled aircraft as a means of spreading insecticide and controlling disease carrying insects to protect personnel in military operations. The Center, working with VA-12 from Cecil Field and VA-44 from NAS JAX, has found it works.

David Hayden is the entomologist at the Center, who has directed two years of study involving use of a Navy single-engine *Skyhawk*. He says that this is the first known instance of using jet aircraft for the war against insects.

He said that jet aircraft were tried because prop-driven aircraft and helicopters are not always available or are highly vulnerable to attack.

"The average prop plane can move at 175 miles per hour at the maximum and normally travels at a rate of 125 mph. With the jet we move at 500 mph at an extremely low altitude of only 150 feet, capable of putting out 300 gallons a minute," Hayden said.

Ground-to-air radio communication has been used in jet spraying operations. In addition, such things as big red arrows and red weather balloons were set up to guide the pilot to the target.

The apparatus used to disperse liquid insecticide was a tank having a capacity of 85 gallons.

"Under present-day conditions, it would seem that insecticide dispersal by jet aircraft is very costly and somewhat impractical, at least for civilian usage," Hayden said.

"There is no question that jet aircraft have promising potentialities for insect control work.

"Certainly, for the present at least, jets will be available for use where no propeller-driven craft are available," he went on to say. "It is doubtful, however, that jet-carried equipment will be extensively used, except for aerial dispersal of insecticide in support of tactical military operations."

HS-11 Helo Scores 'First'

Flies to Lakehurst on Instruments

Ltjg. Martin C. Zeller of HS-11 flew an HSS-1N helicopter from Quonset Point to Lakehurst on actual instruments. The flight was described as the first time a Quonset area helicopter had filed and received an instrument clearance on FAA airways under actual instrument conditions.

Flying through the New York area, the flight took 3 hours, 2.8 of which were on instruments. The helicopter was assigned an altitude of 2000 feet and maintained an airspeed of 90 knots. The trip ended with an ASR approach to Lakehurst.

Crewmen on the flight were Gerald O'Neil, AM2, and Robert Whitbeck.

New 'Seeing Eye' Tested
Air-to-Ground Search is Improved

An all-electronic, high resolution aerial reconnaissance system, capable of long range transmission of visual information from air to ground in seconds, has been purchased by the Navy and Air Force for testing.

Called *Photoscan*, the device was developed by CBS Laboratories and will be installed by the Fairchild Camera and Instrument Corporation.

The compact airborne portion is capable of "seeing" an object as small as a mortar from average reconnaissance altitudes. It will be installed and tested in a Navy F8U fighter.

The system can be used in both manned and unmanned aircraft.

Photoscan can transmit visual information electronically from an airborne carrier to ground receiving stations at forward command positions or to units hundreds of miles to the rear. It is capable of resolution in excess of 10,000 lines as compared to 500 lines in conventional TV, though less than half of this capability is required for Navy uses.

Heart of the *Photoscan* system is a Line Scan Tube, a unique electronic device which provides more than 30 times the brightness obtainable with the best of conventional cathode ray tubes scanning along a single line.

North Island Hosts Meet
Aircraft Preservation Studied

Representatives from Naval Air Stations, ComNavAirPac, Naval Air Material Center, Aviation Supply Office, CNARestra, Fleet Readiness, ComFair San Diego and the Federal Aviation Agency attended the fifth annual Aircraft Preservation Conference held at NAS NORTH ISLAND early this spring.

They discussed current aircraft and engine corrosion problems and reviewed ways and means of preventing deterioration of aeronautical materials under operating conditions and during static storage.

The wide range of problems discussed included materials specification, corrosion, improved maintenance and the need for special preservation units. Two modified preservation manuals, were reviewed.

The next preservation conference is scheduled to be held in late 1961.

NANEWS COVERS FORM PROPER BACKDROP

Goes from News to NEWS
Editor Ends Magazine Tour

After a three-year tour as Associate Editor of *Naval Aviation News*, Lt. Barbara T. Sullivan has been ordered to the War Gaming department at the Naval War College in Newport where she will help to administer the NEWS (Navy Electronic Warfare Simulator) program.

Her relief on NANEWS is LCdr. Robert J. Massey, who was executive officer of FASRon-12 at San Diego.

During her tour at NANEWS, Miss Sullivan wrote features on the Army-Navy Instrumentation Program, air base construction, squadron operations, aviation pioneers, target drones, training, survival, aircraft manufacturers, aircraft carriers, amphibious assault operations, aerial photography, history, war games, schools, rescues, research, and mach metals.

One of her last assignments, a visit aboard the USS *Independence*, appears on page 22 of this issue of NANEWS.

MISS SULLIVAN ABOARD USS INDEPENDENCE

Between features she regularly covered activities of the Naval Air Reserve, wrote the squadron insignia page, reviewed Sense Pamphlets, and wrote various short items.

This is not the first time that a Navy assignment has placed Miss Sullivan in one of the Navy's high-level schools. Just before she reported to NANEWS, she had been a student at the Navy's Postgraduate School at Monterey, California.

While in Washington, she attended night classes at Georgetown University to prepare for her Master's degree.

Polar Rescuers Decorated
Saved C-124 Crewmen After Crash

Six *Deep Freeze* officers have been decorated for heroism in saving the lives of seven crewmen who survived a C-124 *Globemaster* crash in the Antarctic in 1958.

The *Globemaster* crashed into a glacier near Hallett Station, killing eight of 15 aboard. The crash site was a remote, mountainous area which could not be reached by surface rescue parties.

Organized for such an emergency, Air Development Squadron Six's search and rescue teams went into action. An R4D flown by Lt. Earl D. Dryfoose, and an HUS helicopter flown by LCdr. Edgar E. Potter, pilot, and Ltjg. Roland J. Oehlbeck, copilot, were launched from McMurdo Sound. A UC-1 *Otter* flown by LCdr. Frank A. Dandrea and Lt. Harvey E. Gardner joined the search effort.

The R4D and *Otter* landed at Hallett station with medical personnel and supplies, and the HUS began evacuating survivors from the crash. Lt. Joel W. Drabkin (MC) flew in the helicopter to treat the injured.

After all survivors had been evacuated to another *Globemaster* on the sea ice off Cape Hallett, the helicopter rescued a land party which had become stranded in a crevasse area while trying to reach the crashed plane.

LCdr. Potter has been awarded the Air Medal, and Lt. Oehlbeck, now with VA-122, received the Navy Commendation Ribbon with metal pendant.

LCdr. Dandrea, Lt. Gardner, Lt. Drabkin and Lt. Dryfoose received SecNav letters of commendation.

Lt. Gardner's award was made posthumously. He was killed in a subsequent *Otter* crash in the Antarctic.

FIRST CLASS *of cadets for new Naval Aviation Officers school at Pensacola are inspected by Cdr. R. L. Pierce, academic director at Naval School of Pre-flight, and Marine Capt. R. L. Townsend. The first Navy school to train non-pilot aviation officers began training May 2.*

Hornet Heads for WesPac

Won Battle Efficiency E in 1959

USS *Hornet* (CVS-12) commanded by Capt. E. E. Christensen, began her second Far East cruise as a CVS when she left Long Beach on May 17th.

The *Hornet* will be returning to the scene of previous triumphs when she arrives in WestPac early this month. After her commissioning in 1943, she took part in many Pacific battles of WW II.

Decommissioned in 1946, USS *Hornet* once again joined the Pacific Fleet in 1953 as a CVA. She was redesignated as ASW carrier in July 1958, and has demonstrated mastery of her new trade by winning the Pacific Fleet Battle Efficiency E in 1959.

'Scope Nears Completion

Largest Instrument of Its Type

The largest radio telescope of its type in the world will go on the air this fall near Danville, Illinois. Sponsored by the Office of Naval Research, the giant instrument was built and will be operated by the University of Illinois.

Scooped out of the earth, the instrument is 600 feet long, 400 feet wide and 62½ feet deep. It covers five and a half acres, and has 160,000 square feet of receiving area, more than twice that of the Jodrell Bank Radio Telescope in Manchester, England. The telescope is fixed and non-steerable.

The reflector of the Illinois installation is a trench, rather than the usual parabolic dish. Geometrically it is a parabolic cylinder with the axis of the cylinder parallel to the earth and the axis of the parabola vertical.

It is being constructed by grading the surface of a small valley to the right shape and size. It will be covered with a prefabricated asphalt liner for erosion control.

Over this will be placed a wire mesh to act as the reflecting surface.

Liberty Up But No Boats

Helicopters Airlift Liberty Party

On a recent visit of the USS *Antietam* (CVS-36) to Corpus Christi, rough seas made it impossible for the ship's liberty boats to pick up officers and crew who had gone ashore.

Three hundred and fifty officers and men were stranded on the beach at Port Aransas until four helicopters came to the rescue and airlifted them to *Antietam* so she could leave on time.

Photo Lab Makes Record

Aerial Film Ready in 24½ Minutes

Photographers in the Flash Photo Lab aboard the USS *Ranger* set what they think is a Navy-wide record. They delivered a finished aerial photograph to Air Intelligence 24 minutes and 30 seconds after a photo plane landed aboard from a mission.

The old record for *Ranger*, set in 1959, was one hour and 16 minutes.

Under the direction of James A. Guiddy, PHC, the Lab processes all aerial film taken by Composite Photographic Squadron 61 detachment assigned to *Ranger's* Air Group. The detachment flies the photo version of the F8U *Crusader*.

Chief Guiddy is assisted by S. D. Doan, PH2, C. L. Huff, PH3, D. A. McKee, PH3, and J. B. Evanson, PHGAN, of USS *Ranger*, and R. H. Garze, PH2, A. M. McCoy, PH3, and R. W. Ashbey, PHAAN, of the Composite Squadron 61 Detachment.

THIRTY THOUSAND POUNDS *of Navy fighter are hurled skyward as this F3H-2 is catapulted from the decks of USS Ticonderoga with the ship moored at Piedmont pier, Yokosuka harbor, Japan. Unusual photograph was made by Navy photographer aboard USS St. Paul, 7th Fleet flagship.*

LETTERS

DEAR GRAMPAW PETTIBONE:

In the April issue of NANEWS, someone is about to pull a big goof—or someone has slipped a fast one past ye olde editor. On page 25, there is a picture of a flight engineer seated at his panel with this caption: "Here he checks instruments for take-off."

Now, Gramps, VW-4 may undoubtedly be superior in Hurricane Hunting, but one look at that panel indicates they are about to put a few more gray hairs in your venerable old beard, if the caption reads true. No fuel pumps "ON"; fuel pressure is 15 psi on one engine, 20 psi on another, and 2 psi on the remaining two; no "RPM"; no DC generator switches "ON"; and the master engine selector switch is "OFF."

Before take-off check list complete? Gadzooks!

LCDR. ....., USN

¶Son, you've got a sharp eye! Them Hurricaners are downright amazing boys though. A little thing like dead engines shouldn't . . . wal, mebbe it could, at that. Anyway we docked the boy editor one million Brownie points.

REVERSE RECOVERY

SIRS:

Page 6 of your May issue contained photos of the USS *Yorktown* (CV-10) recovering aircraft while steaming astern. . . .

I was a plank owner (FC-2) on the "Fighting Lady" and was on board during this recovery.

I believe it took place in May 1943 while on shakedown in Gulfo de Paria (Trinidad) or on her return to Norfolk after shakedown. . . .

As further supporting evidence, I can't remember, in my two years of combat operations in *Yorktown*, that this emergency procedure was ever again tested or used. This is in the same category as the old athwartships hangar deck catapult—while feasible, it was impractical.

Finally, and more importantly, She was a great ship! Whether steaming ahead or astern, she did the job, and I bet, if necessary, she would have steamed sideways.

J. E. CHAMBLISS, CDR.

SIRS:

I refer to the photos of the bow landings on the "Fighting Lady" (CV-10) on page 6 of the May issue. The pictures were made during shakedown in the Gulf of Paria, Trinidad in early 1943. The airplane is an F6F-3 either of VF-5 or CAG himself. CAG was LCdr. Jimmy Flatley; C.O. VF-5 was LCdr. Charlie Crommelin, both working for C.O., CV-10, Capt. Jocko Clark.

The "Lady" had bow and stern arresting gear, two sets of barriers and three cats, two on the flight deck and one athwartships in hangar bay one. The only trick to bow landings was to carry the wind off the port quarter (while backing down) in order to keep the island turbulence off the landing area.

The source of my info? I was her LSO.

E. M. VOLZ, CDR.

SIRS:

. . . Great balls of fire, don't tell me all you noble flyboys working for Gramps was on shore duty during WW II!

PIN STRIPE MOOSE

¶Ah so. We knew this had occurred a few times in the good old days; didn't realize it was both routine and universal until the letters snowed us under. NANews appreciates the time taken by so many readers to fill in the details; regrets it can use only the few reprinted above.

Blue Angels Portrait Given
New York USO Center Recipient

During Armed Forces Week, Robert E. Lee, President of USO Inc., accepted a picture of the *Blue Angels*. The portrait to be hung at the New York City Center, 132 West 43rd Street. Joseph Stam, secretary of the Grumman Aircraft Engineering Corporation, represented the firm in presenting the gift.

Participating in the special salute to Naval Aviation were Capt. William B. Short, Jr., C.O. of NAS NEW YORK, and five Armed Forces Week Queens (above left to right): Seaman Judith A. Garman, USN, Brooklyn Naval Receiving Station; Pfc. Mary Luksis, USA, West Point, N.Y.; Seaman Joanne Rishel, USCG, Lancaster, Pa.; A/1C Sue Houser, USAF, McGuire AF Base, N.J.; and Lance Corporal Judith Anne Small, USMC, D.C.

SHORT, STAM, LEE AND 'ANGELS' PICTURE

NAS SANFORD FLIGHT CREW AN THE A3D

A3D Racks Up High Total
Record Made Away from Base

A record of 256 hours in 15 weeks away from home base with a ground crew of seven plus a flight crew of four is the record for one A3D.

A3D-1, BuNo. 135427, from VAH-1 at Sanford, Fla., was deployed in January to NAS OCEANA under the operational control of ComCarDiv Two for an electronic evaluation and service.

The same crew was with the airplane the whole time. Shown in the picture below, left to right, are: Project officer and pilot, Lt. John Shattuck of VAH-3; third crewman, Edward M. Jones, a civilian electronics engineer with NAESU; plane captain and senior petty officer, James Norris, AD1, of VAH-7; and his assistant, Edward Pepper, AO2.

Fury Outfit Hits 10,000
Records No Accidents in 507 Days

Marine LCol. C. E. Schmidt, commander of VMA-212, was dunked in Kaneohe Bay in celebration of the squadron's reaching its 10,000th hour of flight without an accident. He landed the FJ *Fury* which established the record. He has been skipper of the squadron since January 1959.

In 507 days of accident-free operations, the squadron operated out of Atsugi and Iwakuni in Japan, returned to Kaneohe Bay aboard USS *Midway*, deployed again to El Toro, and twice made carrier qualifications.

Squadron pilots made 165 landings aboard the *Bon Homme Richard* and others qualified aboard the *Ticonderoga*.

Within the record period, pilots have made 8072 day landings, 564 night landings, 4974 day field carrier and mirror landings, and 199 carrier landings for 13,809 total landings since the last accident.

THIS VIEW OF NIGHT OPS SHOWS LTJG. M. A. PERRO FOLLOWING 800TH CARRIER CONTROLLED APPROACH ON USS LAKE CHAMPLAIN

NIGHT AND DAY

This year Air Anti-Submarine Squadron 32, headed by Cdr. W. V. Whidden, celebrated its tenth anniversary. Equipped with S2F Trackers since 1954, it took part in USS Nautilus evaluations and in Project Argus. Before assignment to USS Lake Champlain, CVS-39, VS-32 spent 6 months with Task Group Bravo on Wasp.

VS-32

VS-32 TRACKER CATCHES WIRE ON THE CHAMP, SQUADRON'S PERMANENT HOME AFLOAT

HOT AND COLD RUNNING WRITERS

The helo, which fails to perturb the usually unperturbable penguins, figures in a forthcoming feature submitted by VX-6's Scot MacDonald concerning a history of helicopter operations in the cold, vital Antarctic. In this issue, VAH-4's Gary Caron from NAS Whidbey Island, spins a solid narrative about his squadron's pioneering of a new route to Nippon. It's a tale we're proud to present. In August from sunny Florida comes the flippant, fact-packed story by Paul S. Goldman who shows his VAH-7 teammates in action. How about your outfit? Up to its pitot tubes in snow or sweltering in the desert, your squadron has a story to tell. It is easier than you think to gather the pictures and relate your squadron's experience. So start running with it, get it on paper and run it in our direction: Naval Aviation News, Op. 05A5, Navy Department, Washington 25, D. C.

NAVAL AVIATION
NEWS