

NAVAL AVIATION

NEWS



48th Year of Publication

NOVEMBER 1966

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ONE PLANE, ONE INSTRUCTOR

With one airplane, one instructor and a desire to serve their country, these young men met on Long Island in 1916 to learn to fly. From this First Yale Naval Aviation Unit evolved the modern Naval Air Reserve, 50 years old this year (see page 14). Legend: back row, L. to R., Vorys, Gates, Ditman, Ames, McCulloch (instructor), Trubee Davison (organizer of the unit), Lovett, Gould; front, Laud Brown, mascot Ella, H. P. Davison, Jr.



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■ COVERS

The front cover shot depicts a flight deck scene aboard USS Franklin D. Roosevelt as photographed through a fisheye lens by PHC Neal Crows. The Gemini 11 pictures (p. 25) were made available to NANews by the National Aeronautics and Space Administration.

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NAVAL AVIATION NEWS



THE NEW 'B' MODEL of the T-2 Buckeye, built by North American Aviation, is being phased into the Basic Training Command for air-to-air gunnery and carrier qualification training at Pensacola's jet Training Squadron Four. The first class of flight students to undergo training in the new Buckeye are seen here in front of the aircraft: LCdr. H. H. Caserta, Training Officer, Ens. D. W. Means, Ens. J. Millar, Jr., Ens. H. A. Jatzek, Jr., MarCad F. E. Littlebury, Ens. R. R. Greathouse, Ens. R. L. Cobb, Ens. J. R. Scales, Jr., Ens. M. G. Evans, and Cdr. H. E. Graham, the Commanding Officer of Training Squadron Four.

Ltjg. Chapman is Honored Named Britannia Award Winner

On August 30 at MCAS YUMA, Ariz., Ltjg. Austin E. Chapman, VA-56, was named the Naval Air Training Command Flight Student of the Year for 1965. He was presented the Britannia Award, a scroll and silver trophy, by Rear Admiral P. N. Compston, Commander British Navy Staff.

The Britannia Award was established in 1956 by the British Royal Navy in appreciation of U. S. assistance in training British naval pilots. It is awarded annually to a flight student selected for his aerial weapons proficiency.

A 1963 Academy graduate Ltjg. Chapman completed flight training in February 1965 at NAAS KING-

VILLE, Texas, where he compiled the highest over-all student weapons score for that year.

Ltjg. Chapman recently returned from a Seventh Fleet deployment with VA-56 aboard USS *Ticonderoga*. He earned 11 Air Medals and the Navy Commendation Medal on that deployment.

VA-56, based at NAS LEMOORE, Calif., was deployed to MCAS YUMA at the time of the award.

Operating Time is Extended 3-M Improves Jet Engine Time

During calendar year 1965, the maximum operating time of Navy jet aircraft engines was extended an average of 23 to 30 percent, according to NASC.

Improved management of the jet

engine program at the three levels of maintenance—depot (overhaul), intermediate (complete repair), and organizational (squadron)—is credited with the extension of operating time and reliability. Significant savings were also noted in the reduction of man-hours expended.

The maintenance effort is being supplemented by an improved system of rapidly incorporating power plant changes developed under the jet engine Product Improvement Program.

Improved maintenance also contributed to the 36% reduction in the number of accidents owing to jet engine failure.

NAS Oceana is Expanding \$5,000,000 Building Program

NAS OCEANA, Virginia Beach, Va., is currently expanding its facilities with a \$5,000,000 building program.

New construction includes an aircraft maintenance hangar with concrete parking apron, an enlisted men's barracks, a high altitude pressure chamber, additional space for repair of technical aircraft equipment and an addition to the station's dental clinic.

With a design that represents the



NEW CONSTRUCTION AT OCEANA

latest advances in aviation structures, the new hangar will consolidate Oceana's expanding maintenance divisions into one general area. The jet engine programs of the F-4 and A-6A will be in the new building.

In addition to the operational projects, several buildings are either being built or renovated with Navy Exchange profits. These include a new wing to the Exchange complex and modernization of the petty officer's club.

VR-21 Sets a Safety Mark 200,000 Accident-Free Hours

Fleet Tactical Support Squadron (VR) 21, based at NAS BARBER'S POINT, Hawaii, has passed its 200,000th accident-free flight hour.

The squadron logged the time during a period that spanned ten years. Commanded by Captain H. E. Sorenson, VR-21 averages some 3,600 flight hours a month.

Add-on Contract Awarded Bell Will Build More UH-1E's

The Navy has awarded a \$1,872,000 add-on contract to Bell Helicopter for the purchase of 27 Marine Corps UH-1E's. The purchase brings to 58 the number of UH-1E's bought for the Marines in FY 66.

The *Iroquois*, now operational in Vietnam is a ten-place, turbine-



THE FIRST full-scale test of Navy's Phoenix missile and its advanced electronic system took place September 8 over the Pacific Missile Range. An A-3A equipped with Phoenix and its control system located a jet target drone on radar, locked on at long range, and intercepted it in flight. Phoenix is being developed by Hughes Aircraft Co. for use on the F-111B. In photo, taken during earlier test, missile drops from an A-3A Skywarrior.

powered, utility helicopter. Army Aviation Material Command will administer the contract.

HC-1 Det. Relieves Army To Support PBR's in Vietnam

A new chapter in the annals of naval warfare unfolded recently as the Navy began operating armed helicopters in support of combat operations in Vietnam.

On August 30, pilots and crew members from Detachment 29 of HC-1 relieved their Army counterparts aboard the dock landing ship

USS *Tortuga* (LSD-26) on station.

Since Operation *Game Warden* began in April, Army pilots and crews, based on board *Tortuga*, have flown UH-1B *Huey*'s in support of the Navy's river patrol boats (PBR's). Navy personnel assumed this support mission under the "one service team" concept.

Before reporting for duty in *Tortuga*, Det. 29 personnel underwent classroom and on-the-job training with the Army's 145th Aviation Battalion in Vietnam.

Detachment 29's Commanding Officer is LCdr. W. A. Rockwell.



ON SEPTEMBER 12, Major General Keith B. McCutcheon, Marine Corps' Deputy Air Chief of Staff, accepted delivery on the first five CH-53A's at Sikorsky's Stratford, Conn., plant. At left, with General McCutcheon, are J. A. McKenna, Sikorsky vice president, and Commander W. G. Forster, Navy Sikorsky Rep. Pilots and crews of



HMH-463, first squadron to get the CH-53A, flew the copters from the East Coast to MCAS Santa Ana, Calif. Formation at right is over Long Island Sound. The CH-53A carries a three-man crew and 38 combat troops or four medical attendants and 24 litter patients. Powered by two turbine engines, it can fly at over 200 miles per hour.



GRAMPAW PETTIBONE

Hung Hawk

The night was fine for carrier qualification landings when this *Skyhawk* pilot left the catapult for his first go at night landings. CCA picked him up forward of the ship and turned him downwind. He made the normal abeam call and a few seconds later was turned into the final bearing. The eager driver picked up CCA glide slope at two and three-quarter miles and called the ball at one mile with a fuel state of 3,400 pounds. He went a little low and slow during the initial portion of the approach and subsequently corrected to a slightly high. Paddles called for a little power as he corrected from the high ball and the driver dropped the left wing slightly as he crossed the ramp.

The A-4 touched down left of centerline, engaged number four cross deck pendant and almost came to a full stop when it dropped into the port catwalk. The ambiguous *Hawk* hesitated for an instant; dropped a little further; hesitated again and finally dropped completely off the deck edge. The tailhook held on to the cross deck pendant and the A-4 came to rest with its nose barely in the water and the engine delivering 100% power.

A completely confused and disoriented pilot thought of his Dillbert Dunker training but, since he was still dry and uninjured, decided to leave well enough alone. After several radio calls, Paddles got through and instructed the wayward lad to bring the throttle aft and secure the engine. As things came back to normal, this young fella safetied his seat and organized his thinking. The ship had slowed to a stop by this time and a few lines were draped over the side to aid the pilot. Owing to the precarious position of his aircraft (hanging straight down), it was difficult for this lad to maneuver or to see

This stuff ages you!



Calorn

the effort taking place on deck to retrieve him. He grabbed one of the dangling lines with hopes of being hauled on board but, to his dismay, found it unattended. It

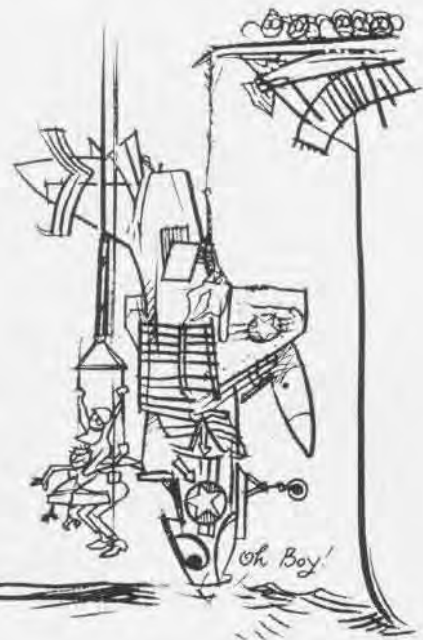
came down upon him when he tried to take tension. Confusion ensued with instructions to abandon the aircraft by getting into the water and other instructions to remain in the cockpit as help was on its way. It was finally decided that a man would be sent down on a painter (sling) lowered by tillie.

As the rescuer (descending on the painter) arrived in the vicinity of the cockpit, he threw a line to his victim who was subsequently hauled close aboard. Working together, the twosome tried to release the rocket jet fitting so the pilot could sit on the helper's shoulders. This maneuver didn't work. The pilot then placed his left knee on his buddy's left shoulder and holding onto the lines both gymnasts were hauled to the flight deck. The A-4 (still hanging on the wire) was hoisted aboard shortly thereafter by tillie.



Grampaw Pettibone says:

Fetch me another aspirin tablet! This one strikes an old used



Oh Boy!

ILLUSTRATED BY *Calorn*

and badly abused nerve of Gramps.

As many years as we've been in this business, you'd think everybody'd know you gotta have that line up when ya cross the ramp. Paddles didn't do this fella any favor by just lettin' him get aboard. The only way to get these newcomers indoctrinated is to make 'em get set up proper or send 'em around. And droppin' that wing for line up after crossin' the ramp is about as sensible as catchin' rain water in a sieve.

And now about sittin' in that danglin' bird. Having my druthers, I think I'd druther get clear of it and ride the carrier's helo than take the chance of having it break loose and take me down with it.

Pinless-Prang

After a routine preflight, a pilot and copilot manned their S-2F for an instrument flight. Turn-up and taxi were normal and the aircraft departed the East Coast air station at approximately 0900. The flight proceeded VFR to a nearby NAS at 4,500 feet to practice ADF and GCA approaches, but when the pilot lowered the landing gear to begin a let-down, he noticed the starboard gear showed barber pole. He raised and lowered the gear several times but each time got the barber pole on the starboard gear.

The pilot returned to home base and notified the tower of his problem. En route, he and the copilot checked the NATOPS manual to make sure they were using proper procedures for a hung gear. The squadron sent a representative to the tower who instructed the pilots to climb and, among other things, to try pulling positive and negative G's and skid maneuvers in an attempt to get the starboard gear down. All efforts failed to break the gear out of the well and soon another S-2F joined on the aircraft for a visual check.

The pilot reported that the wheel well doors appeared fully open and the shrink strut extended. After this inspection, the pilot of the S-2F with the hung gear attempted to pump the wheels all the way down, rather than drop them first. Then he tried to tear the "jay" hook out by raising and lowering the gear.

While the pilots were trying to remedy this situation, arrangements were made to land the S-2F on a foamed runway at a nearby NAS. The pilot calculated his fuel consumption in order to land with approximately 300 pounds of fuel. While descending to the traffic pattern, he went over the check-off list and prepared for a wheels-up landing.

The approach was started four miles out at an altitude of 1,500

The nut on the outboard door connection backed off and the bolt fell out due to normal vibration. Records clearly showed that the starboard landing gear door actuating cylinder had been replaced but the aircraft had flown 41 hours since replacement.

It's pretty easy to see that the man responsible for replacing the cylinder forgot to install the cotter pins, but what about the quality control people? Where were they? Also, the plane captains, pilots and crews who sup-

Somebody
SAVE me!



feet with hook down, auxiliary pumps off, and gear up. At about three miles and 110 knots, the port engine was feathered and secured. Flaps were then at one-third and were lowered to two-thirds about two miles out. At 200 feet and 100 knots, flaps were lowered to full, the starboard engine feathered, secured and the prop aligned by the copilot. The S-2F touched down on centerline at an airspeed of 85 knots in a nose-high attitude and skidded approximately 1,400 feet before stopping in the center of the foamed runway. There was no fire and both pilots left the aircraft uninjured.



Grampae Pettibone says:

Holy cow! What a way to bang up a perfectly good bird. It really wasn't too hard to locate the problem with the starboard gear once the investigators got a look at it. Cotter pins had not been installed in the bolts connecting the starboard landing gear door arms and the actuating cylinder.

posedly preflighted the aircraft for the 19 hops prior to this one must accept part of this blame. Many people were involved in mashing up this little bird.

I sure have to hand it to pilot and copilot for the way they handled this mess. Looks like we had a couple of well checked-out gents driving this bird and it's a real pleasure to add their names to Gramps "Ole Pro" list.

Loud and Clear

Safety doesn't depend on a series of new and brilliant ideas. Safety is, basically, the product of professional slugging along day in and day out. Safety is the product of long and especially persistent effort and determination.

There is nothing glamorous or romantic about flight safety. It's the monotonous accomplishment of the minute chores. It's doing what you're supposed to do when you're supposed to do it, the way you're supposed to do it. If you do, flying is safe. If you don't, it isn't. It's just that simple.



MEMENTOES OF 40 YEARS AROUND HIM, VADM. RAMSEY LEAVES THE NAVY

RAMSEY RETIRES AS DCNO (AIR), CONNOLLY MOVES UP

THE NAVAL AVIATION Establishment has undergone major changes in management, both in personnel and in methods of administration.

On the personnel side, Vice Admiral Thomas F. Connolly, USN, moves into the Pentagon to assume the principal aviation manager's post, Deputy Chief of Naval Operations (Air). He relieves Vice Admiral Paul H. Ramsey, USN, who retired October 1 following an aviation career that started in 1927.

Admiral Connolly was relieved as Commander Naval Air Force, U.S.

Pacific Fleet, by Vice Admiral Allen M. Shinn, USN, who had served previously as Commander, Naval Air Systems Command, in Washington. Admiral Shinn was relieved by Rear Admiral Robert L. Townsend, USN, on September 1.

The departure of Admiral Ramsey marked the end of a career of "firsts" for a pioneer test pilot and senior Naval Aviator. Admiral Ramsey received the Navy Cross during World War II when, as Commanding Officer of a fighter squadron aboard USS *Lexington*, he participated in the Battle of the

Coral Sea. Earlier this year, Admiral and Mrs. Ramsey were representatives of President Johnson in Australia and New Zealand during anniversary celebrations of the 1942 sea battle (NANews, July, p. 11).

Other major commands held by Admiral Ramsey included those of Commander Naval Air Force, U.S. Atlantic Fleet; Commander Naval Air Test Center, Patuxent River; Commander Carrier Division One; and C.O., USS *Philippine Sea* (during the Korean conflict).

Admiral Connolly is a midwesterner (born in Minnesota but now



VICE ADMIRAL T. F. CONNOLLY



REAR ADMIRAL R. L. TOWNSEND



VICE ADMIRAL ALLEN M. SHINN

maintaining Michigan residency) relieving another midwesterner (Admiral Ramsey was born in Ohio). Assigned as ComNavAirPac in 1965, Admiral Connolly is returning to the Pentagon after only a year on the West Coast. He was Assistant Chief of Naval Operations for Fleet Operations and Readiness in Washington when he was ordered to the command of Naval Air Force, Pacific Fleet.

A graduate of MIT, (M.S. in Aeronautical Engineering) as well as the Naval Academy (class of 1933), Admiral Connolly was designated a Naval Aviator in 1936. His former

commands include Carrier Division Seven, the aircraft carrier USS *Corregidor*, Heavy Attack Squadron Six and Patrol Squadron 13. He twice had flight test duties at Patuxent as Director of the Test Pilot School and as Assistant Flight Test Director.

Rear Admiral William I. Martin, USN, Assistant Chief of Naval Operations (Air), is acting DCNO (Air) in the interval between Admiral Ramsey's departure and Admiral Connolly's arrival.

Except for a year spent at sea, Admiral Shinn has been associated with the "producer" side of the

Naval Aviation establishment since 1961. Previously he had commanded two carriers (USS *Saipan* and USS *Forrestal*) and two Carrier Divisions (14 and 6).

Before turning over the NASC reins to Admiral Townsend, Admiral Shinn wrote a report to the Chief of Naval Operations presenting his views on the recent re-organization of the Navy and earlier changes made within the Navy.

His views, because of their historical interest and the management changes they portend for the future of Naval Aviation, are presented on the following pages.

THE NAVAL AIR SYSTEMS COMMAND ITS ORIGIN, PRESENT STATUS AND FUTURE PROSPECTS

By Vice Admiral Allen M. Shinn, USN

THIS YEAR, on the first day of May, the Navy's time-honored Bureau system was abolished, and the Naval Air Systems Command, among other new organizations, came into being. As the last Chief of the Bureau of Naval Weapons (BuWeps) and first Commander of the Naval Air Systems Command (NASC), I have been the natural recipient of many questions about the new organization, its origin and its future. This paper is a general answer to questions I've received and it includes some background discussion.

BuWeps lasted exactly six years and five months. First as Assistant Chief, and later as Chief of the Bureau, I was part of BuWeps for over three-fourths of that period—longer than any other flag officer. Therefore, not only do I bear considerable responsibility for the metamorphosis, but also I have some insight as to the reasons for it.

CERTAINLY, the Naval Aeronautical Organization never can be any better than our carrier commanding officers and our squadron and wing commanders. Nevertheless, the organization for development, procurement, maintenance and material support of aircraft and air weapons systems is a vitally important factor in maintaining our lead in aviation performance, as well as in keeping our in-service equipment operational. Hence, all of us need to be aware of forces and factors involved in material support, what they may portend for the operators, and how they may be organized to obtain the best material and gain the most efficient support.

There are many schemes used to organize human interests. Frequent are common purpose, common belief, common inheritance, common background or experience, common skills or knowledge, and, of course,

geographic factors. There are others; but these are the major foundations of most of mankind's organizations.

Historically, the Naval Material Support Establishment (NMSE) has been organized predominantly on the basis of common skills and knowledge, i.e., technology and engineering. In each bureau there were grouped acknowledged experts in civil engineering or steam engineering or supply technique, etc. The Bureau of Aeronautics (BuAer) was no exception. It was organized in 1921 on the basis of the newly-developing technology of aerodynamics and engineering applications thereof to the rapidly expanding functions of aeronautics. Owing to the unique relationship of aviation to the rest of the Navy, as BuAer developed, it at first assumed an extended role in control of aviation personnel and operations not unlike some contemporary "Special Project" activities. But BuAer's genesis was in technology and its organization remained essentially so based.

Last of the bureaus to be established was BuWeps. Here again, technology was the basis of organization. Since 1842, explosive and ballistic technology had been the basis for the organization and operation of the Bureau of Ordnance (BuOrd). But new aeronautical weapons applications had led BuAer to develop similar technological capabilities in the air-launched weapons field. It was decided that the capabilities of the two organizations in missile guidance, propellants and explosives should be merged, creating one instead of two bureaus involved in the development, production and support of naval weapons. Consequently, BuOrd and BuAer were abolished in 1959, and BuWeps was formed.

BuWeps performed well—better in some areas than

others, but the results of its operations are evident today in Southeast Asia and elsewhere, and they are creditable. Nevertheless, BUWEPs was overtaken by events. Organizationally, its purposes were too diverse. Common purpose is one of the strongest bonds of human organization, but in BUWEPs this had been subordinated to the concept of common technology. Similar capabilities—rather than similar end results desired—had dominated and determined the organi-



A-4'S ARE A MAINSTAY OF AIR POWER IN VIETNAM

zation. This scheme of grouping and organizing by technologies was overtaken by the logic of "project" and "systems" organization—which was beginning to occur at about the time BUWEPs was formed.

Over-simplifying the BUORD/BUAER merger, one could say that we had two "vehicle" bureaus—BU SHIPS and BUAER—and one "payload" bureau—BUORD; and that we put all the payload into one vehicle bureau—BUAER. In retrospect, it probably would have been wiser to divide the payload appropriately between the two vehicle bureaus, thus favoring the "systems" organizational concept of common purpose and end results instead of the concept of common technology and capability. (It's easy to apply critical hindsight in 1966.)

The historical solution to BUWEPs' dilemma of diverse purposes and end results was to form "Special" projects which gradually split farther and farther away from the parent bureau. The *Polaris* project was first; then surface-to-air missiles; then the anti-submarine warfare project, with torpedoes, etc. Steadily, each of these Special Projects became more and more like a separate technical bureau, with accompanying drain on the technical strength and resources of the established bureaus. Toward the end, the only part of other-than-air (which we will hereafter call OTA) weaponry in which BUWEPs retained full responsibility and capability was conventional guns, together with a few similar shipboard ordnance items. For the remaining OTA weapons, BUWEPs had varying support responsibilities, but little to do with their development, production and maintenance.

Quite the contrary was the case with air-launched weapons and aircraft. For these, BUWEPs retained

full technical and management capability, control and responsibility. Even in those few cases (such as the F-111) in which special circumstances demanded Special Project management focussed at a higher level than the Bureau, the project management offices remained just that—small offices devoted to over-all management of the project, relying wholly on BUWEPs to provide the necessary expertise in design, engineering, production and all other technical matters. In the Navy (less than in the Air Force), aviation Special Projects have *not* tended to become bureaus in themselves.

The difference between our air and OTA Special Projects is quite marked, and there are rational explanations. When BUWEPs was formed, the Navy for the first time approached a systems-oriented organization of all Naval Aviation material interests. This



C-2A IS TESTED FOR CARRIER SUITABILITY ON CVA-63

wasn't done intentionally; it simply happened as a result of the merger of BUORD/BUAER. Nevertheless, the merger did place almost the entire aircraft weapon system in one bureau. The BUORD/BUAER dichotomy regarding air-launched weapons was eliminated; the only divided aspect remaining, in some degree, was electronics, or avionics, as it has come to be called. Over the years, avionics responsibilities had gravitated toward BUAER/BUWEPs; yet some unresolved electronic areas still remained. Otherwise, all skills, functions, technologies, scientific disciplines, etc., needed to develop, procure and maintain naval aircraft weapons systems were embraced in BUWEPs.

This does not mean that all functions necessary to produce air weapons systems must be accomplished in-house (within the Navy). Most are purchased from industry. The essential in-house technical capabilities are three, and they cannot be delegated to industry or to any extra-service organization without loss of service viability:

1. To define what naval aircraft weapons systems and related material are needed, to specify them in engineering terms and to translate them into contractual terms so that industry (or, rarely, in-house activities) can produce them.

2. To monitor production in order to assure that the Fleet gets the material ordered on time, perform-

ing according to specifications and at reasonable cost.

3. To provide the necessary technical/material input so that maintenance and operations may be accomplished with maximum efficiency throughout the life of the material.

But this was not the case with OTA weapons systems. At least two bureaus (BuWEPS and BuSHIPS) necessarily were involved in building a ship or submarine-based weapon system. This led to the creation of the Special Project, with supra-bureau coordinating authority delegated from SecNav to the Project Manager. This, in turn, led to the accretion of semi-bureau status and resources in each Special Project Office, hereafter called SPO.

Further, it may be that the OTA project managers felt that BuWEPS was aviation-dominated because, initially, about two-thirds of the 4,000 headquarters personnel came from BUAER and one-third from BUORD. (If BUORD's Aviation Ordnance group were to be counted as "aviation dominated," the fractions were about three-fourths air and one-fourth OTA). Consequently, there was at least arithmetical logic to support an opinion that OTA weapons projects held a minority position, and this served to reinforce Special Project separatist tendencies—which were necessary, anyway, to achieve an inter-Bureau span of control. But, regardless of cause, the historical results are incontrovertible: the OTA Special Projects split away from BuWEPS, tended to build their SPO's into separate bureau-type organizations and left, at the end, conventional gun ordnance and a few other items as the only OTA weapons systems wholly embraced in the Bureau of Naval Weapons.

Quite to the contrary, aircraft and air weapons systems remained wholly in BuWEPS.

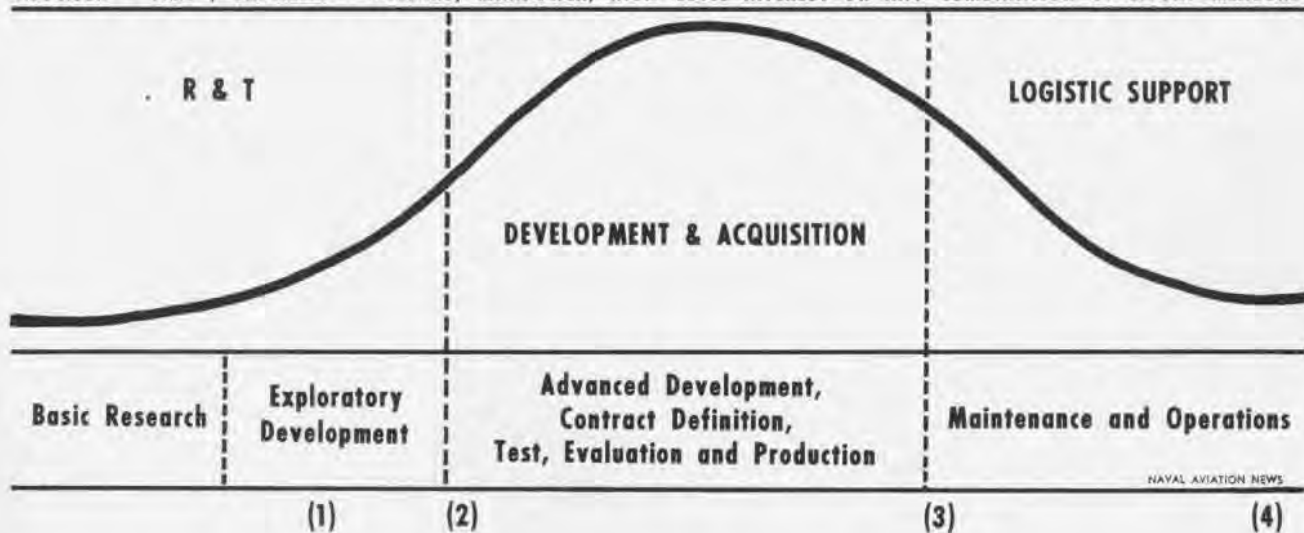
As Chief of the Bureau in 1964-65, it became increasingly clear to me that OTA Special Projects would never again become integral to BuWEPS. Therefore, I concentrated on holding together the aircraft and air weapons systems, while continuing to provide the required support from BuWEPS to OTA Special Projects.

In the spring of 1965, the first steps were taken toward the present Systems Command organization, consisting of six separate material commands instead of four bureaus. The first plan, a precursor of the present organization, did not gain acceptance because its rationale still relied heavily upon the traditional principle of common technology as the basis for organization.

Then came the Farmington, Va., conference, called in the summer of 1965 by the Chief of Naval Material. There, it was established that the basic principle of organization in the Naval Material Support Establishment would be to orient on systems, not on technologies; and that we would have Systems Commands embracing similar projects, with full life cycle (cradle-to-grave) responsibilities for their material management.

This kind of systems-oriented organization makes far more sense today than would the technology-oriented bureau. There will be, of course, some areas of technology in which two or more Systems Commands overlap; and there will be some duplication (or competition, depending on how you view it). But this is

ABSCISSA = TIME ; ORDINATE = DOLLARS, MANPOWER, HIGH-LEVEL INTEREST OR ANY COMBINATION OF EFFORT MEASURE



1. Decision to embark on development toward a specific purpose .
2. Decision to embark on concept formulation for a specific system .
3. End of primary production .
4. Disposal .

no more unreasonable than it is to have aircraft (and aeronautical technology) not only in the Air Force but also in the Army, Navy, Marine Corps and Coast Guard. Each of the services is end-result oriented, just as each of the new Naval Systems Commands is systems-oriented.

CREATION OF THE Systems Commands afforded an opportunity for internal reorganization; we have done this on the basis of "full life cycle" management.

One can plot the life cycle of an aircraft weapon system about as shown in the chart on page 9—where abscissa is time and ordinate is dollars, manpower, high-level interest or any combination of effort measures that you might choose.

In the R&T, or procreative end of the life cycle, internal laboratory and headquarters organizations need to be oriented generally along the lines of technologies, scientific disciplines and functions, because we don't know for sure in what direction—toward what end-result—the research effort may take us.

The second, or middle phase of the life cycle is the acquisition phase—"where the action is," in Washington. In this phase, we must become hardware and end-result oriented. Projects must be established and project management offices created. If we were not to do this on our own, we should be required to by Defense Department orders, today. But the truth is that the aeronautical industry and BUAER (as well as USAF) long ago embarked on project management. The BUAER Class Desk Officer was an embryonic project manager, with the Chief's authority to direct technical, schedule, and other actions with respect to a specific airplane project. This embryonic project management was substantially developed by the time our first Special Project (*Polaris*) came into being and rapidly set a success pattern for other project managers to emulate—or attempt to. After *Polaris*, *Minuteman* and some others, the Defense Department fully embraced the theory and practice of project management and, although it may appear, at times, that the pendulum has swung too far toward strict formalization, with copious project charters and trappings, nevertheless, we couldn't do our business today without an appropriate degree of project management. Aircraft and weapons systems are too complex, too closely intertwined these days to be procured efficiently by anything other than a coherent project management organization. Adding a .30 caliber machine gun and Scarff ring to the *O2U* airplane, on the one hand, and building the *Sparrow* weapon system into the *F-4* airplane, on the other, are totally different efforts—especially with respect to the extent of interlocking actions.

If the foundation of our acquisition process is project management—and it *is*—then it only makes sense to build major acquisition organizations around similar projects. That is what was done at the Farmington conference and the organizations are called "Systems Commands." We now have a Naval Air Systems Command which completely embraces aircraft, air-launched weapons, avionics, aeronautical equipment

and support therefor. During the months since, this "whole airplane" concept has stood the test of argument and debate many, many times, and the Naval Air Systems Command charter, signed by Secretary of the Navy Paul Nitze in March 1966, almost exactly follows the charter hammered out in the "Farmington Compact." The complete acceptance of the Systems Command, instead of technology bureau, as the basis of organization was outlined by Vice Admiral I. J. Galantin, the Chief of Naval Material, during a series of presentations to industry describing the new organization:

"It is good management sense to organize—not along 'discipline' or 'technology' lines—but along 'systems' lines. . . .

"This makes for effective management, although it doesn't please all who would say, for example, 'all ordnance should be under the Ordnance Systems Command' (some weapons are assigned to Air Systems)."

WHAT ABOUT the third, or Logistics Support (Maintenance and Operations) phase of our systems life cycle?

In the Fleet—where all our efforts are focussed in the end—support is organized on a "kind-of-warfare" basis under the type commanders (TyComs). Should we tend that way for logistics effort in our Systems Commands? Or should we put all logistics functions together in one "Logistics" organization?

Hardware or project orientation must be the basis for organizing the acquisition phase of our systems command, and I believe that the same organizational orientation has to carry over strongly into the logistics phase. Only in this way can we gain the best inter-relationships and "closed loop" organization for attacking the problems of operations and maintenance as they develop in the field and for making the engineering changes and design improvements needed to overcome them. Thus we can best relate our operational and maintenance experience to the design of new systems; we can economically utilize the same pool of technical resources both for design of new systems and support of systems already in service; and we can closely tie together the support and acquisition problems and consider them both at the outset, enabling us to procure all system requirements on a logically phased basis. Only with this full-life-cycle kind of material management can we best analyze and deal with total system effectiveness from the outset of each project.

In any logistic organization, there are similar functions performed, such as spares and repair parts support, depot maintenance, station support, etc. But through each of these functions, there must run the thread of Project and Systems organization and management. Hence, logistics is best performed as a phase of Systems Command full-life-cycle support, out to the point where logistics becomes the responsibility of the operating command—the Fleet. Broadly speaking, that point is the tidewater depot of the Fleet NAS. Logistics *is* a command responsibility, and its phases should be placed in the appropriate command—

SysCom or TyCom—instead of being lumped together in one, over-all "Logistics" command grouping. If we have chosen the parameters of our Systems Command organization wisely, there certainly is no need to organize logistics on any other basis.

THERE ARE SIX Systems Commands, of which the Air Systems is only one. How does it relate to the others?

The same logic that argues for an Air Systems Command can also argue for a Ship Systems Command, all-embracing of hull, machinery plant, ship-launched weapons, shipboard equipment and electronics. (As, in the Air System, we embrace airframe, power plant, air-launched weapons, aircraft equipment and avionics.) But this argument was not accepted, there



EA-6A IS TESTED ON DECKS OF USS KITTY HAWK

being logic on the other side for separating the complete ship among three Systems Commands (Ship, Ordnance, Electronics), and that is the organization that emerged. This triad organization will require an amount of supra-System Command project management for OTA projects—just as was the case in BUWEPs—whereas practically all air project management can be in-house, within the Air Systems Command. Earlier, before the Chief of Naval Material was placed in a commanding position, the interlock among three commands, in order to produce a whole ship, would have been extremely difficult. (It was difficult enough between two bureaus.) However, the CNM's command of the Systems Commanders greatly simplifies accomplishments of this interlock as it exists today.

The Air Systems/Ship Systems interface on catapults, arresting gear, flight deck equipment, etc., remains as it was for years between the two bureaus—a highly effective arrangement, with removable equipment the NASC responsibility.

Arrangements still being worked out between NASC and NOSC will develop in NOSC a uniform ordnance-handling system for storing, issuing and transporting all naval ordnance—after it has been designed, procured and delivered by the responsible SysCom—NASC for air-launched weaponry and NOSC for OTA. This one handling system will accomplish all accounting, storage, issue, transportation, etc., serv-

ices—again, only up to the tidewater depot where Fleet Service Forces take over.

BuDocks became the Naval Facilities Engineering Command (NFEC). Although not entitled a "Systems" command, NFEC does, in addition to its Public Works support services, provide end items such as airfields, hospitals, etc. But these projects are a part of other Systems Commands' projects or support re-



TWO SH-3A HELICOPTERS FROM VS-7 FLY OVER THE MED

sponsibilities. The NFEC is in part project-oriented but is chiefly a service-oriented organization.

BUSANDA became the Naval Supply Systems Command. Here, "system" obviously applies more to the network of invaluable supporting services (transportation, storage, distribution, inventory control, etc.) which NSSC provides to the other Systems Commands and to the Navy as a whole, than it does to any orientation toward major projects or end-items.

The NASC is the Navy's first material support organization devoted wholly to aircraft weapons systems and nothing else. BUAE had aircraft, as vehicles, but did not have all airborne weapons. BUWEPs, although it had the whole air weapons system, was divided among air and OTA efforts. I believe that the NASC is the best air material support organization we have ever had. It fits contemporary organizational requirements. It's internally sound. Externally, it meshes well with the rest of the naval support and operating organizations. And it's wholly air-oriented. We should have a fast and error-free infield among DCNO (Air), NavAirLant, NavAirPac, CNATra, Marine Aviation and NASC. But this will require an even distribution of talent; NASC will need its fair share of the drafted players, each season.

Throughout our NMSE reorganization there has been no question whatsoever about continuation of the Integrated Naval Aeronautical Organization; i.e., our completely unified organizations for aviation development, design, procurement, test, training, industrial and station support, supply and maintenance (down to intermediate/squadron level). The NASC responds to Marine Corps aviation requirements in exactly the same manner as to those of the Navy. Wherever this paper reads "Fleet" it, of course, includes Fleet Marine Forces.



USS STONEWALL JACKSON GETS POLARIS MISSILES

WHAT of the future? There will be some pressures to revert into a technology-based, bureau-type organization, but I don't believe that will happen. Vice Admiral Galantin's statement quoted above is clear evidence. Moreover, Admiral McDonald has stated in the *Flag Newsletter* that "we haven't just resurrected BUORD and BUAER." It seems clear that we shall stay systems-oriented, at least in the acquisition phase of our material management. But it isn't all that clear that we shall stay entirely systems-oriented in our R&T effort or even in our logistics effort.

In the R&T, or procreative, end-of-the-life cycle, there are more reasons to be technology-oriented than is the case in the acquisition phase. Even so, if we are to get the most from our R&T effort, it needs to be closely related to advanced development, acquisition and maintenance. Even though intra-laboratory organization may be technology-oriented, laboratory end results need to be hardware-aimed and product-oriented. In fact, in most cases, the RDT&E stations which contain our labs are devoted in major degree—some of them entirely—to advanced development of hardware, and also to engineering support of weapons systems already in service. This is as it should be. It gives the hardware Systems Commanders capable and essential in-house activities on which to draw for those technical/material responsibilities which they must discharge in development and test, production and maintenance.

Conversely, if the Navy's RDT&E stations were to be collected under a separate command—for the plausible reason of bringing more closely together the entire Navy R&T laboratory function—it would weaken the direct response from those stations and would degrade the Systems Command's ability to provide cradle-to-grave systems support.

The systems-oriented, full-life cycle material management organization offers the most effective means of development, acquisition and support; it would appear unwise to separate out a naval "R&T Command." Likewise, and for similar reasons, an all-embracing, functional naval "Logistics" Command

would appear unwise. But there are pressures which will push these "slice-of-life" (R&T, Acquisition, Logistics) organizational divisions toward separate functional command.

As between aircraft on the one hand and ships on the other, all the processes of design, development, procurement, production, operation and maintenance are so different—and necessarily so—that there does not appear to be any value in lumping together all of the Ship Systems' (including Ordnance and Electronics) processes together with the Air System processes, either at the R&T or the logistics end of the life cycle. (However, we might consider pulling together the logistics of ships and shipboard material in a joint logistics effort among Ships, Ordnance, and Electronics Commands.)

For Air Systems logistics, from the major procurement and maintenance points out to the periphery of tidewater depots where Fleet Logistics takes over, the NASC is best qualified to accomplish all naval aviation logistics—with appropriate and invaluable help from the Supply Systems Command and the Facilities Engineering Command. From tidewater on, the Fleet is the only proper Logistics command organization.

In the end, our technical logistics (as opposed to food, clothing and similar soft goods expendables) focusses on hardware items that are parts of larger systems. Logistics for technical items is more hardware-oriented than it is function-oriented. It deals with design, production and maintenance of assemblies, sub-assemblies and parts of assemblies—all of which must fit into a coherent whole system. Of course, logistics also depends upon functions and techniques, such as contracting, transportation, storage, issue and inventory control. But to put these functions first and to build an organization around them, rather than around the major hardware systems, would get the cart before the horse.

FINALLY, what of the new OpNav/NavMat relationship, now that the Chief of Naval Operations commands the Chief of Naval Material?

This linear organization was a natural development, inevitable after CNM took command of the bureaus, and much to be desired. Looking back, one can see how the Navy developed its bi-linear, and the Army its linear support system. In its early days, our Navy sailed off to sea, was commanded and operated there and got its only supplies when it came into port. There, periodically, ship chandlers furnished these re-supply needs. Later, bureaus ("king-sized ship chandlers") grew up to fill those needs and naturally came directly under the Secretary of the Navy because the naval commanders were off at sea and incommunicado. (It is less than 50 years that we have had a CNO, and less than 25 since we have had one who commanded the operating forces. For the first time, we have one who commands the whole Navy.)

The Army, quite the contrary, marched through the countryside and had to get supplies every day—if only food and forage. To the rear of the line of

march, the logistics tail followed along. The material business was a line responsibility—organized on a linear basis, from the outset. The Air Force simply followed the Army's linear pattern. The Navy, quite properly for today's requirements, now has adopted the linear material organization. The producer-consumer dichotomy of the bi-linear Navy, often extolled in the past, has been an overdrawn picture for a good many years. Today, the development-production-support-consumption process is much more of a continuum, or even a closed loop, than it is a bifurcated producer-consumer relationship.

The above obviously oversimplifies a very complex relationship, but it is well that we finally have put behind us the ancient and honorable, but quite outmoded, bi-linear concept. Necessarily, there will be substantive revision of the manifold relationships between the OpNav and NavMat organizations. Some duplication could be eliminated; but the greatest change, in the end, may result from more direct connection between sections of OpNav and NavMat organizations. No longer will "requirements" be formulated and passed across the Potomac, to be produced by an entirely separate organization; those who state requirements and those who produce hardware to meet the requirements now both bear linear responsibilities—albeit at different stations along the line.

It is not easy to forecast the changes in OpNav/NavMat relationships; they will be evolutionary, rather than revolutionary. But there is no doubt that there will be profound changes as the new "linear" Navy develops.

IN SUMMARY—if you've followed me thus far—

1. The BuWeps organization lacked the bonds of common purpose and similar system orientation necessary for complete success. It performed well, but

the technology-based bureau became an anachronism, early in BuWeps' career.

2. We now have a systems-oriented organization in the Naval Air Systems Command. It is devoted to full-life-cycle-management of aviation material and to nothing else. Its charter and its concept make it potentially the most capable aviation material organization we have ever had. All of us in NASC are determined to make it so in fact.

3. Pressures to reorganize will continue. The pressures to revert to the technology-based BuOrd/BuAer type of organization will decay with the realization that such an organizational concept is overtaken by events and cannot meet contemporary needs for project-managed, systems-oriented performance. The "slice-of-life" theory of organization (with functional R&T/Acquisition/Logistics Commands) undoubtedly will be advanced for some time to come. But I don't believe that this concept can offer as good performance as does the concept of "full-life-cycle-management" by the Systems Commands.

4. The revision of OpNav/NavMat relationships will evolve slowly and eventually will reach a true linear basis. This will be advantageous, so long as it is handled with restraint. We should work to achieve direct OpNav/NavMat correspondence in planning, budgeting, programming, spending, etc., that truly follows through on the systems-oriented concept of organization on both sides of the Potomac.

5. There are a few clouds on the horizon but, on the whole, good flying weather lies ahead. The NASC is internally sound; externally, it meshes well with the rest of our naval support and operating organizations; it fits contemporary organizational requirements; and it is entirely devoted—without any extraneous interest—to the material needs and support of the Integrated Naval Aeronautical Organization.



CARGO TRANSPORT 'TRADER' MAKES 65,000TH LANDING ON ENTERPRISE



USS ENTERPRISE AIRCRAFT WARM UP



YALE UNIT'S organizer, Trubee Davison, steps ashore after training flight. Crash kept him from receiving wings in 1917.



ADMIRAL RAMSEY pins wings on Davison during Naval Air Reserve celebration in July 1966. Event was held at Davison's home.

NEW YORK SALUTES THE FIRST YALE UNIT

OF THE HUNDREDS of local parties held during 1966 to celebrate the Fiftieth Anniversary of the Naval Air Reserve, the Navy Day dinner in New York City (October 26) could be rated as one of the largest.

The New York Navy League party may later stand out in a Naval Air Reserve year of reminiscence as the celebration most filled with nostalgia and remembrances of the year 1916.

Honored guests of the New York Navy Leaguers were F. Trubee Davison and surviving members of the "First Yale Naval Aviation Unit," an organization of college student flyers now recognized as the forerunner of the Navy's country-wide Naval Air Reserve.

There are some who call Trubee Davison "the Father of the Naval Air Reserve." Historian-purists will argue against such a title, for there had been efforts, on paper, to devel-

op a reserve aviation component as early as 1911.

But there is little doubt, even the historians will agree, that Mr. Davison was the first flying enthusiast to "go out and do something" about learning to fly and the first to provide immediate assistance to the Navy when the U.S. entered World War I.

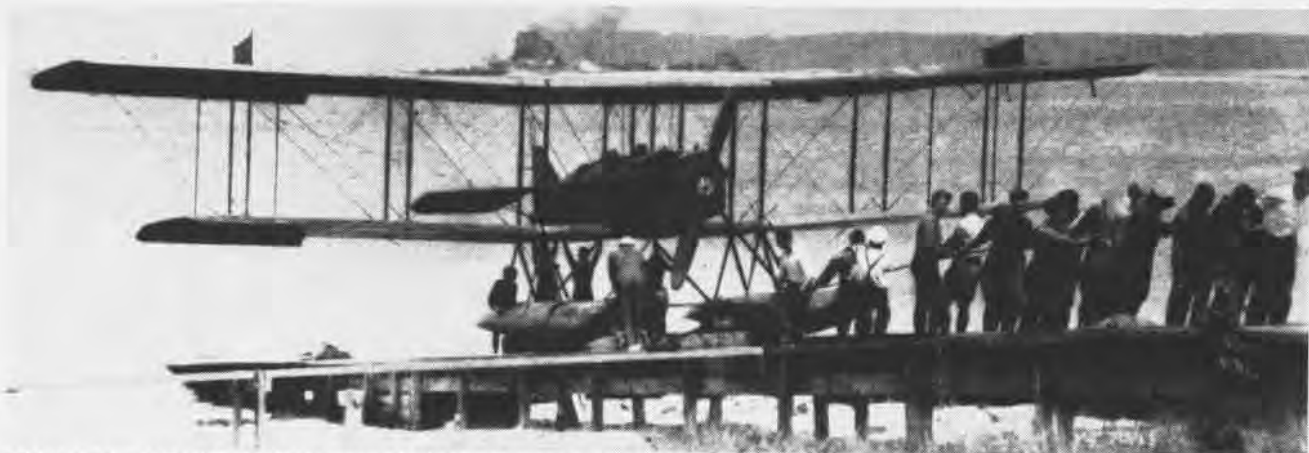
It was Mr. Davison, then a soph-

omore at Yale, who urged campus friends into forming what has become the most famous of all Navy flying units of World War I. The unit's formation in 1916 came, Davison recalls, sometime around June 13, 1916, right after President Woodrow Wilson ordered additional troops to the Mexican border to meet the threat of war with Mexico.

With fighting in Mexico imminent, Davison gathered together Yale undergraduates Allan Ames, class of '18; Henry P. Davison, Jr., Trubee's brother, '20; John Farwell III, '18; Artemus L. Gates, '18; Erl Gould, '18; Robert A. Lovett, '18; Albert Sturtevant, '16; John Vorys, '18; and Yale graduate C. D. Wiman, '15. Two non-Yale men, Wellesley Laud Brown and Albert Ditman, rounded out the first dozen of the First Yale Unit.

All these men had previously agreed that aviation held the great-





SEAPLANE USED AS TRAINER IS BEACHED AT HUNTINGTON BEACH, LONG ISLAND, DURING WORLD WAR ONE

est appeal for them in the event of war. Naval Aviation was then only five-years old, the Navy having purchased its first aircraft in 1911.

In his own account of the unit's formation, Mr. Davison reported:

"The problem of how to learn to fly was a real one. The obvious first step was to consult with someone who had aviation experience, and so we turned to John Hayes Hammond, Jr., of Gloucester, the great wireless inventor. Mr. Hammond was at that time Governor of the Aero Club of America, and he advised us to get in touch with Mr. Henry Woodhouse of that club who knew the aviation situation in detail and had worked out plans for its development.

"Mr. Woodhouse outlined a scheme of Aerial Coastal Patrol, which had been devised by Mr. Hammond and Admiral Robert Peary. In brief, they proposed to establish a series of seaplane stations to cover the entire coastline, each station having a certain territory to patrol and thus form the first line of coast defense. During the war this was adopted by the Navy Department.

"It was suggested that 12 Yale undergraduates undertake to form one unit, or one station, as a nucleus around which future service might be built. While this plan seemed to have no immediate application to a possible conflict with Mexico, it was essentially sound and seemed to offer an unusual opportunity in a pioneer service which we all know now to be of the utmost importance to national defense."

With the help of the Aero Club, Admiral Peary and Army officers, the unit's plan for training was established. The unit took over an airplane owned by Rodman Wanamaker's American Trans-oceanic Company, Port Washington, Long Island. With the airplane came David McCulloch, who later served the Navy as pilot of the NC-3 in the famous transatlantic seaplane flight.

That summer of 1916 was devoted to flight and ground training, using the one airplane, a Curtiss "F" seaplane, and McCulloch as the only instructor.

"If it had not been for the interest and enthusiasm of the pupils and for their desire to labor in any way that could facilitate instruction, it would have been impossible to accomplish what we did that summer," Davison recalled.

Students learned to work on engines and frames as part of their duties that summer. Airplane mechanics were in short supply.

Before the end of summer, four members had learned to fly and most of the others were ready for solo. In September, the unit worked with destroyers, battleships and Coastal Patrol boats in maneuvers



DAVISON STORY EVOKES SMILE FROM ADMIRAL FOWLER, CNARESTRA

off Sandy Hook. Davison said the use of airplanes was demonstrated in many ways. "First of all, it demonstrated the value of the airplane in locating hostile ships; secondly, it was proved that mines could be located far more efficiently with seaplanes than by surface craft, and thirdly, it showed to the Navy that civilians were not only interested in developing the aviation branch of naval warfare, but were devoting their time and energy to that end."

In March 1917, weeks before America entered the war, the entire unit transferred to West Palm Beach, Florida, and all members were given commissions in the Naval Reserve Force. After returning to Long Island with Navy equipment now added, the unit accelerated the business of training for war in earnest. As each trainee passed his flight tests, he became part of the rapidly growing Naval Aviation establishment. Some went overseas to command air stations;

Davison returned to civilian life after World War I, earning a law degree and serving in the New York State Assembly. For six years (late 20's and early 30's), he served in Washington as Assistant Secretary of War for Air. Other members of the original group had equally distinguished careers. Robert Lovett served as Secretary of Defense from 1951 to 1953 after serving as Assistant Secretary of War for Air from 1941-1945. Artemus Gates was Assistant Secretary of the Navy for



HUNTINGTON BEACH, Long Island, was busy aviation center in 1917 as Yale Unit men went through qualifications as pilots.



BLUE ANGELS overfly Davison's estate in a special salute to Naval Air Reserve and the Yale Unit during 50th Year party.

That fall, two more flying boats were added to the unit's flight line. Both were gifts, one from H. P. Davison, Trubee's father, then a partner in the J. P. Morgan financial firm.

To be nearer Yale during the fall semester, the unit moved its aircraft to the New London Submarine Base and flew from the Thames River until snow and ice stopped them.

As New Year's Day 1917 passed, the war with Germany seemed more inevitable and additional members were taken in by the Unit. They included Yale men Charles Beach, '18; Graham Brush, '17; Reginald Coombe, '18; David Ingalls, '20; Robert Ireland, '18; Oliver James, '18; Henry Landon, '17; George Lawrence, '18; Francis Lynch, '18; Kenneth MacLeish, '18; Archibald McIlwaine, '18; Curtis Read, '18; Russel Read, '20; William A. Rockefeller, '18; Kenneth Smith, '18; W. F. Thompson, '18; C. M. Stewart, '17; Samuel Walker, '17.

some went to fight and some to die. Sturtevant was the first Naval Aviator to be brought down in combat, Ingalls became the first Navy war "ace." Many gave distinguished service as qualified instructors and administrators of the enlarging program, at home and overseas.

Davison, the organizer and guiding director of the First Yale Unit, sustained serious back injuries in a crash and did not win his aviator's designation. He recuperated for six months and then saw limited service as a junior officer before war's end.

For his guiding hand, however, Davison received the Navy Cross. The citation reads, "for exceptionally meritorious service in a duty of great responsibility in the organization of the first Yale Aviation Unit, which formed the nucleus of the first Naval Reserve Flying Corps." (Combat was not a requirement for receiving the Navy Cross in those days.)

most of World War II. Ingalls was Assistant Secretary of Navy for Air. And John Vorys served in Congress.

Last July, as part of the Reserve birthday at NAS NEW YORK, a huge lawn party was held at Davison's Locust Valley estate on Long Island. Vice Admiral Paul H. Ramsey, DCNO (Air), pinned a set of Navy Wings on Davison and gave him a designation as an "Honorary Naval Aviator."

Those wings, 50 years after his start in aviation, may rank in stature with a handwritten scroll presented to Davison on June 18, 1921, by fellow members of the Yale Unit at their first post-war meeting. The scroll reads in part:

"We appreciate, more deeply than can be expressed, his leadership, his enthusiasm, his unselfishness and his devotion. And we wish, both as a unit and as individuals, to remind him of our loyalty and esteem and our sincere gratitude for the opportunity he created for us to do our part in the war."

New Buildings at Pensacola Congressman Bob Sikes Officiates

The Honorable Bob Sikes, Representative of Florida's First Congressional District and senior member of the House Committee on Military Appropriations, broke ground for the new Commissioned Officers' Mess Closed/Dining Facility (BOQ) and Enlisted Men's Barracks at NAS PENSACOLA at the end of August.

After the reception at the NAS, Congressman Sikes flew by helicopter to NAAS SAUFLEY FIELD to officiate at groundbreaking ceremonies for a new BOQ and the dedication of a Flight Training and Briefing Building.

Both BOQ's, expected to be completed by August 1967, will be three-story, all-masonry, motel-type structures with 222 bedrooms, each with a private bath, and 111 living rooms arranged in three-room suites. All rooms will open to the outside. The building will have a master TV antenna system with outlets in each room.

The new dining facility will be a separate, air-conditioned building adjacent to the BOQ.

The Enlisted Men's Barracks, with a capacity of 376 men, will have two and four-man bedrooms. Each bedroom will have built-in wardrobe-drawer-desks. The "H"-shaped building, three stories high, will be completely air-conditioned with a television lounge on each floor. It is scheduled for completion next April.

Students CarQual in T-2B Millar First for the Second Time

A man who makes "firsts" with regularity—at least in the T-2B *Buckeye*—is Ens. James Millar, Jr., VT-4 flight student at NAS PENSACOLA (see picture of flight class on page 2).

One of six flight students to carqual with two touch-and-go's and four arrestments each aboard the USS *Lexington* in the Gulf of Mexico, Ens. Millar became the first Training Command student to complete carrier landing qualifications in the new trainer.

Last August, Ens. Millar was the first student Naval Aviator to fly the twin-engine T-2B.

A-7A MARKS FIRST ANNIVERSARY

A RED-LETTER day in the short, action-packed history of the A-7A *Corsair II* came on September 27, the first anniversary of its maiden flight from the runways of LTV Aerospace Corporation's plant in Dallas, Texas. That short, initial flight by LTV's chief of flight operations, John Konrad, launched a flight test program that saw the A-7A amass 898 flights for a total of 1,304 flight hours by September 1 of this year.

Since that first flight a year ago, A-7A's have been rolling off the assembly lines. Thirteen of the new *Corsair II*'s have made one or more test flights.

In the anniversary month, eight planes were delivered to the Navy for Board of Inspection and Survey tests. Six went to NATC PATUXENT RIVER, Md., and one each to the Naval Missile Center, Point Mugu, Calif., and the Naval Weapons Evaluation Facility, Kirkland AFB, Albuquerque, N. M.

Also in September, the first A-7A's were delivered to VA-174's "Corsair College" at NAS CECIL FIELD, Fla. Pilots from VA-174 had flown the plane at Dallas and were ready to check out fellow instructors. East Coast pilots assigned to Fleet attack squadrons will come to Cecil to be indoctrinated in the *Corsair II*. (VA-122, the West Coast's training squadron at NAS LEMOORE, Calif., received their *Corsairs* in October.)

In the first year of flight testing, a total of 35 company, Navy and Marine pilots flew the airplane at Dallas, Patuxent, NOTS CHINA LAKE, Edwards AFB and Albuquerque. Two Air Force Pilots also flew the *Corsair II* at Dallas to assess its capabilities.

Probably the most intensive testing during the first year took place at Patuxent, where LTV test pilots Don Wilson and William Cato flew the plane 195 times. They made bomb drops, rocket and gun firings, catapult launchings and arrestments. During the test they dropped a variety of bombs—from 250 to 2,000 lbs.—and aerial mines and fired *Sidewinder*, *Bullpup* and *Zuni* rockets and missiles. West Coast testing of the A-7A included

flights at China Lake and Albuquerque.

Three teams of pilots and engineers conducted Navy Preliminary Evaluation tests of the plane and its various systems at Dallas during the year. The last one was completed in August.

More than 500 Navy officers, enlisted technicians and civilian maintenance personnel have been trained by LTV's service training section. This program is designed to aid Navy squadrons and overhaul and repair activities in keeping the A-7A's flying.

Although the *Corsair II* has just closed out its first year, the program dates back to 1963 when the Navy decided on the type of plane needed in the light attack class. The contract for the *Corsair II* was awarded LTV on March 19, 1964.

One of the provisions of the contract specifies that the plane require no more than 11.5 hours of maintenance work for each flight hour. Tests to determine if the A-7A meets this requirement are scheduled at Cecil Field this fall. The plane will be flown a minimum of 600 hours. Company and Navy technicians will maintain it during the tests. Nearly 100 Navy technicians were trained in Dallas for many weeks to prepare them for this test.

Carrier qualification tests from an aircraft carrier in the Atlantic also are scheduled to take place.

ASW Crews Win Trophies Praised for Skill and Airmanship

Quonset Point's best ASW crews have won the Bloodhound and Dipper-Excellence Awards.

The Bloodhound Award was won by Crew 8 of VS-28; the Dipper Award was taken by Crew 20 of HS-9. HS-9 is deployed aboard the Norfolk-based carrier, USS *Randolph*.

VS-28's Crew 8 is manned by pilot, LCdr. Robert A. Marcus; copilot, Ltjg. Larry E. Linn; AX1 James C. Warner and AMH3 Frederick Kitner. HS-9's Crew 20 is composed of pilot, Cdr. L. L. Partemer; copilot, Ltjg. Howard A. Elwell; AX2 C. W. Bubler and ADJ3 D. J. Walsh.



HIS ORDEAL CAUSED LTJG. DENGLER TO LOSE 61 POUNDS SECNAV NITZE GETS DENGLER'S ACCOUNT OF CRASH

A GROUNDED EAGLE ESCAPES CAPTORS

THE HEROISM and steadfast courage of Ltjg. Dieter Dengler, USN, have produced for the annals of 1966 a record of the undaunted spirit of one man. German by birth, but American to the core by naturalization and loyalty, Lt. Dengler, captured by the Pathet Lao, never gave up. After months of imprisonment during which he endured brutal treatment and almost incredible acts of cruelty, he made his way back to freedom.

On the morning of February 1, 1966, Dengler, 28, a medium-built pilot of 157 pounds, took off from the USS *Ranger* in his A-1H *Skyraider* on an interdiction mission against a line of communication targets in North Vietnam near the Laotian border.

In the attack, heavy ground fire crippled the *Skyraider*. Managing to keep control, Dengler headed westward and crash-landed in Laos.

Though dazed, he managed to get out, buried his equipment for the time, and evaded his detectors whom he heard yelling and shouting nearby. That night he slept in his lightweight sleeping bag and at

dawn started out on his trek again.

But at noon, while crossing a trail, he was captured by two Pathet Lao men dressed in U.S. military style. These captors took his watch, compass and other items.

The next eight days were a nightmare of harassment. Fatigued and hungry, Dengler was put through one ordeal after another. For example, he was forced to lie again and again on his back in spread-eagle fashion with his hands and legs tied at four stakes. Attacked by swarms of mosquitoes, leeches and other insects, his face became swollen.

He was marched through various villages and displayed to the inhabitants. Dengler was on one occasion tied to a tree and used for target practice. The bullets tore limbs from the tree close to his head.

He had no means of communication with his captors except by hand and other motions until he and his captors reached a village where a man, evidently a province chief, questioned him in broken French. Dengler told him that he had been born in Germany and had become a naturalized citizen of

the United States six years ago.

That official took from Dengler's guard the lieutenant's I.D. card, his Geneva Convention Card and his expired German passport which he used when he came to the United States in 1957. Speaking in broken French, Dengler said that he carried the expired passport to explain his German accent.

Dengler steadfastly refused to answer questions, responding to the interrogation only with his name, rank, service number and date of birth. Despite beatings he held out. He signed nothing.

On the eighth night, Dengler loosened his bonds, retrieved his shoes and sleeping bag and escaped, but it was only a matter of hours until he was recaptured, tied upside-down on a tree and beaten.

At this point, North Vietnamese soldiers took over guard responsibility and marched Dengler for three more days. On the fourth day at noon—the 14th day after the crash—Dengler arrived at a jungle prison where he was kept with six other prisoners until February 22. That day he moved with the other

prisoners to a bamboo stockade which they reached after a three-hour walk. Some of these prisoners had been in Communist hands for more than two years. The prisoners were held in thatched-roofed huts under armed guard. All were suffering from malnutrition.

Dengler urged escape and they decided the spring monsoon would be the best time to attempt it.

While they waited, a new commandant—the prisoners called him "Little Hitler"—took over and conditions worsened. Food, mostly rice, became scarce. The prisoners sometimes supplemented it with snakes and rats. Dengler and USAF 1st Lt. Duane Martin, both of whom had previously escaped, were constantly harassed by the guards and were shackled day and night. The physical condition of the prisoners deteriorated with repeated attacks of various diseases.

There was little to do, nothing to read. Occasionally they were forced to listen to the broadcasts of Hanoi Hannah. The typical routine permitted the prisoners to be led out in the morning to empty their bamboo toilet pails. Occasionally they were permitted outside to eat. At other times, they were confined to their huts, locked up in crude wooden foot blocks and handcuffed.

As April, May and most of June passed without the long awaited rains, the prisoners grew restive. Sick, tired and starving though they were, when they heard of the guards' plan to kill their prisoners, they decided on June 29 to execute their escape plan.

Dengler worked his way free of the foot blocks and the handcuffs, as he had done many times before, and slipped out the rear of his hut. He moved stealthily and stole four guns—two M-1's, a carbine and a Chinese rifle.

According to plan, Dengler passed the weapons out to his fellow prisoners. The escape was interrupted when two of the other prisoners were spotted. The guards rushed out of the kitchen hut, saw Dengler and fired at him. In self-defense Dengler returned the fire and, in the exchange, six of the guards were killed. Two others scrambled into the jungle and fled.

The prisoners gathered up some

food, then split into groups. Dengler and Martin stayed together. Both were barefooted.

Soon after this escape, Martin was stricken with malaria; several days later Dengler contracted jaundice. Mindful of their impaired physical condition, the two men decided to risk travel along a creek, rather than through the jungle.

During the second day, they survived on a handful of rice they had taken from prison and some snails they found along the way. The creek along which they were traveling had high waterfalls with steep walls and cliffs. They followed the creek for two more days, but travel became increasingly difficult because of the high ridges. Painfully, they constructed a raft, but lost it in a waterfall.

On the 10th day after their escape, they found an abandoned village. Since Martin was now desperately ill with malaria, they decided to stay together in a deserted hut.

The night of the 11th day and the morning of the 12th, they floated down a river on a small raft they had found near the village. When they bumped into a fisherman, he fled. Dengler and Martin floated on for several hundred yards, discarded the raft, then traveled by foot until dawn.

They shortly came upon another small abandoned village of two or three huts. The next morning they found some corn. After eating this, they traveled east over the mountain and to their shock found themselves back in the village where they had picked up the raft. Martin now was too sick to travel so they decided to stay and attempt air contact.

The morning of the 14th day, Dengler left Martin to locate material to make contact with aircraft. On the 15th day, he made a signal fire, but no rescue aircraft came.

On the 17th day, Dengler and Martin walked and crawled toward what they thought was another abandoned village. Suddenly a villager leaped from a hut. He carried a long machete with which he instantly attacked. Martin was slightly ahead of Dengler, in a crouched position. The villager struck Martin twice. The first blow hit Martin on the left leg; the second hit him at the junction of his

left shoulder and neck. Martin collapsed, mortally wounded. The villager swung at Dengler but missed. Gathering his remaining strength, Dengler dove into the bush and fled up a gully.

Shaken, hungry and nearly out of his mind, Dengler continued on alone. He returned that night to the village and burned it to the ground. He hid close by that night as a plane flew overhead, dropping parachute flares.

On the 18th day, Dengler climbed to the top of a ridge where he laid out an SOS signal, using panels from a parachute flare he had found. He waited all day and night on the ridge for rescue. The next morning, the 19th day, he followed a river and narrowly avoided a search party.

During these last days of evasion, suffering from malnutrition, jaundice and fatigue, Dengler repeatedly lost consciousness, probably 20 or 30 times. His bare feet were cut.

During the 20th and 21st days, Dengler crawled short distances close by a stream and used what remaining strength he had to keep clear of search parties and watch for rescue aircraft. On the morning of the 22nd day, he managed to lay out some panels from a parachute flare in the form of an SOS on a bed of rocks. He continued his prayers for rescue.

An Air Force A-1 *Skyraider*, piloted by Lieutenant Colonel Eugene Deatrich, spotted him. Dengler used all his strength to wave, then collapsed as the *Skyraider* circled.

At approximately 1100, an Air Force rescue helicopter, with Capt. William E. Cowell at the controls, flew overhead. Dengler saw it and watched the helicopter drop the harness which lifted him to safety. At that time Dengler weighed 98 pounds. Aboard the helicopter, he clutched the leg of a rescue crewman on the flight to Da Nang.

Dieter Dengler did in the jungle what he had done successfully at the Navy's survival school at Warner Springs, Calif. Caution, courage, daring and tenacity had brought him through.

In his own words, he rejoiced: "Man, it's great to be alive. You really don't know what freedom is until you have had to escape from Communist captivity."



THE MARINES HAVE

No matter what the mission, from 'search-and-destroy' to airborne assault, the Marines and aviation have become virtually inseparable companions in the Vietnam conflict. Though the tradition-steeped Marines this month celebrate the 191st anniversary of their creation, their reliance on jet attack





LANDED — BY AIR!

aircraft and helicopters has made them members of a highly versatile, mobile combat force as modern as technological advances will permit. Today's Marine knows his airborne support will get him to the action, provide assistance and firepower during the mission and, if necessary, get his wounded to refuge.



VIETNAM AND THE NORTHEAST MONSOON

FOR OVER a century, climatological information has accumulated from many parts of continental Southeast Asia. Much of the original data was developed during the long tenancy of the French in Indochina. Some of the records date back to 1860. These voluminous local surveys are available today.

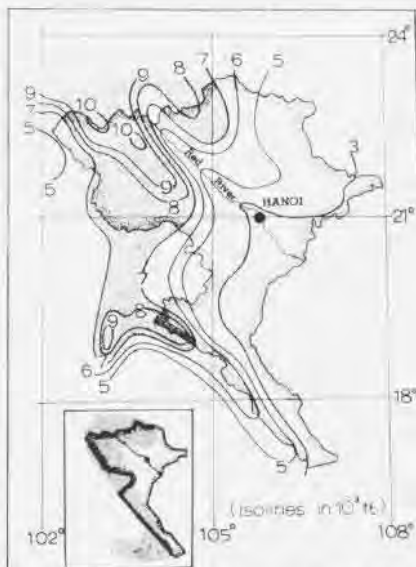
But there has been little study of the intricacies responsible for the vagaries observed in the regional synoptic weather patterns. Most textbooks accommodate the subject by briefly including it in chapters pertaining to tropical meteorology.

At the onset of the Vietnam crisis, heavy reliance was placed on climatology to support tactical operations. Climatology, however, refers only to the range of weather conditions characteristic of a locality. The mechanics of day to day weather systems that influence an area are not immediately identifiable by climatology. The military man quite rightly takes climatology into account in strategic planning—military history is replete with illustrations of the significance of weather in operations—but climatology per se frequently has only a limited application to daily operational forecasting.

The need was to discover the basis of the climatology in the area. Out of the Southeast Asia build-up came an unprecedented collection of weather reports from Vietnam and the South China Sea as pilots filled in the void over the silent areas. At times, the density of weather reports parallels that found in the United States. Day by day the wealth of information grows and provides the raw data necessary to study the meteorological kinematics of the region. Already the data are sufficient to support a hard look at the existing concepts of tropical meteorology as they influence Southeast Asia.

Climatology points out that the weather of Southeast Asia is influenced by two principal regimes: the Northeast and Southwest Monsoons. A "monsoon" is a term nearly synonymous with the word circulation. It is the northeast surface

By LCdr. Neil F. O'Connor, USN



THIS MAP DEPICTS topography of North Vietnam and illustrates how the land mass rises sharply from the East Coast to nearly 10,000 feet to the west. Inset shows clearly how the mountain range approximates an "S."

winds of November through April spreading across the South China Sea and into Southeast Asia that make up the Northeast Monsoon. The source of the northeast circulation is continental. During the winter months, outbreaks of cold polar air in the form of large high pressure cells push southward out of Siberia and into China. By the time the high reaches southern China, its progress toward the Equator has slowed considerably although the system may continue to drift southward or eastward. The clockwise flow across the bottom of the high pressure cell is responsible for the northeasterly surface winds that are experienced in the South China Sea and over continental Asia.

Studies made of last year's Northeast Monsoon at the Fleet Weather Facility, Yokosuka, revealed a relationship between the passage of storms that influenced Japan and the subsequent intensification of the high pressure cell over China. It was noted that the

cold fronts seemed to drift southward through the high, but this was only recognized after studying many charts. The large-scale, dynamic low pressure systems that boom across the middle latitudes of Eastern Asia force unmeasured amounts of cold air southward and substantially disrupt the equilibrium of atmospheric pressure over an area of many thousands of square miles. It is this cold air pulled from the polar regions that provides the thermal contrasts necessary for frontal development.

The fronts appeared to surge like waves on a beach as they were pumped southward through the China high by the action of the middle latitude lows. Most of the early research effort at Yokosuka was aimed at determining the existence of the fronts in the South China Sea, for the cold front at 20° north latitude is unlike the cold front that blasts and chills the prairies of Kansas and Nebraska. The detection of the fronts was based on temperature and dew-point contrasts which often extended to 5,000 feet or higher with the stronger systems. Cloud types and variations were all factors in the search. The identification and location of the fronts were probably the magnum opus of the research made on the 1965-1966 Northeast Monsoon.

Understanding frontal activity in this area requires that the land mass adjacent to the South China Sea and the Gulf of Tonkin be more carefully regarded. Only after studying the pilot reports over North Vietnam did the wisdom of this course become apparent. Early climatology and our own experience showed that the weather during the Northeast Monsoon is characterized by low ceilings and rain. One major study made prior to World War II suggested that these conditions were the result of interaction of the continental air upon and with the surface of the South China Sea. This phenomenon, called the "Crachin," was popularly accepted. Now, with data which were never available to earlier re-

searchers, some doubts have arisen on the completeness of this theory. The geography of Vietnam seems to point to some answers.

The faulted and folded mountain range that dominates the landscape of North Vietnam is called the Annamite Cordillera (map on page 22). The crystalline massif fairly approximates a lazy "S" shape with the highest peaks found at the top of the S, where Mt. Fan Si Pan in northwest North Vietnam climbs to 10,308 feet, less than 100 miles south of the China border. The steep slopes of the range open to the east facing the Gulf of Tonkin and the South China Sea. In referring to the S shape, the upper indentation of the S contains the 750-mile-long Red River which drains the narrow structural trench formed by the meandering Annamites. The southern portion of the mountain range parallels the coast, falling abruptly away, leaving only a narrow fringe of lowlands between the mountains and the sea. This strip is known as the Annam coastal plain, but the press has lately begun to identify it as the "panhandle."

One other mountain range is significant: the spur of the Annam that runs eastward along the China-North Vietnam border. It is less impressive than its cousin, with much lower peaks and pronounced breaks in the ridge line, but nonetheless, still important. Besides the influence on the socio-economic order of the country, the Annams exert a profound effect upon the weather during all seasons of the year. It is during the Northeast Monsoon that this relationship becomes most pronounced.

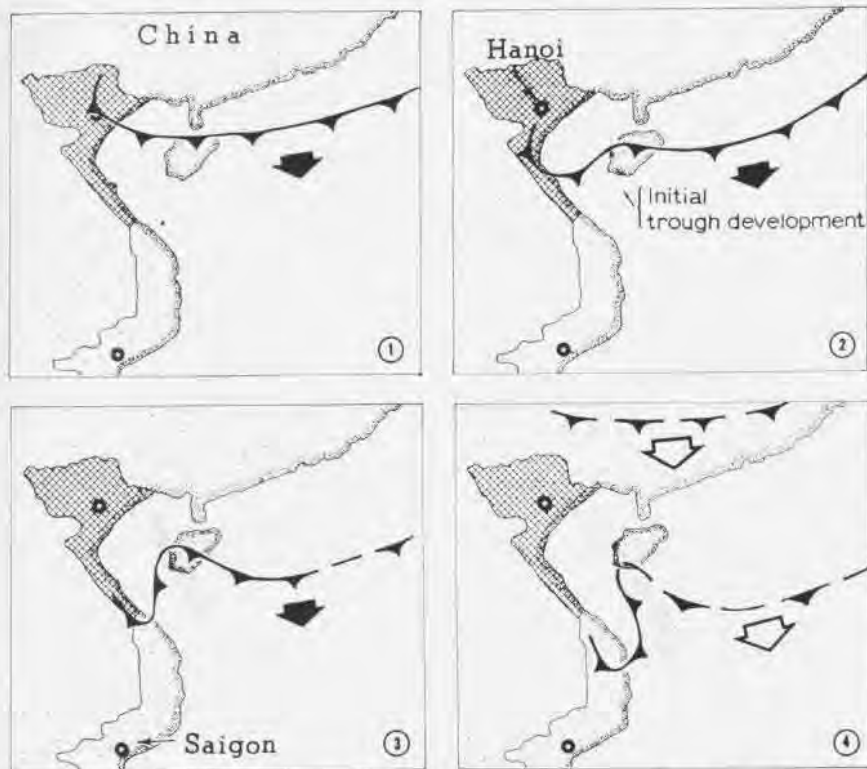
A real appreciation for the topography is gained during the winter months when cold fronts followed by major polar outbreaks push southward into the Gulf of Tonkin and North Vietnam. The Annams are a formidable barrier to the west to any invading air mass and thus provide a unique topographical cold air and weather trap. The closure, centered about the Red River Valley, effectively constrains any north to northeast flow, with escape available only through the mountain passes or southward along the coastal plains. Continued flow of cold air into the

trap following a cold front actually forces the western portion of the cold front rapidly southward along the panhandle and out the southern entrance to the Gulf. On several occasions this forcing action has prompted circulations of near gale proportions just to the southwest of Hainan Island. The frontal system has been labeled the Gulf of Tonkin Cold Front.

Further influence of the land mass of North Vietnam is seen during the Northeast Monsoon. Throughout the season the Annams stand abruptly astride the prevailing wind flow, and in so doing, become a classical low cloud producer. As everyone knows, temperature decreases with height, the rate being about 5°F for every thousand feet of ascent. If a box of moist air sitting at sea level with a temperature of 55°F and a dewpoint of 50°F were suddenly thrust upward to 1,000 feet, chances are that when you opened the box you would find a small cloud, for condensation takes place when the temperature and dewpoint coincide. This cloud-forming process literally takes place throughout the duration of the northeast monsoon over North Vietnam, where the moist easterly flow is forced upwards as it encounters the land mass. This kind of cloud formation is not uncommon, for clouds are seen to form daily on the windward sides of Hawaii and Guam. Extensive cloud formations caused by this method of mechanical lifting are found to the west of the Cascades, Rockies and Appalachians during most seasons.

It was the pilot reports, ship reports, debriefs and comments of CVA meteorologists that provided the observations which were synthesized into a more complete description of the actual weather and its causes. If a new paragraph were to be added to the notes on weather over North Vietnam during the Northeast Monsoon it might read:

"The multi-layered clouds, low ceilings and rain which prevail over and along the coast of North Vietnam are caused by at least two separate but interacting mechanisms: (1) frontal activity, which provides multiple cloud decks and precipitation; (2) mechanical or orographic lifting of



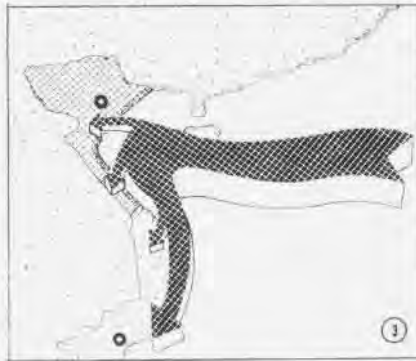
THESE DIAGRAMS illustrate the four stages of development and progress of what is a typical Gulf of Tonkin Cold Front. Time interval from the first to the last frame is 24-48 hours.



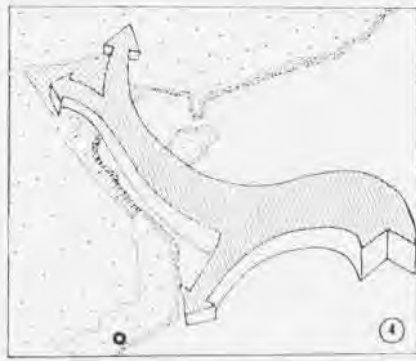
THE CONTINENTAL OUTBREAK



MODIFIED POLAR FLOW



MARITIME FLOW



TROPICAL CIRCULATION

DURING the Northeast Monsoon, November to April, there are four variations in wind flow: Continental Outbreak, modified Polar Flow, Maritime Flow and Tropical Circulation.

the air mass which causes the formation of the low stratus, fog and drizzle."

During the course of the study, variations were noted in the Northeast Monsoon, which suggested the desirability of reducing it to at least four phases. This approach was original for climatological studies and the limited number of papers on the subject never indicated, aside from the transition periods between the Northeast and Southwest Monsoons, that there were any distinctions within the monsoon regime. Of the four phases that were decided upon, two were found to be most prominent: the Continental Outbreak and the Modified Polar Flow.

In terms of weather, the other two phases, Maritime Flow and Tropical Circulation, were less significant. The Gulf of Tonkin Cold Front is associated with the Continental Outbreak, and was the only phase in which a brief respite was provided from the monotony of the low stratus condition and was

due to the initial air mass having an overland trajectory. It appears from the limited data that the relaxation from foul weather was temporary in nature, lasting as little as six to ten hours depending upon how quickly the flow developed an over-water trajectory.

The Modified Polar Flow seemed to be the prevalent circulation and occurred when the high pressure system over China was nearly stationary. The most significant aspect of this phase was the appearance of the weak frontal systems filtering southward into the Gulf of Tonkin and South China Sea, with the frequency clearly dependent upon the effects on the high pressure system by the middle latitude storms.

In all four phases, the low level circulation in the Gulf of Tonkin contained an easterly component which was reasonably correlated with the amount of low clouds found on the land mass. Northeast winds, in contrast to southeast winds, resulted in the greatest

amount and most persistent type of stratus conditions largely due to the fact that the flow and was associated with cold frontal activity. The associated high and middle frontal clouds prevent or limit burning off or otherwise dissipating the stratus.

Discovering and identifying the fronts and cataloging the variations of the 1965-1966 Northeast Monsoon with its cyclic nature were the high points but not the total results of the study conducted at the Yokosuka Weather Facility. Considerable research effort is still required to unlock many of the remaining mysteries of Southeast Asian weather that are alluded to in the extensive climatological surveys. Meteorological satellite read-out equipment has recently become available to some of the CVA's and Weather Facilities in WestPac and should be a major asset in filling in many of the blank spaces. Even with this sophistication, heavy reliance will still be placed on pilot reports and surface observations in future studies. Nothing yet has been designed to replace the human point of view.

Rescue Hoists to Change More Cable is Being Installed

A high priority program to enable Navy and Marine Corps helicopters to rescue personnel from heretofore inaccessible jungles of S.E. Asia is being implemented.

Hoist drums of the helicopter rescue system are being modified to accommodate at least 200 feet of cable. Present helicopter systems incorporate a hoist with 100 feet of cable terminating in the three-pronged rescue seat. Although the 100-foot cable was adequate for rescue of astronauts and aircraft pilots at sea and evacuation of personnel on land, it became apparent during early Southeast Asia operations that this length would not reach to the floor of tall jungle forests.

The program includes laboratory and flight testing for each modification to ensure acceptable service.

Modification kits have been delivered to some Fleet squadrons with all utility type helicopters in Vietnam scheduled to be equipped with the longer cable.



FINAL instructions, in the form of a humorous note from launch crew members, greeted astronauts as they prepared for flight.



THREE DAYS later, a happy pair of Naval Aviators, complete with appropriate caps, smile aboard the LPH USS Guam after recovery.

ELEVEN DOWN—ONE TO GO

As NASA moved rapidly toward completion of its *Gemini* series of 12 space flights, two Naval Aviators comprised the team that made number 11 what officials called the most successful effort yet. Commander Charles (Pete) Conrad, Jr., a veteran of the

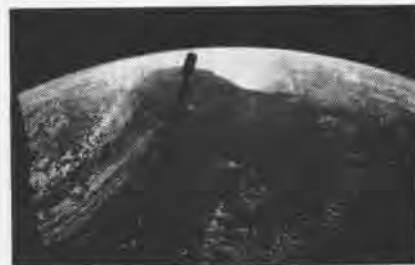
Gemini 5 shot, and Commander-selectee Richard F. Gordon, Jr., completed the mission that included a link-up with an *Agena* target vehicle before the first orbit was completed, extra-vehicular activity by Gordon and a record climb to more than 850 miles high.



COMMAND pilot Conrad is hoisted aboard a recovery helicopter after 71-hour flight.



SPECTACULAR view of earth was photographed as *Gemini 11* soared to 850 miles.



AGENA'S spiral antenna juts up in this photograph of earth from the spacecraft.



GORDON emerges from his cramped "home" for the three-day mission to enter raft.



SPACECRAFT is hoisted aboard Guam by LPH crewmen. Its occupants flew aboard ship.

SHE'S COME OF AGE AND GONE TO WAR



THE AIRCRAFT have changed since this picture of USS Franklin D. Roosevelt was taken in 1956, but the carrier is still much in action. Now she's operating off Vietnam.

By JO3 Andrew J. Shinnick

It was like a scene from a movie you've seen before: Flags waved, people lined the pier, a band played and wives wept as the big aircraft carrier's bow was pointed toward the ocean and another overseas deployment.

The action was vaguely familiar, even if the actors were not.

There should have been a familiarity to the departure from Mayport, Fla., of the USS *Franklin D. Roosevelt*. For CVA-42, deployments are nothing new; she's left home port for the Mediterranean many times.

But there was something different about the most recent replay of a well-known scene. This was to be no Med cruise. For the first time in 21 years of existence, *FDR* was going to war.

The scene, then, was different—and so would be the theatre. *FDR* was to become the third East Coast carrier to steam for the South China Sea off the little, war-torn nation of Vietnam.

APRIL 29, 1945—the war was nearly over, but it was still a big day for the “largest, strongest and fastest” carrier then built. That was the description a New York newspaper had for *FDR*, the day she was commissioned. Mrs. Franklin D. Roosevelt was there, and so was President Truman. Mrs. John H. Towers smashed the traditional champagne bottle over the new carrier's bow. “The Little Flower,” Mayor Fiorello La Guardia of New York, looked on.

That was just a little more than 21 years before the ship left Mayport to steam for the Pacific and her first tour with the Seventh Fleet. There had been no combat during those years, but they were busy ones, nonetheless.

A year after the commissioning ceremonies, *FDR* was credited by some with striking a blow for carrier aviation. Built in an era of propeller-driven aircraft, she proved CV's could keep up with the tempo of the jet age when Marine Lieutenant Colonel Marion Carl was launched in a specially-



PRESIDENT Harry S. Truman was the featured speaker when *FDR* was commissioned.



A CLIPPING from the *New York Daily News* tells the story of the ship's launching.



CREWMEN and guests are massed on ship's flight deck for commissioning ceremony.



UNTIL she steamed for her first WestPac cruise, *FDR* had deployed only to the Med. Here, the ship is anchored off Rio de Janeiro.



DIGNITARIES at *FDR*'s commissioning included President Truman, Mayor La Guardia, Adm. Leahy, SecNav Forrestal, Mrs. Roosevelt.

equipped Air Force *Shooting Star* from the bow catapult, circled the ship once and brought the aircraft back aboard.

Three months later, she made another contribution when a Sikorsky helicopter flying from her deck delivered mail, personnel and supplies to the submarine *USS Greenfish*. It was said to be the first time a helo was used this way.

By 1954, the kind of aircraft being flown off carriers called for change. *FDR* steamed for the Pacific—it was her first trip to the West Coast—and entered the Puget Sound Naval Shipyard for two years of extensive modification. Shipyard workers added a new an-

gled deck, streamlined the "island," attached a new hurricane bow and installed new steam catapults.

Technological advances helped keep *FDR* abreast of the times. During subsequent overhauls, workmen installed the Fresnel Lens optical landing system and Pilot Landing Aid Television (PLAT). The ship's catapults and arresting gear were also modernized.

Back in the Atlantic, *FDR* continued to take her crewmen on Med cruises—16 of them through 1965 for more than a decade actually on station. By May 1966, more than 150,000 arrested landings had been logged. She won the Admiral Flatley Award for accident preven-

tion three times, the only carrier to do so. She was involved in the 1961 Dominican Republic crisis, steaming with other ships for a seven-day, show-of-force demonstration.

A six-month yard period prepared *FDR* for the Seventh Fleet cruise. The departure scene was re-enacted, but this time it was different, and a release from the carrier after she arrived in WestPac tells why. It starts:

"This 21-year old attack carrier conducted the first combat operations in her history today when planes were launched from her decks against military targets in North Vietnam. . . ."



HER FLIGHT deck crowded with aircraft, *FDR* operates in the Gulf of Tonkin after deploying from Mayport, Fla., to the Seventh Fleet.



FDR CREWMEN "man the rail" in somewhat casual dress as the carrier rests in drydock during overhaul held before she deployed.

FLEET AIR WINGS ON PATROL



ARCTIC WATCH is maintained by Orion from VP-6 at Adak. Navy gave assist to ice observers and to research study of whales.



FINAL CLASS portrait marked end of Fleet Air Wing Eleven's radioman school, which now operates under FAETULant at Jax.

PACIFIC Fleet's *Blue Sharks* chased a "silent whale" and found out it wasn't quiet, after all.

VP-6 squadron members, who call themselves the "Blue Sharks of the Pacific," were partners in a scientific research project conducted by Dr. Theodore Walker, Scripps Institute of Oceanography. Dr. Walker is completing a study of the migratory habits of California Gray Whales and, as part of his study, accompanied the patrol squadron on missions in northern arctic regions. Home-based in Hawaii, VP-6 deployed in June to Adak, Alaska. During missions with VP-6, Dr. Walker claims to have made the first successful recording of the voice of the "silent whale."

Although primarily employed in ASW surveillance flights, VP-6 also participated in another scientific endeavor. The squadron flew two ice observers from Naval Station Kodiak to arctic points to classify the ice conditions. Observations on these flights were vital for planning of re-supply missions for various government installations and scientific research stations in the Arctic.

Fleet Air Wing Eleven's radio school, in operation since 1953, graduated its last class in August. The FAW-11 school, responsible for training some 700 radio oper-

ators for Fleet patrol squadrons and ships, was turned over to Fleet Airborne Electronics Training Unit, Detachment Two, for future training of operators. In the last class under FAW-11 management were ten patrol squadron crew members. Top man was Airman Apprentice S. Johnson, of VP-7.

VP-7 crew members won a six-mile sailing race during a week-long Sea Survival training course at Langley Air Force Base, Va. The patrol squadron crew, reportedly the first Navy crew to win the event at the air base school, was headed by Ltjgs. A. K. Jenkins and K. B. Hallock. Their team sailed the Chesapeake Bay course in a seven-man rubber raft. Students reported that three days of the five-day course were spent "in or on the



VICTORY smile is given by VP-7 crew after six-mile race at water survival school.

water." Included as part of the training program were instructions in the use of survival devices, helicopter rescue procedures and life raft safety.

VP-8's Commanding Officer, Commander Richard Hoffman, received the Navy Commendation Medal in ceremonies at Sangley Point, R.P. The award was presented for Commander Hoffman's design proposal for the installation of a jet engine in *SP-5 Marlin* seaplanes. A test of the "third engine" idea was conducted at NATC PATUXENT RIVER, Md., which is the home base for VP-8 between deployments.

A member of VP-8, Radioman Second Class Robert Elkins, re-enlisted for six years while in a squadron *P-3A Orion* in the Vietnam combat zone. The action earned Elkins a variable re-enlistment bonus of \$7,418.56. VP-8 claims to be the first patrol squadron utilizing general service radiomen as aircrewmembers in the combat zone.

Chief Sonar Technician Daniel Cushing's duties with Fleet Air Wing Eleven required that he fly with the operational squadrons to determine their effectiveness, so it was natural that he would desire status as an aircrewman. After finishing almost three years with



SONAR in VP-7 STC Cushing receives wings after earning AC designation in FAW-11.



UNITAS VII crews gather at VP-18 line prior to leaving for extended ASW exercise.



SAFETY officer and C.O. admire NavAirLant safety citation after VP-21's nine safe years.

the Wing Staff he was designated as an aircrewman in SP-2 *Neptune* aircraft. His new status came just before receipt of orders to new duty in a non-aviation billet.

* * *

The first P-3 *Orion* delivered to a nation other than the USA was presented to New Zealand in ceremonies on the West Coast. The *Orion* was delivered to a Royal New Zealand Air Force Detachment at Moffett Field, Calif., following formal hand-over ceremonies held at Lockheed's Burbank plant. Earlier, VP-31, Detachment Moffett, provided the ferry crew and training environment for the visiting detachment. Four more P-3 aircraft are in the delivery stage

and all are slated to be flown to New Zealand by year's end. Pilots and crewmen have been training in the United States for the past year.

The P-3B *Orion*, bearing RNZAF's red, white and blue insignia, was turned over to Wing Commander M. S. Gunton by C. W. Wagner, Lockheed-California president.

* * *

VP-18 bade farewell to two *Neptune* crews in the presence of reportedly "nostalgic wives and jealous squadron mates." The crews were off for three and a half months as members of the U. S. Navy team participating in *Unitas VII*, a joint ASW exercise with South American units. LCdr. Bill Smith was in charge of the VP-18

detachment and was assisted by LCdr. Clyde Jones.

* * *

There are nine gold stars on the citation received by VP-21 from Commander Naval Air Force, Atlantic Fleet. The stars represent nine consecutive years of accident-free operations by the squadron while logging more than 84,000 flight hours.

* * *

VP-4's line maintenance crew at Barber's Point, Hawaii, is boosting the use of electronic devices as both time and money savers. Before the 3-M system of maintenance management was installed, plane crew members ran or walked between the aircraft and the parts supply store under the time-honored "gopher" system (go for this, go for that, etc.). With the installation of new walkie-talkie communications systems, the crews now call from the parking aprons and can continue to work on their aircraft while supply workers are seeking out spare parts.

The maintenance department has found it a truly outstanding labor-saver and in addition they now save money on gopher-shoes.

* * *

VP-44 hosted 13 members of the Maritime Patrol Squadron 415 of the Royal Canadian Air Force in September. In October the host role was switched, with VP-44 visiting the Canadian squadron. The visits, in which Americans got a look at the Canadians' *Argus* ASW aircraft and Canadians toured a P-3A *Orion*, were part of a program designed to familiarize crews of NATO countries with the operation of various ASW weapons.



ASW forces in the South Pacific will be strengthened when New Zealand and Australia begin flying the P-3B. New Zealand purchased five, Australia plans to purchase ten.

SELECTED AIR RESERVE



AT COMMISSIONING ceremonies, Robert King High (left), Mayor of Miami, presents Naval Air Reserve Division 741's pennant to new unit's Commanding Officer, LCdr. Marc Leon.

New Division Commissioned

On August 27, Naval Air Reserve Division 741 was commissioned at the Naval Reserve Training Center, Miami, Fla.

Captain Carl D. Simonsen, Commanding Officer of NARTU JACKSONVILLE, officiated at the commissioning ceremonies.

The new division has a complement of 11 officers and 159 enlisted men, commanded by LCdr. Marc Leon. It is staffed by nine active duty enlisted men with AEC Thomas J. Gerhardt as chief petty officer in charge.

Robert King High, Mayor of Miami, welcomed the new division and presented the division pennant to the unit's Commanding Officer.

Southeast Asia Airlift

Members of Transport Squadrons 701, 702 and 703, home-based

at NAS DALLAS, Texas, completed their two weeks active duty this summer with over 240 flight hours logged in support of cargo airlifts to Vietnam.

These Reservists, from the tri-state area of Texas, Oklahoma and New Mexico, island-hopped across the Pacific from Hawaii, touched down in Da Nang with their cargo-laden C-118's and reloaded with stateside bound passengers and cargo for the return trip.

Since May 1965, when the airlift began, Reservists from Dallas have logged over 1,000 flight hours, including two and one-half million passenger-miles and more than one-half million cargo ton-miles in support of the mission.

Over 1,000 Naval Air Reservists from all over the country have volunteered for these missions and many have flown several round trips in support of the airlift.



NAVAL Air Reservists from Dallas off-load cargo at Da Nang Air Base in Vietnam.



GOVERNOR Grant Sawyer presents official proclamation to Captain J. M. Hestilow.

As of June 1, Air Reservists had made over 252 flights involving 12,833 flight hours, over 30 million passenger-miles and more than six million cargo ton-miles.

Anniversary News

Commemorating the 50th Anniversary of the Naval Air Reserve, Nevada Governor Grant Sawyer presented Captain Jack M. Hestilow with an official state proclamation honoring the Reservists.

Captain Hestilow is C.O. of NARTU ALAMEDA, where several hundred northern Nevada Reservists train.

Governor Sawyer told a television audience: "Nevada is proud to honor the Reserve Aviators who train so diligently to protect the freedoms of this country against aggression."

Oregon Governor Mark O. Hatfield took note of the 50th Anni-

versary when he presented a copy of his proclamation to Captain J. N. Longfield, Commanding Officer of NAS SEATTLE. The governors of Washington, Montana, Wyoming and Alaska have made similar presentations to the station during this anniversary year.

NAS SEATTLE is the "Home of the Weekend Warriors of the Pacific Northwest." More than 1,300 Reservists from throughout the Northwest are affiliated with the station's 16 squadrons and units.

NARMU-775

Members of Naval Air Reserve Maintenance Unit 775, home-based at NAS LOS ALAMITOS, Calif., spent their two weeks active duty for training at NAS SEATTLE.

In the picture, refueling one of the unit's aircraft, are AMAN Ken MacChesney and AM3 Jared Sloan.

Seven out of Eleven

NAS SEATTLE'S Summer Accelerated Program Drill Team marched off with seven awards in the parade in which it participated this year.

Thirty-six recruits, under the direction of BM1 E. A. Briggs and TD2 M. E. Powell, made up the precision marching unit. Lt. J. P. McAdam is the officer in charge of the summer program.

Highlight of the team's 11 exhibitions was its participation as the official representative of the U. S. Armed Forces in the Pacific National Exhibition at Vancouver, British Columbia, in August.

In the picture, displaying the awards, are (left to right) Lt. McAdam, AA's R. W. May, T. W. Sheehan and M. R. Fish.

First?

According to an NAS OLATHE, Kans., release, Ens. Michael L. Armintrout may have a first to his credit. He is thought to be the only midshipman to have drilled with a Naval Reserve Unit.

He won his bars as a Reserve Officer Candidate at OCS in Newport, R.I., concurrently attending college and drilling with Air Wing Staff 88 (L) at Olathe, first as an AA, then as a midshipman.

In the picture Ens. Armintrout receives his new ensign's cap from



CAPTAIN J. N. Longfield receives Oregon proclamation from Governor M. O. Hatfield.



NAS LosAl reservists refuel the 350-gallon wing tip tank of squadron's P-2E.



THREE members of NAS Seattle's Drill Team display awards the team won this summer.



ENS. Armintrout changes hats with an assist from Captains Osborne (r) and Forgy.

AWS-88 Commander, Captain D. V. Osborne, as Captain Earl Forgy takes his midshipman cap.

'Redex Fifty-66'

A two-day antisubmarine exercise, dubbed Operation *Redex Fifty-66* was held off the East Coast in August. Hundreds of Naval Air Reservists and reserve destroyer force sailors from seven states manned more than 30 aircraft and five destroyers during operations.

Their mission was to "Catch the *Carp*," a U. S. Naval Reserve submarine, USS *Carp*. Purpose of the exercise was to achieve maximum readiness qualifications for the participating personnel.

Involved in the exercise were aircraft and personnel from Naval Air Reserve Training activities at Washington, D. C.; Lakehurst, N. J.; Norfolk, Va.; South Weymouth, Mass.; Willow Grove, Pa.; and New York City. Headquarters for the exercise was NARTU WASHINGTON, NAF ANDREWS AFB.

There were no losers in this exercise. Even *Carp* personnel gained valuable experience as they sought to evade detection by the air and surface units.

As a parting salute to their friendly rivals, the crew of a *Nep-tune* dropped a waterproof can containing the Sunday papers and pictures of the submarine—taken during the exercise—to the USS *Carp*.

Coincidentally, it was 50 years ago when an aircraft of the first Naval Air Reserve Unit was ordered from Huntington Harbor, N. Y., birthplace of the Naval Air Reserve, to search for a German submarine which had been sighted in Long Island Sound.

Augmented Dental Facilities

A new addition to the station dispensary at Willow Grove gives that station one of the most modern dental facilities in the Navy in terms of equipment. The Willow Grove dental department was one of the first in the Navy to institute an extensive children's preventive dentistry program.

The new facilities provide for a full six-day week implementation of all dental programs. Commander E. C. Woodland, Dental Corps, USN, is the officer in charge.

AT SEA WITH THE CARRIERS



ANCHORED in Hong Kong harbor, *Intrepid* is pictured with other Seventh Fleet ships during a visit to the British Crown Colony.



RF-8 CRUSADER from Light Photographic Squadron 63's Det. Golf aboard *Oriskany* rolls in for a recon flight over South Vietnam.



AM3 J. F. BAUGH directs an incoming UH-46 Sea Knight helo for a landing aboard *Ranger*. The CVAs has returned from the Far East.

PACIFIC FLEET

ORISKANY (CVA-34)

Flights of aircraft from *Oriskany* continued to deplete North Vietnam's fuel supplies as they struck at Petroleum-Oil-Lubricant (POL) storage facilities. A-4 *Skyhawks* from VA's 163, 164 and 165 blasted a complex at Núi Tap Tinh, 15 miles from Haiphong, and struck at sites near Thanh Hoa.

Big O planes also attacked cargo barges, bridges and trucks. VA-152 *Skyriders* dropped two spans of a railroad bridge south of Thanh Hoa with 1,000-pound bombs. In another strike, VF-111 *Crusaders* destroyed a concrete highway bridge with 1,000-pounders.

When *Oriskany* pilots teamed up in *Skyhawks*, *Skyriders* and *Crusaders* to attack POL barges in the island area of Hon Gay, 20 miles east of Haiphong, they also discovered several camouflaged North Vietnamese PT boats. Final tally: Several barges and a PT boat destroyed, two more PT boats sunk and two damaged.

LCdr. Denis R. Weichman, VA-164, made *Oriskany's* 112,000th arrested landing in an A-4.

RANGER (CVA-61)

Ranger has returned to CONUS from her sixth WestPac cruise and her second combat tour off Vietnam. Winner of the FY 1966 Pacific Fleet Arleigh Burke Fleet Trophy, given annually to the ship or air-

craft squadron that achieves the greatest improvement in battle efficiency and readiness, CVA-61 spent 8½ months as a unit of the Seventh Fleet.

Pilots of embarked CVW-14 were launched on their first strikes over Vietnam January 15, and they flew their last missions August 6. They had delivered nearly 11,000 tons of ordnance.

"*Ranger* [personnel] planned, scheduled and executed the first strike . . . against the Haiphong POL storage facilities," a CVA-61 news release said. "The result of this June 29 mission was precisely controlled severe damage to the strategic oil depot without damage to the attacking aircraft, despite intensive ground fire encountered."

CVW-14 aircraft were also flown

on missions against the Phu Lang military complex, a two-square-mile area, where 40 percent of the oil, ammunition and material storage was destroyed. Other targets included military complexes at Than Hoa, Quang Soui and Nghia Dong, railroads, bridges, highways, trucks and barges.

Of the 218 days *Ranger* spent with the Seventh Fleet, 179 of them were at sea and of that total 136 were in the combat zone.

While their ship was steaming the nearly 99,000 miles covered during the cruise, CVA-61 crewmen completed more than 180 unrefs, 68 underway refuelings and 36 destroyer refuelings. The CVA's jet aircraft used 25 million gallons of JP-5, and her propeller-driven planes burned 1¼ million gallons of aviation gasoline.

CONSTELLATION (CVA-64)

As *Connie* steamed off Vietnam, a Seventh Fleet report typified the action her pilots were seeing:

Constellation's "Sooner Squad"—A-6A *Intruder* pilot LCdr. Ger-

ald Beisel and his bombardier-navigator, Lt. Jim Gross, both of Oklahoma—led a strike of VA-65 bombers against three fuel barges 20 miles east of Hanoi. One barge exploded and sank, the "Sooners" said, and the others were burning after the attack.

VA-153's LCdr. Dan O'Connell led several *Skyhawks* in a raid on a trans-shipment point. "I saw several secondary explosions," he reported. "The black smoke was billowing to above 2,000 feet." Other pilots reported it was visible for more than 20 miles.

Another group of *Skyhawks* from VA-153 zeroed in on three 150-foot cargo barges. Six direct hits on one of them sent a fireball and smoke 2,000 feet in the air. The others were left burning.

Teaming up with a *Skyhawk* from sister squadron VA-155, VA-153 pilots blasted a truck parking area, destroying two trucks and heavily damaging or destroying seven more.

A pair of VA-155 pilots sent bombs and rockets into three warehouses, and other fliers from the

same unit attacked and destroyed two cargo barges. They left two others burning.

Total "take" for one day of action by *Connie* pilots, the report said, included four barges sunk or destroyed, two trucks destroyed and seven damaged, five buildings damaged and a bridge and a flak site destroyed.

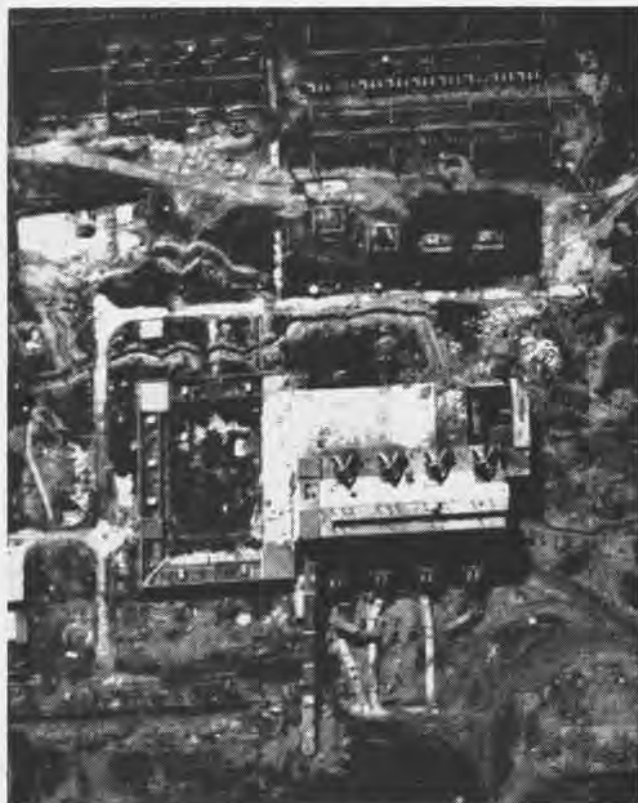
A secondary explosion indicated VA-155 pilots may also have destroyed an ammunition dump.

Rear Admiral David C. Richardson relieved Rear Admiral James R. Reedy as Commander of the Seventh Fleet Attack Carrier Striking Force and CTF 77 during a ceremony aboard CVA-64.

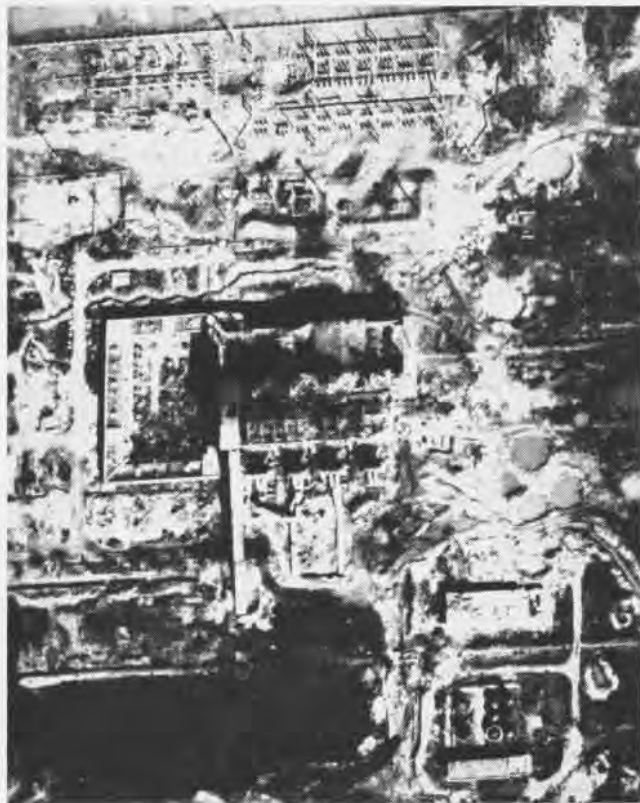
Lt. Roger A. Smith, VA-65, was reported to be the first bombardier-navigator to log more than 1,000 hours in the *Intruder* when he returned from a two-hour night combat mission.

F. D. ROOSEVELT (CVA-42)

Command of *FDR*, the third Atlantic Fleet carrier to become involved in the Vietnam conflict,



UONG BI thermal power plant is shown in reconnaissance photo at left just before an early-morning raid by *Constellation* aircraft.



Bombs dropped from the *Connie* planes nearly leveled the recently rebuilt plant. Photos were made by planes from RYAH-6.



"IT WILL only hurt a minute," Capt. J. K. Beling, *Forrestal's* C.O., tells Cdr. P. G. Oenbrick, senior dental officer. Occasion was the Dental Corps' 54th anniversary.

changed hands when Captain George C. Talley relieved Captain Charles L. Burbage as the CVA operated in the Gulf of Tonkin.

During the ceremony, Vice Admiral John J. Hyland, ComSeventh-Flt, presented the carrier with the Admiral James H. Flatley Memorial Award for Aviation Safety. *FDR* is the only carrier to win the award three times.

HORNET (CVS-12)

Hornet has returned to home port, Long Beach, after successfully recovering an unmanned *Apollo* space capsule near Wake Island.

IWO JIMA (LPH-2)

When *Iwo Jima* crewmen returned in their amphibious assault ship to the waters off the coast of South Vietnam, they wasted no time getting into the thick of things. They debarked the Marine battalion landing team that had accompanied them in the LPH for Operation *Deckhouse III*, latest in a series of amphibious assaults.

Later, *Iwo Jima* and the other two ships of the Seventh Fleet amphibious ready group—the amphibious transport dock USS *Vancouver* and the landing ship dock USS *Thomaston*—sent their Marine

units ashore 50 miles southeast of Saigon for Phase II of Operation *Deckhouse III*.

Troops of Battalion Landing Team I/26 swept ashore from *Vancouver* and *Thomaston*, while helicopters of Marine Medium Squadron 363 delivered troops several miles inland from *Iwo Jima*.

The amphibious group steamed into the objective area early in the morning and preparations began to move the Marines ashore. Other ships stood by to provide naval gunfire support; closer to the beach Navy *Swift* boats patrolled the area and aircraft from the Seventh Air Force and Marine armed *Huey* helicopters provided air support.

This is *Iwo Jima's* third deployment to Southeast Asia in three years. Commanded by Captain Nils W. Boe, the LPH is home-ported in San Diego.

YORKTOWN (CVS-10)

As part of the 18th annual reunion of the USS *Yorktown* Association, officers and enlisted men who served in the *Fighting Lady* during WW II were embarked for a day at sea in CVS-10 so they could view carrier operations and ASW exercises with the ship's air group, CVSG-55.

More than 1,500 dependents and

friends of *Yorktown* crewmen boarded the CVS for a Dependents' Day Cruise off California.

PRINCETON (LPH-5)

More than 1,200 officers and enlisted men serving in *Princeton* returned with their ship to home port, Long Beach, after a 6½-month deployment to WestPac.

As flagship for the Seventh Fleet amphibious ready group, *Princeton* spent most of her deployed time in the coastal waters of Vietnam. She participated in six major operations. Two battalion landing teams served in LPH-5 as the Marine force in readiness. Three Marine helicopter squadrons—HMM's 362, 363 and 364—were also embarked.

Starting with Operation *Jackstay* at the mouth of the Saigon River and concluding with Operation *Hastings* just south of the 17th Parallel, *Princeton* was in almost continuous action after she left Long Beach February 16. Besides serving as the operating base for the Marine landing force, *Princeton* acted as a medical evacuation ship during operations.

KITTY HAWK (CVA-63)

The Navy's newest cargo transport, the Grumman-built C-2A *Greyhound*, underwent extensive carrier suitability tests aboard *Kitty Hawk* as the guided missile CVA operated off California.

Two of the new COD aircraft were tested aboard CVA-63. One, piloted by Lt. George Meyers of NATC PATUXENT RIVER, Md., was operated under simulated load conditions. The other, flown by Commander Jack Winton, pilot, and Lt. John LaRusso, copilot, was equipped for actual operating conditions. It made the first carrier landing with 5,700 pounds of freight and eight passengers.

ATLANTIC FLEET

FORRESTAL (CVA-59)

Forrestal's Naval Tactical Data System (NTDS) was being installed while the ship was undergoing a major overhaul at the Nor-

folk Naval Shipyard (NANEWS, September 1966, p. 36).

CVA-59's multimillion dollar NTDS will free many *Forrestal* crewmen in the carrier's combat information center from the routine of tracking, plotting and other basic work. Instead of time-consuming "fixes" of surface contacts—ships, for instance—on radar, the system will calculate and relay positions to the bridge in seconds.

GUADALCANAL (LPH-7)

The flagship for the Atlantic Fleet's amphibious ready group, *Guadalcanal* held open house during a stay in San Juan, P.R.

AMERICA (CVA-66)

With *America* back from a 7½-month Mediterranean cruise, Captain Donald D. Engen relieved Captain Lawrence Heyworth as C.O. Captain Heyworth had skippered CVA-66 since she was commissioned January 23, 1965.

LEXINGTON (CVS-16)

Captain Jack C. Heishman relieved Captain Gordon A. Snyder as skipper of *Lexington* during a ceremony aboard the CVS while the ship was at NAS PENSACOLA.

Arrested landing number 162,000 was made aboard *Lex* by LCdr. Douglas E. Cross, VT-23 instructor, in a TF-9J *Cougar*. The landing carrier in the Navy soon followed that mark with the 163,000th arrestment; it was logged by Ltjg. Ron K. Gross, VAW-33, in an EA-1 *Skyraider*.

OKINAWA (LPH-3)

Staff and students from the Brazilian National War College boarded *Okinawa* for an indoctrination tour while the LPH was visiting Panama.

The amphibious assault ship was due to return to home port, Norfolk, after a 3½-month deployment to the Caribbean.

INDEPENDENCE (CVA-62)

Captain John P. Fox is the new C.O. in *Independence*. He relieved Captain John E. Kennedy during

a ceremony aboard CVA-62 while the carrier was at Fleet anchorage in Naples, Italy

Ltjg. Robert E. Morgan and MMI Walter E. Fishel have been named winners of the annual Thomas S. Gates Leadership Award as the outstanding junior officer and petty officer aboard the CVA.

Letters of commendation were presented the two by Captain Kennedy during the change-of-command ceremony. In turn, the outgoing C.O. received an award of his own before he relinquished command when he was given a plaque by his Air Department officers to mark the 13,703 landings made since he became skipper.

Independence's 89,000th arrested landing was logged by Lt. R. F. Lodge, VA-86, in an A-4E.

Three Turkish officers, honor graduates of that country's naval



TURKISH naval officers study radar facilities aboard *Independence* (above) and stand watch on the ship's navigation bridge. They were in CVA-62 for a six-week tour.

academy, spent six weeks aboard *Independence* for intensive training. All *tegmens*, (the equivalent, the ship reported, of a U. S. Navy ensign), they were Sedat Tekin, Tefik Uran and Server Calbas. They were in *Independence* to apply what they learned at the academy; their training also included lectures, tours and demonstrations in all the departments aboard.

Some prospective officers for the U. S. Navy were also aboard *Independence*. Thirty-five midshipmen were spending a seven-week summer cruise in the carrier before returning to their colleges.

SHANGRI LA (CVA-38)

Rain failed to dampen the enthusiasm of more than 2,000 visitors who toured *Shangri-La* during an open house held while the CVS was in Mayport, Fla.

Later, Rear Admiral D. H. Guinn, ComCarDiv Four, boarded *Shang* for a training cruise off the coast of Florida.

RANDOLPH (CVS-15)

Three Navy men from *Randolph* rescued two men and two girls after their sailboat capsized in the Firth of Forth, Scotland, about a mile from the ship's anchorage.

The sailors—BM3 James T. Markham, SN Arthur T. Jacobs and SA Robert G. Campbell—were standing on the carrier's fantail when they saw the boat overturn. They manned the duty lifeboat and pulled the Scots out of the water less than ten minutes later.

WASP (CVS-18)

After they returned from a routine mission off *Wasp*, LCdr. Edgar L. Devries and the crew of his VS-28 S-2 *Tracker* learned they had flown the squadron's 25,000th accident-free hour. The hours were logged over a period that started in September 1962. They were flown during cruises in the Atlantic, Mediterranean and Caribbean.

Other members of LCdr. Devries' crew included LCdr. John A. Dunaway, AOC Richard N. Talbot and AX3 George Smith. Commander Harry B. Lee is skipper of the Quonset Point-based squadron.



LAST-MINUTE check of component repaired under Short Stop program at NAS Miramar is made by Hydraulic Shop's Dave Privitt.



REPAIR of an air data computer is handled by AE2 Gene Gregonis. The component furnishes an F-4 pilot with valuable information.

NEED A COMPONENT? TRY 'SHORT STOP'

IT WAS just a few months ago that the Aircraft Maintenance Department (AMD) at NAS MIRAMAR, Calif., embarked on an ambitious plan to increase aircraft readiness throughout the Pacific Fleet.

Given the code name *Short Stop*, the venture was designed to put back into service critical aircraft components which had failed prematurely and which were being returned to designated overhaul points for repair.

Miramar's AMD started the program, and this reason was given by officials for its need:

"It has long been recognized that a large percentage of components being returned to overhaul points do not require a complete overhaul. Many items are rejected by the user because of his inability to effect a satisfactory repair. Often the loss of these components creates critical shortages, and, many times, they place an excessive burden on the overhaul points."

Under *Short Stop*, critical items in repairable condition are funneled into Miramar's AMD after they are screened either at NAS NORTH ISLAND, Calif., or Miramar. Some 50 critical items were selected for repair under this procedure, after it was determined that the AMD had the capability to handle them.

Most of the items received for

By *JOC R. J. Harkness*

Short Stop are being returned from Seventh Fleet units in the Western Pacific. Each is tagged and, if it is included in the AMD's capability listing, it ends up in the proper shop.

Unless there's something wrong with the item shop personnel are



PERSONNEL involved in Miramar's Project *Short Stop* discuss items to be repaired.



LOX CONVERTER is repaired in the Oxygen Repair Facility by Norman (L) and Claud.

unable to repair, they fix it and return it to the supply system in a Ready-for-Issue (RFI) condition. If the component can't be repaired by the shop, it continues on its way to an overhaul point.

Since April 11, when the program started, until this writing, more than 950 components were inducted into the *Short Stop* program. Almost 75 percent of them were placed in an RFI condition. The average turn-around time for an item has been eight days.

Officials say the program has two big benefits: First, the required time to return critical components to those who need them is greatly reduced; and second, the cost of repair has been cut.

Future plans for the program call for an increase in the range and number of components to the maximum the AMD work force can handle. As it now stands, all *Short Stop* components received are in excess of the average of 5,000 other items received each month for AMD repair.

Since *Short Stop* began, officials say, results have exceeded expectations. They credit the high recoverability rate and exacting documentation of component repair to procedures outlined under the Navy's new Standard Maintenance and Material Management (3-M) System for Aviation.

STEPS IN PRELIMINARY EVALUATIONS

THE NAVY Preliminary Evaluation (NPE), the first Navy flight evaluation of a new airplane, is one mission assigned NATC PATUXENT RIVER. Its main purpose is to evaluate a new airplane to discover discrepancies early, thus allowing for timely, and less expensive, corrections.

Late in 1965 a team of test pilots and engineers from the center visited the Douglas Aircraft Corporation, Los Angeles, to conduct the NPE of the TA-4F, a two-place trainer version of the A-4E *Skyhawk*. Thirty-six flights were flown for a total of 52.8 hours during the seven-day evaluation.

The NPE team investigated the airplane's inflight and ground

By Lt. J. J. Hernandez, USN

reaction of deficiencies which have been noted during previous phases. The majority of NPE's are conducted at the contractor's plant or flight facility by NATC and other NASC personnel on all aircraft purchased or considered for purchase by the Navy.

The final phase of NPE determines the adequacy of corrections made to the aircraft as a result of prior NPE's and the readiness of the aircraft for Board of Inspection and Survey Trials.

Planning for an NPE requires months of preparation. It includes analysis of contractor data, the scope of tests to be conducted and

simulated and evaluated by the pilots and engineers before a NATC interim report can be prepared for NASC. The interim report is a short summation of the results, submitted within 72 hours after completion of the NPE.

The detailed technical report follows one month later. It contains a complete evaluation of the service suitability of all the systems, including a complete cockpit evaluation, plus detailed quantitative and qualitative data on the airplane's performance, stability and control. The airplane's capabilities to accomplish its assigned mission are determined with the flight envelope as established by the contractor and approved by NASC. The technical report states whether or not the airplane is suitable for service. Those areas in which the airplane is deficient as well as those areas in which the airplane is most effective are clearly stated.

All these items are thoroughly documented in the final product of the NPE team, the technical report. On the basis of it, the Navy determines whether or not the airplane is to be purchased for Fleet use and, if so, in what numbers. The report helps the contractor determine how he can improve his product. And finally, though indirectly, it is used by the Fleet pilot in the form of flight information handbooks to assist him in flying safely and efficiently.

NPE thus provides valuable information regarding a new aircraft weapons system. It is a vital element of the process of finally introducing an airplane to the Fleet.

Navy Using Firebee Drones Targets Testing Pacific Gunners

Ryan-built *Firebee* target drones are now in use as simulated enemy aircraft in Fleet operational missile training programs being conducted in mid-Pacific by the Navy.

The high-performance, jet-powered targets are flown by Composite Squadron (VC) One, recently activated at Barber's Point, Hawaii.

More than 2,500 of the remote-controlled *Firebees* have been built.



NAVY PRELIMINARY EVALUATION TEAM FOR THE TA-4F AT DOUGLAS PLANT

handling characteristics as well as its maintenance and ground support requirements. Improved characteristics noted, over other planes in the A-4 series, were the effect of landing wing spoiler for crosswind landings, increased thrust, and nose wheel steering. The results were reported to the Naval Air Systems Command (NASC).

Evaluations are conducted in several phases of about two weeks each. The first phase of NPE authorized by NASC usually commences about 90 days after the first flight of the airplane. Subsequent phases are authorized at times appropriately related to aircraft and systems development and the cor-

rection of deficiencies which have been noted during previous phases.

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OZONE



OZONE IS IMPORTANT TO THE EARTH'S ATMOSPHERE BECAUSE OF ITS ABILITY TO ABSORB ULTRAVIOLET RADIATION IN THE STRATOSPHERE AND MESOSPHERE WHERE IT IS PRODUCED. THE ENERGY OBTAINED IN THIS FASHION HELPS TO DRIVE THE HIGH LEVEL UPPER AIR CIRCULATION.



IN THE LOWER AND MIDDLE STRATOSPHERE, WHERE THE OZONE CONCENTRATION IS AT A MAXIMUM, IT HAS AN EXTREMELY LONG LIFETIME AND THEREFORE IS A VERY GOOD INDICATOR OF THE ATMOSPHERIC MOTIONS AT THESE LEVELS.

ALTHOUGH A HIGH LEVEL GAS, OZONE IS CONTINUOUSLY TRANSPORTED DOWNWARD TO LOWER LEVELS. IT IS DESTROYED IN THE SURFACE LAYERS BY REACTION WITH OXIDIZABLE MATTERS.



THE EARTH'S ATMOSPHERE IS A MIXTURE OF GASES. THE TWO MAIN CONSTITUENTS ARE NITROGEN AND OXYGEN, WHICH ACCOUNT FOR NINETY-NINE PER CENT. OZONE IS LESS THAN ONE PER CENT.



HIGH LEVEL SAMPLINGS INDICATE THAT THE COMPOSITION OF THE ATMOSPHERE REMAINS VIRTUALLY UNCHANGED UP TO ABOUT 20 KM - 12.5 MILES. AT THIS HEIGHT, OZONE USUALLY BECOMES SUFFICIENTLY ABUNDANT, SO THAT IT INFLUENCES EMISSIONS AND ABSORPTIONS OF RADIATION.

A SECOND OZONE LAYER IS SOMETIMES FOUND AT ABOUT EIGHT TO NINE MILES. THIS LAYER IS ALSO RESPONSIBLE FOR HIGH LEVEL TEMPERATURE VARIATIONS ESPECIALLY IN THE POLAR STRATOSPHERE.



© Conner

instrument flight rule (IFR) weather conditions. The change, which became effective October 17, does not alter present weather limits for visual flight rule (VFR) helicopter flights.

The new rule also requires a pilot to have at least six hours of actual or simulated IFR flight time in the previous six months before he can act as pilot-in-command of an IFR flight. Three of the six hours must have been in a helicopter.

Pilots who now hold or have held a military instrument rating for helicopters are permitted to obtain the FAA helicopter instrument rating without showing further competency by applying before October 17, 1968. All others will be required to take both written and flight tests before receiving their helicopter instrument rating.



BEFORE departing for new duty in Spain, Rear Admiral Norman Gillette, receives Navy Commendation Medal for work as Aviation Plans officer for past two years from Vice Admiral Paul Ramsey, DCNO(Air).

Survival Kit is Improved SEEK-2 Being Used in Vietnam

Aircrewmembers in Southeast Asia are being issued an improved personal survival, escape and evasion kit. Components in the kit, called *Seek-2*, have been up-dated to meet the combat requirements of the area.

In addition to medical items, each kit contains fishing equipment, signaling devices, sewing supplies, fire starters, food rations, a compass, sunglasses, a wire saw, combination hack saw and knife

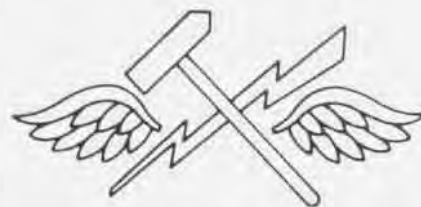
blade, an arrowhead, a mosquito headnet and mittens.

Each item is individually packed in a watertight container and held in place by adhesive.

Seek-2 has a comfortable-to-carry, flexible, outer container.

FAA Lays Down New Rule Helo Instrument Rating Needed

Under a new regulation announced by the Federal Aviation Agency, all helicopter pilots will need a Helicopter Instrument Rating in order to operate legally in



DESIGNATOR badge to be worn by enlisted men in the Navy's newest Group Nine (Aviation) rating, the Aviation Support Equipment Technician, will look like this. SecNav approved the design for PO's, strikers.

Editor's Corner

NEW SOUND, SOUR NOTES. During their recent trip to Europe, the suppliers of flight deck whistles for an ASW carrier bought up a batch of small metal whistles, similar in type to those used by London's traffic policemen. According to a news release from the carrier, the whistles contributed a shrill-toned new sound to the profusion of noises already heard on a carrier deck. The whistles were used as replacements for standard issue plastic whistles usually employed by the hangar deck crew.

Editor's P.S.: At news of the carrier's purchase, Grampaw Pettibone and some of his friends at the Aviation Safety Center were digging out old records to show why the Navy went to plastic whistles long ago. The metal ones, they say, get HOT, become a projectile when caught in air blasts, and can cause serious FOD (foreign object damage) in engines—not to mention chipped teeth.

Love on the Billboard. When Ens, Raymond Urban completed flight training at NAS CORPUS CHRISTI recently, the road leading to the station was decorated with a sign aimed right at him (see photo). His wife, Jodi, had approached a local outdoor advertising firm with the idea for the sign. The manager of the firm, Don Zimmerman, liked the idea so he donated the space.

SALUTE TO CHAPLAINS. A press release announcing the 191st anniversary of the Navy's Chaplain Corps (November 28) contained the following tribute to all chaplains serving in Vietnam:

"Our chaplains keep pushing, driving, sweating and praying. I see no calendars in their tents with days crossed off. I have yet to hear a single chaplain suggest that his tour is fruitless. Nor do I know a single chaplain who thinks himself a hero. He is simply too busy."

What's the Question? In a recent issue of the Roosevelt Roads newspaper, the Enquiring Reporter's question of the week was: "A total transitional concept based on systemized organizational mobility for optimal incremental projections in contingency with synchronized digital time phase has been suggested in order to effect integrated monitored flexibility. Will it work?"

Some of the answers given:
 "I'm not exactly an expert. But I've been there."
 "In the Navy? Never."
 "Yes, if I knew what it was. Would you mind repeating the question?"

ADDED SAFETY BULLETIN. In the manner reminiscent of automobile reports after those long holiday week-

ends, the Federal Aviation Agency recently noted in a news release that the three-day Labor Day toll for small planes was 82 accidents around the 50 states. This was fewer than the number reported in similar periods over the last four years, FAA reported. (The FAA attributed the decrease to an intensive pre-holiday campaign supported by aircraft owners, pilots, safety and other official organizations.)

4,000 Inverted Spins. The Naval School of Aviation Instructor Training at Pensacola recently marked the occasion of its 4,000th inverted spin demonstration. (The inverted spin is demonstrated to prospective instructors undergoing training.) The man who made the milestone demonstration, Lt. F. C. Brockhausen, had a personal milestone to celebrate—it was his 100th demo of the maneuver. Only 12 other instructor-pilots have recorded 100 spins since the school started counting them in 1959.

FROM A TO Z. MCAS El Toro, Calif., has a new American with an eye-popping, tongue-tying name. He is Mark Anthony Kirn-Slaboszewicz (see photo). The name has resulted in the young Marine being dubbed "Private Alphabet" by his drill sergeant. His close friends at camp call him "A to Z." And it is whispered around El Toro that his name rarely appears on the duty rosters because of spelling difficulties. The young Marine arrived in the U.S. after being born in Germany while his father served with the Polish occupation forces after WW II. He lived in Argentina and Washington, D. C., before gaining U.S. citizenship in 1965.



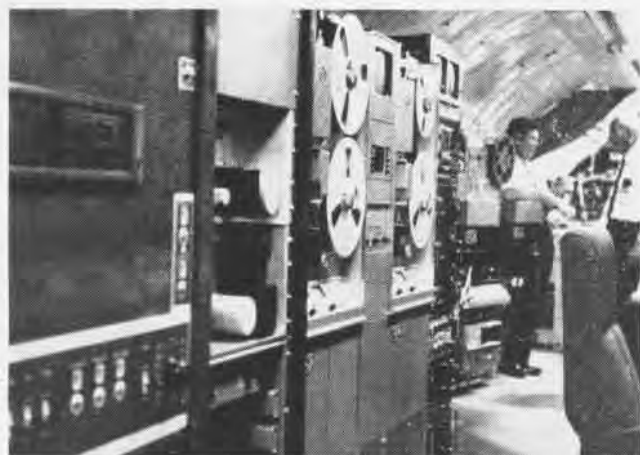
THERE IS SIMPLY NOTHING LIKE 'TELLING THE WORLD'



MARINE SHIRT IS NEARLY TOO NARROW FOR 'ALPHABET'



THIS MODIFIED Lockheed Super Constellation, bound for Vietnam, is an advanced version of two similar aircraft known as 'Blue Eagles.' They have been broadcasting TV and radio programs to personnel in South Vietnam since January (NANews, June, p. 24). Unusual antenna arrays are visible atop and below fuselage. The new airborne



TV and radio transmitter has a modern control room (above) in the forward portion of the fuselage. New design includes a soundproof studio for live broadcasts. The aircraft can broadcast simultaneously on two TV channels. 'Blue Eagles' are under the command of the Navy Oceanographic Air Survey Unit, Patuxent River, Maryland.

LETTERS

Spad Data Solicited

Sirs: To bring my research up-to-date for my forthcoming book on the *Skyraider*, I would like to have squadron histories, decals of squadron insignia and photographs showing squadron markings from all active *Skyraider* squadrons which are deployed with the Sixth and Seventh Fleets.

I would appreciate hearing from any past or present *Spad* pilots that can contribute interesting facts on this history-making airplane.

All personal material will be well taken care of and returned upon request.

B. R. JACKSON

17560 Blythe
Northridge, Calif. 90312

First A-7A's Delivered For Navy BIS Evaluation Tests

On September 13 at Dallas, Texas, Ling-Temco-Vought deliver-

ed the first two A-7A's to the Navy. Commander Charles W. Fritz flew one to NATC PATUXENT RIVER and Marine Major David W. Morrill lauded the other at the Naval Weapons Evaluation Facility, Albuquerque, N. M.

Six more *Corsair II*'s were delivered in the following weeks. All eight of these are now assigned to the Board of Inspection and Survey for evaluation.

Tests will be conducted for the next several months at Patuxent River, Albuquerque and the Naval Missile Center, Pt. Mugu, Calif.

Corpsmen Become Crewmen Will Wear Aircrewman Insignia

Navy hospital corpsmen flying with the 1st Marine Aircraft Wing in Vietnam have been designated Special Duty Aircrewmen and are authorized to wear the insignia.

To be eligible to wear the air-

crewman insignia, hospital corpsmen must: (1) volunteer for aircrew duties, (2) be physically and psychologically qualified according to current BUMED directive, (3) be ordered to flight status, and (4) take part in at least ten successful operational flights involving medical evacuation and search and rescue missions.

Since the start of the Vietnam conflict, corpsmen have volunteered and served as aircrewmen aboard MAW-1 helicopters. Many have more than 100 missions to their credit.

All corpsmen, who have served as aircrewmen with MAW-1 during the current hostilities and have since been transferred, may write their former squadrons for verification of eligibility.

International law and associated regulations forbid hospital corpsmen to wear the combat aircrewman insignia.



FIRST A-7A DELIVERED TO NAVY LEAVES FOR PATUXENT



E. F. CVETKO, LTV, GIVES A-7A FLIGHT LOGS TO PILOT



NAVY'S FLIGHT TEST DIVISION PATUXENT RIVER



Flight Test has been in existence since 1926 and Patuxent River, Md., has been its home since 1943 when the division became a unit of NATC. Flight Test evaluates performance, flying qualities and carrier suitability of experimental and new Naval aircraft. Captain William Carrier, Jr., is division director.



NAVAL AVIATION

NEWS



TOGETHER THEY SERVE

One hundred and ninety-one years ago, on November 10, 1775, the Continental Congress by resolution provided for two battalions of Marines and, 18 days later, on November 28, the Congress likewise established the principle of the Chaplaincy in the second article of Navy Regulations. Thus, in the same year, two dedicated Corps were initiated. Even today, as then, the bond of service unites them. In Vietnam, they continue together the unending struggle for freedom.

