

NAVAL AVIATION

NEWS



47th Year of Publication

APRIL 1966

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THE NEW ORDER

'On December 2, 1965, the first nuclear-powered task group engaged the enemy in South Vietnam. . . .
'The old order changeth, yielding place to new.'"—Rear Admiral Henry L. Miller, USN.

'To provide for the progressive modernization of the attack carrier force, we have included funds for the construction of a new nuclear-powered carrier in our FY 1967 request. To retain a force of 15 carriers, two more new carriers will have to be provided, and these have been tentatively scheduled for later years. These, also, will be nuclear-powered.'—The Honorable R. S. McNamara, Secretary of Defense.

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- A Veteran is Honored 10** *The historic N-9, a 1918 seaplane, is officially transferred, in the presence of other veterans, to the Naval Aviation Museum at Pensacola.*
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- The Marines are There 18** *Four pages of pictures and narrative which give brief glimpse of Marine Aviation in action in South Vietnam.*
- Food for Computers 24** *The second in a series on the Navy's 3-M system discusses the data collection system and how computers produce pointed, concise information.*

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■ COVERS

USS Enterprise (CVAN-65), now deployed in WestPac, is the "cover ship" of the month. The nuclear-powered carrier also appears above as a Skyhawk is moved up for launch. The back cover shot of an S-2D Tracker was taken by James F. Falk, JO1.



NAVAL AVIATION NEWS

New Atomic CVA Planned Initial Approval is Received

Another nuclear aircraft carrier is in the mill for the Navy as part of a \$1.7 billion conversion/construction program for fiscal 1967. The carrier design calls for two reactors instead of eight as in the *Enterprise* and possible additional maneuverability.

Although the cost of the ship was not disclosed, it is expected to be approximately \$400 million or the same as *Enterprise*.

The program, which involves 51 ships, plans to reemphasize ASW and AAW along with the addition of five nuclear attack submarines.

VT-21 Leaves to Learn Detachment Goes to MCAS Yuma

When poor weather conditions exist, most squadrons complain about it and cancel flight operations. VT-21, NAAS KINGSVILLE, is doing something about it.

Faced with some unusually bad weather and the subsequent delay in training for his students, Commander James Freeman, C. O. of VT-21, decided to send his charges to MCAS YUMA, Ariz. This site was chosen because of the ideal



SOLO STUDENTS ARRIVE AT YUMA



FLAGS FLEW at half mast across the nation upon the death February 20 of Fleet Admiral Chester W. Nimitz, Commander in Chief, Pacific Fleet, in WW II. He was buried with full military honors on the 24th at Golden Gate National Cemetery, Calif.

weather conditions and the instrumented target complexes.

In February, Detachment Alfa, with 13 F-9's, nine instructors, 17 students and 45 enlisted men, began a six-week deployment. Working on a tight schedule that included pre-dawn briefs and countless hours of night flying, the student aviators were able to complete the tactical phase of their flight training.

Detachment Alfa was headed by Major T. R. Maddock, USMC.

The Kula Gulf Joins MSTS Out of Mothballs to Vietnam

As part of the Vietnam buildup, the old WW II escort carrier, *Kula Gulf*, has been taken out of the Reserve Fleet and is hard at work with MSTS' other aircraft ferry ships—*Breton*, *Card*, *Cove* and *Croatan*.

The *Kula Gulf*, skippered by

Captain Cesaro D. Cappello, is 557 feet long and has a beam of 75 feet. She was one of the world's largest all-welded ships when she was launched at the Todd Pacific Shipyard, Tacoma, Wash., in 1944.

She has a speed of 19 knots and a draft of 31 feet. Her civil service crew numbers 144 (25 officers, 14 CPO's and 105 men).

The *Kula Gulf* first saw Navy duty when she joined the Pacific Fleet in 1945, just in time to bring men home from the Pacific Theater. She entered the Reserve Fleet at Boston in 1947 and remained there for four years. When the Korean War came along, she was the first warship to be reactivated from the New England Fleet.

Assigned to the Atlantic Fleet in 1951, she sailed the high seas for four years. Then she was put back into mothballs, this time in Philadelphia.

Now ten years later, she is back with the Navy—specifically with MSTS—and this time as an aircraft ferry steaming to and from Vietnam under the operational control of Commander, MSTS Pac.

Marines Test Bullpup B New Model Tested by VMA-225

In early February, VMA-225, based at MCAS CHERRY POINT, became the first operational Marine squadron to fire the new *Bullpup B* air-to-ground missile during live-firing exercises off the coast of North Carolina. The missile was launched from an A-4 *Skyhawk* by Lieutenant Colonel Paul G. McMahon, VMA-225's C. O.

Big brother of the A model, *Bullpup B* is a little over 13 feet long and is powered by a larger single stage rocket engine. Containing a

1,000-pound warhead, *Bullpup B* has four times the explosive power of the older model.

The nose section with its guidance equipment is interchangeable with *Bullpup A*. This equipment enables the pilot to guide and control the missile until impact with the target. He can correct deviations in the flight by use of a thumb-actuated-guidance switch, maneuvering the missile up, down, right or left. Flares on the tail of the missile help the pilot track it.

Bullpup B can operate at relatively safe altitudes and ranges beyond concentrations of enemy ground fire. The more powerful missile is designed for use by attack aircraft to destroy surface targets whose size, importance or tactical disposition require the highly accurate delivery of the 1,000-pound warhead.

In the photograph are (left to right) Second Lt. Richard B. Myers, VMA-225 ordnance officer, Lieutenant Colonel McMahon, and Martin Company's technical representative Mike Wieczorzak.



BULLPUP B READY FOR FIRING RUN

USS Boxer Retrieves Capsule First Recovery for an Amphibian

When *Saturn 1B*, the first in the *Apollo* program, roared off its pad on February 26, its destination was a spot near Ascension Island in the southeast Atlantic. Waiting there was the *Boxer* (LPH-4), in company with seven other ships.

Boxer, along with *Beale* (DDE-471), *Ingraham* (DD-694), *Turner*



REAR ADMIRAL Magruder H. Tuttle, Commander, Fleet Air Quonset (center) is flanked by Crew 53 of HS-9 (left) and Crew 5 of VS-34 (right), winners of the Dipper and Bloodhound awards respectively. The Dipper Award is given to the best helicopter antisubmarine warfare crew of the 72 crews competing. The Bloodhound Award goes to the best of the 90 antisubmarine crews flying S-2 Trackers. Both awards are based upon simulated exercises conducted from NAS Quonset. In the photograph above, left to right, HS-9 members are LCdr. Richard B. Baumstark, pilot, Richard C. Gray, AX2, and Lt. Van D. Base, copilot. VS-34 crew members are John E. Taylor, PR2, LCdr. Peter A. Bernardin, pilot, Ltjg. Eugene P. Nicholson, copilot, Eddy W. Cory, AX2.

(DDR-834), *Waller* (DD-466), *Kaskaskia* (AO-27), *Salinan* (ATF-161), and *Fidelity* (MSO-443), comprised the recovery force that retrieved the capsule almost three hours after its launch.

The *Boxer* was the first amphibious ship to take part in a spacecraft recovery.

Test Pilots Graduated Fifteen Complete 8-Month Study

February 11 marked the graduation of 15 pilots from the Naval Test Pilots' School at NATC PATUXENT RIVER, Md. The ceremonies marked the end of eight strenuous months of highly technical schooling for Class 42.

Lt. Edward W. Clepton, Jr., received the Navy League's "Outstanding Student Plaque" which honors the top student of each class for his outstanding ability, attitude and motivation during the course. It was presented to him by Mr. Robert E. King, Jr., a member of the Patuxent Navy League.

The speaker for the evening was Rear Admiral Frederic A. Bard-

shar of the Joint Chiefs of Staff, Department of Defense. Captain R. W. Huxford, Chief of Staff, Naval Air Test Center, presented the diplomas to the graduates.

The school, one of two of its kind in this country and one of five in the world, provides a rigorous curriculum consisting of classroom study and practical engineering flight tests in advanced rotary and fixed wing aircraft.

The school, since its establishment in 1948, has graduated such well known airmen as John Glenn, Alan Shepard, Jr., M. Scott Carpenter, Walter Schirra, John Young.



LT. CLEPTON GETS SPECIAL HONOR



GRAMPAW PETTIBONE

Ad Libitum

After concluding an RO2N at a West Coast air station, an instructor and his student prepared for the return trip to their home base in Texas. They conducted a thorough briefing, preflighted their TF-9J, and became airborne at 2025.

The first leg of the return trip was filed IFR to El Paso International Airport with assigned flight level 370. Passing FL 250 in the climb, the high pressure pump warning light came on but was eliminated by reducing power from 100.5 to 100 per cent RPM. The remainder of the climb was made without incident. Level-off was accomplished to indicate Mach .85 with 5,500 pounds of fuel left.

Between Gila Bend and San Simon, a check in the cockpit (which was verified by Albuquerque Center) showed a ground speed of 600 knots. At this time, the instructor determined he was 1,300 pounds ahead of the fuel plan for that position. Over San Simon a request was made to Albuquerque Center to verify the existence of a 150-knot jet stream. The center reported that several west-bound commercial carriers had reported the existence of such winds. With this good news, the instructor tried unsuccessfully to contact Biggs AFB Metro for his home field weather, but Albuquerque Center came through and gave the requested weather as clear and 10. Required fuel was computed from El Paso to home and it was determined that a minimum of 2,400 pounds over El Paso would be adequate for the extended flight with 500 pounds remaining upon arrival.

The instructor directed the student pilot to initiate a request for change of flight plan estimating one hour en route from El Paso to home base, one and one half hours fuel on board with no alternate required. They were cleared as requested and the instructor conduct-



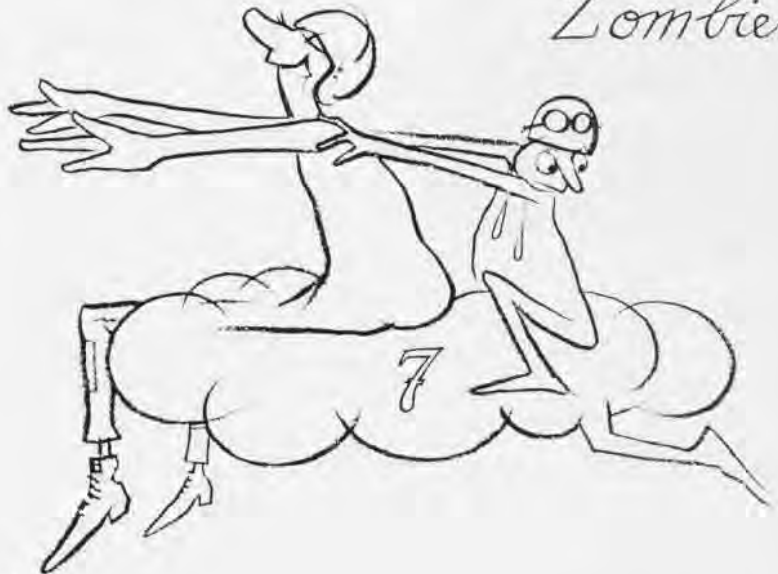
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ed a detailed brief on procedures for idle penetration and low state ground controlled approach.

The flight passed El Paso with 2,400 pounds of fuel, ground speed 600 knots and indicating Mach .83. At Fort Stockton a request for a radar vector direct to home base was initiated and approved by Fort Worth. One hundred and fifty miles out from home base, the two-

some requested an en route descent (fuel state at this time was 1,000 pounds) which Houston Center approved and advised that destination weather was clear and ten miles in ground fog. The idle descent was commenced and while passing FL 240, they cancelled their IFR flight plan.

At approximately 50 miles out, at FL 200 with 600 pounds of fuel remaining, the tower advised this inbound that the field was IFR with 1/16th mile visibility in ground fog. The instructor asked for the tops of the fog bank and immediately declared an emergency. In turn, he requested a straight in to runway 13. He was advised that the duty was 35 and that no arresting gear was rigged on 13. After assuring the tower the arresting gear was not necessary, he contacted approach control and requested an emergency low fuel state GCA. Approach control advised that only ASR was available as the PAR was aligned with runway 35. The instructor *in extremis* accepted



Zombies!

©Lorn

the ASR and advised that he would delay lowering the gear. At six miles with 400 pounds of fuel and at 2,000 feet he was advised that his altitude should be 1,100 feet. The runway was in sight at this time; he continued the descent at 150 knots and lowered the gear and flaps. Entry into the fog occurred at 700 feet and they lost sight of the field.

One mile out at 300 feet vice 400 as advised by GCA, power was added to level off, but the aircraft continued to descend and contacted the ground in a slightly right-wing-down, nose-high attitude. Shortly after contact with the ground, the aircraft skidded and then commenced an easy slew to the right. The plane rolled, shedding the wings, left main mount and tail assembly before coming to rest in an upright position. Both occupants exited uninjured.



Grampaw Pettibone says:

@ * & ! This is the proverbial straw that broke the camel's back.

Your old dad's been waitin' for this kind a stunt. There ain't no excuse nor enough room on this page to expend my wrath on it. I really don't see too much need to insult readers' intelligence by listing all the violations that this pair of throttle jockeys committed. I doubt that these two could convince anyone just what they were trying to prove but they did prove one thing: *Poor judgment will buy you nothin' but trouble.* These lads were downright lucky to walk away from this one. Maybe after this they'll remember, "Know thyself, for he is a fool of fools who deceives himself."

Jumping Jackrabbits

After waiting four days for the weather to clear sufficiently to meet "test hop conditions," an A-4 pilot conducted a normal pre-flight and started his aircraft. Noting a malfunction in the fire warning circuit, he shut down and had a technician investigate the discrepancy. After repair was complete, the pilot started the aircraft, proceeded through a normal engine run-up, taxied out and took off.

Throughout the first part of the flight, all test checks were routinely performed and revealed only one discrepancy concerning power and temperature on manual fuel con-



trol. After completing the landing gear check (altitude 6,000 feet), the pilot added power and pulled up the gear to return to base.

At about 94%, the pilot noted a "violent vibration" in the aircraft and heard a loud "rapping and grinding" noise which appeared to come from behind. He re-set the power at 85-87% and called approach control to inform them of his "emergency." The air station tower answered his call and provided the GCA frequency to facilitate an immediate vector to the field. GCA located the A-4 about 20 miles from the field and gave him a steer to the base. The pilot noted that the vibration and noise continued spasmodically with the reduced power setting.

At approximately 12 miles out, the distressed driver executed a 360 to lose altitude. He continued communication with GCA, electing to make a high straight in approach vice a normal GCA.

The pilot had difficulty sighting the field but finally picked it up at about two miles in his one o'clock position. At this time, altitude was 2,000 feet and airspeed 150 knots. Intent on getting down ASAP, he elected to land on the nearest available runway (opposite the duty with a 10K tail wind) and engage the Mostest. The GCA controller informed the pilot that the Mostest was rigged but that he was to land long with hook up so as to miss the E-14 gear at his approach end.

Coming over the approach end, he realized he was high and fast, pushed the nose over steeply, and flared before touching down about 2,000 feet down the runway. As he touched down, the pilot brought the throttle back to idle, slapped the hook handle down, only to have it spring back up; and again

slapped it down to stay. The A-4 bounced and missed the Mostest. The pilot felt sure that he would be able to take the E-14 at the far end and transmitted this to his GCA controller. (The E-14 was not rigged.)

As the plane continued down the runway, the pilot applied gentle braking pressure, still assuming the E-14 gear was rigged for him. Passing the gear and onto the overrun, thoughts of taking it around and ejection were contemplated but overruled. He decided to hold on and ride it out.

The plane continued past 622 feet of overrun, skidded over an embankment, and penetrated two chain link fences before coming to rest. The pilot, slightly injured, was helped from the cockpit by the helo crewmen and taken to the dispensary. The engine continued to run at idle for 30 minutes despite attempts to shut it down.



Grampaw Pettibone says:

Jumpin' Jehosaphat! How unglorious an end can an A-4 come to?

There's no doubt this lad received a shot of adrenalin right under the shark chaser, but he let panic override sound reasoning and good judgment. "Violent vibrations, rapping and grinding" ain't normal, but there wasn't a gauge on the instrument panel that diagnosed engine troubles. Heading for the barn under these circumstances is the right decision, but landing downwind from a high and fast approach ain't!

Why this lad committed himself so early is beyond me. The weather wasn't CAVU, but had he maintained his highest VFR altitude under the 4,500-foot overcast and executed a precautionary approach, Old Gramps feels certain this youngster could have fastened that flappin' canvas fuse panel cover back up in the nose wheel well after he returned to the line.



ENSIGN NICHOLAS M. CARPENTER SPOTS A PAIR OF GRUMMAN A-6A INTRUDERS FLYING OVER NAS OCEANA

A MULTI-MILLION DOLLAR INVESTMENT

IN JANUARY American taxpayers invested millions in a young, unknown resident of Virginia Beach, Va.

He is Ensign Nicholas M. Carpenter, a recent graduate of advanced jet training at NAS OCEANA.

What, specifically, was the investment? Simple. In January, Carpenter became fully qualified to fly the A-6A *Intruder*, the Navy's multi-million dollar, all-weather attack aircraft. This sophisticated jet figures prominently in the offensive striking power

Text by Robert E. Wood, JOC

Photos by James R. Hysong, PHC

generated today by globe-roaming Navy aircraft carriers. Recently, the Norfolk-based USS *Independence* returned home with a dozen *Intruders* aboard, each boasting impressive combat records in Vietnam.

Obviously then, turning over such critical and costly equipment to all the Carpenters in the Navy is no ordinary matter.

But taxpayers needn't grow faint-hearted over their financial

venture. When Ens. Carpenter completed his training he was as fit to manage the expensive responsibility facing him as humanly possible.

The Navy has seen to that. After earning his Navy wings last May at Chase Field, Texas, Carpenter was ordered to VA-35, a newly-formed A-6A squadron at Oceana. Before he got close to an operational *Intruder* however, he spent six formidable months with VA-42, an Oceana squadron which specializes in readying young flyers for their important futures.

Although VA-42 isn't on guard to protect taxpayers' investments, its daily routines are aimed at objectives which do just that. When a fledgling completes his six months with VA-42, he is a safe, efficient flyer. He has, moreover, reached a point where he becomes an asset to the Navy much sooner than his forerunners did a decade ago.

Before 1957, new flyers were normally ordered into operating units directly from flight training. There, they were polished into qualified pilots while learning to fly their unit's assigned aircraft. With the arrival of the newer, more complex airborne weapons systems, the individual training of pilots and Naval Flight Officers placed an ever-increasing burden on each operational squadron. As a result, squadrons experienced disturbing peaks and valleys in their readiness posture.

Nine years ago, the Combat Readiness Air Wing concept (CRAW) was born. The idea of a transitional type training, still under Fleet cognizance, quickly uncovered many advantages over earlier, outdated practices. But it was also born out of necessity. The technical pace at which jet aviation grew during those years was rapid. The Navy recognized the need for a lengthy, more formalized training system that would meet the demands of a jet-nuclear age. Thus, the *Green Pawns* of VA-42 and their Fleet counterparts opened for business.

Today, air wings have been cut in number to correspond with the operating aircraft carriers of both the Atlantic and Pacific Fleets. Flying squadrons find it easier to maintain a constant and high degree of preparedness. Add a safer, more reliable pilot—who reached his goals quicker by comparison—and it is clear that CRAW training has helped fashion an era of Naval Aviation, emphasizing skill, savings in time and wiser use of tax dollars.

How does the CRAW concept work with the A-6A *Intruder* at Oceana?

When Ens. Carpenter reported to Oceana last spring, the casual observer might have been overwhelmed at what lay ahead for this



READY FOR A NEW DAY'S WORK



LOOKS AT NORTH VIETNAM MAP



LECTURE ON COCKPIT MOCKUP



OPERATING A TRAINING DEVICE

personable, five-year Navyman from Cincinnati, Ohio.

The range of subject matter covered by VA-42 is not uncommon, but the intensity of its application is demanding, sensitive and complicated.

Crammed into his six-month instructions, Carpenter and six others in his group sat through more than 370 hours of ground training. Classroom lectures covered an eye-popping variety of A-6A details, including its jet engines, hydraulic systems, electronics equipment, electrical systems, air conditioning, ejection seat apparatus, emergency procedures, local familiarization, etc.

Flying the *Intruder* itself starts early. More than 60 airborne hours—divided into some 36 flights—are scheduled for the student. Initial flights, of course, are in company with instructor pilots. Here, the *Intruder* shows an individuality that bobs to the surface frequently. There are no dual controls in her cockpit, and, in spite of an instructor alongside, the trainee actually flies the A-6A independently from the start.

There were a number of key stages for Carpenter during the flying phases of *Intruder* training. The first came at flight number four, the "confidence hop." As its name implies, the "confidence hop" builds self-reliance, while cutting direct ties between student and instructor pilot for remaining flights.

The natural climax to six months with VA-42 is the "graduation hop." This elaborately planned trip is calculated in every possible way to approach combat conditions. Carpenter flew his "graduation hop" many miles out over the Atlantic, turned, and at extreme low level, flew in over South Carolina, Georgia and to an area in Florida. After reaching his destination, Carpenter dropped his "payload" skillfully on target. He wasted little time beating a path home to Oceana.

Up to the "graduation hop," Carpenter flew a dozen visual weapons hops, many weapon system and familiarization hops as well as instrument hops. Additionally, he flew a pair of air-to-air refuel-



PLOTTING FLIGHT IN READY ROOM

ing flights, and a "cross country" navigational flight.

Not all of Carpenter's A-6A training time was spent at Oceana. In Yuma, Ariz., two weeks with a Marine flying detachment sharpened his visual weapons flying. The Arizona location—with its excellent target complexes, coupled with perfect, visual-type weather—is ideally suited for such purposes. This philosophy, in reality, supplements the *Intruder's* premier endowment of an all-weather attack capability.

Intruder crews operate an aircraft tailor-made to deliver "the goods" in darkness, snow, rain, fog and sleet, thanks largely to the sensitive radar and detection equipment she carries. As one seasoned *Intruder* flyer put it, "The A-6A can do everything but scratch the pilot's back."

Other aircraft in the Navy's inventory can fly in many kinds of weather, but hitting targets in extreme conditions is a domain held almost exclusively by the *Intruder*. Nevertheless, Carpenter was required to hit targets relying on his own eyesight as well. Hence, the intensive training in sunny, dry Arizona.

Carpenter also spent periods at the Naval Air Stations in Norfolk, Va., and Brunswick, Maine. In Norfolk, he absorbed an accelerated eight-day course at the external delivery school, which is primarily concerned with nuclear weapons and associated tactics. He joined 24 others in Maine to take part in a survival, escape and evasion school. Ten days in the remote, northern woods, surrounded by the "enemy" was in Carpenter's words, "a grim experience,

but one that some day may prove valuable."

If the *Intruder* program is unique, so is Carpenter. During his preflight and basic flight training days, he logged good grades



GETS HIS VA-35 SQUADRON HAT

and made known a preference for a future in attack aircraft operations. But at the time of his commissioning, he entertained little hope for assignment to A-6A's, reportedly the ambition of many good pilots. Since chance plays little part in such serious deliberations, it was inevitable that he be



PREFLIGHT CHECK OF INTRUDER

picked. For the Navy, so much the better.

Carpenter also is the first NavCad assigned to *Intruders*. NavCads, or Naval Aviation Cadets, are civilians and former enlisted men like Carpenter who, without college degrees, reach commissioned status via this aviation program.

The Carpenters are special commodities to the Navy and to the

country. The cost of training represents a staggering sum of money—more so for the *Intruder* pilot. As a result, perfecting flyers to patrol both peaceful and threatening skies can truly be thought of as a once-in-a-lifetime investment.

But the Navy has confidence in the system to which Carpenter and VA-42 belong. Many similar training units are assigned the task of supplying a steady flow of qualified personnel into the Navy's aviation field. Over-all direction of this vast network within the Atlantic Fleet is the responsibility of Vice Admiral C. T. Booth, Commander of the Atlantic Fleet Air Force, with his headquarters at Naval Air Station Norfolk. The Admiral's air arm is the parent command of all East Coast flying activities and those aircraft carriers that operate in the Atlantic.

As such, it also is a prime factor in the A-6A program, its training policies and logistical support.

Words alone can't describe the vitality and magnitude of the A-6A program, or the men who motivate it. It's no wonder then, that *Intruder* pilots and their navigator-bombardier colleagues regard themselves as perhaps a fraction taller than other jet-type personnel. They claim it takes a good man to get to VA-42, then satisfy its mandate, and finally operate successfully as a qualified *Intruderman*.

What dividends can Carpenter expect to pay his investors, those who put millions on the line? Money and gilded bonds? Hardly. Instead, his backers prefer the contribution he can make to help America's Navy accept the challenges of an anxious world.

Can there possibly be a blue-chip venture of greater value?



JUST BEFORE HIS A-6A FLIGHT

CH-53A TESTED ABOARD LAKE CHAMPLAIN

THE FIRST compatibility evaluation (carrier flight deck landing and hangar deck handling tests) of the new CH-53A twin-turbine heavy assault helicopter has been made aboard USS *Lake Champlain* (CVS-39).

A CH-53A was flown from the Sikorsky Aircraft plant in Stratford, Conn., to NAS QUONSET POINT, R. I., and from there to the carrier. *Champ* was moored at Quonset.

Initial designs for the CH-53A called for a helicopter that would be compatible with present amphibious assault ships (LPH's) assigned to the Fleet. Although dimensions vary slightly, the typical LPH aircraft elevator was estimated at 44 by 48 feet with a weight load capacity of 35,000 pounds. The evaluation aboard *Champ* was intended, in part, to check the helo's compatibility with LPH capacity and dimensions.

The CH-53A was piloted by Lt. D. F. Mayers, NATC PATUXENT RIVER, Md.; its copilot was Marine Lieutenant Colonel J. L. Sadowski, BuWeps project officer. Flight crewmen included MSgt. C. A. Lamarr, MSgt. J. A. Reid, and L. C. Ginchereau, ADJ1.

Observers of the landing on the after portion of *Champ's* flight deck included Rear Admiral M. H. Tuttle, ComFAir Quonset; Rear Admiral G. C. Bullard, ComCarDiv 18; and BuWeps and Sikorsky representatives.

Designed for a total over-all height of less than 17 feet, the CH-53A's cabin dimensions are 30 by 7.5 by 6.5 feet. Span of the six front blades is 72 feet, and the four rear blades mounted on a semi-rigid tail rotor have a diameter of 16 feet. It weighs approximately 21,735 pounds empty, has a mission gross weight of 33,484 pounds, and is designed to deliver an 8,000-pound payload 100 nautical miles at an airspeed of 150 knots.

The CH-53A is designed to maintain level flight with only one of its twin General Electric T-64 turbine engines, even during heavy turbulence. It can be easily converted for either cargo or troops.



CH-53A HELICOPTER undergoes compatibility evaluation aboard USS *Lake Champlain* at NAS Quonset Point. The helo is a twin-turbine assault aircraft for cargo or troops.

Included in the helo's automatic systems is an auto blade and tail pylon folding system; the three blades on each side of the main rotor and tail pylon can be folded

in three minutes and unfolded in a maximum of 80 seconds.

Final acceptance trials are scheduled to begin May 9 at the Naval Air Test Center, Patuxent River.



THE N-9 awaits ceremony at Naval Air Engineering Center, Philadelphia. Designed in 1915 as a trainer type seaplane, it is a two-seat aircraft with one float and dual controls. It has a wing span of 53 feet. It was originally equipped with a Curtiss OXX 100-hp engine.

HISTORIC N-9 TRANSFERRED TO MUSEUM

IN A SPECIAL transfer-of-custody ceremony February 15, 1966, at the Naval Air Engineering Center (NAEC), the N-9, an old Navy trainer, a seaplane of 1918 vintage, was transferred to the Naval Aviation Museum in Pensacola to join famous aircraft of the past.

Rear Admiral William I. Martin, ACNO (Air), and Rear Admiral Robert H. Speck, Commandant 4ND, attended the ceremony.

Also participating were Rear Admiral D. S. Fahrney, USN (Ret.); Rear Admiral Joseph N. Murphy, USN (Ret.); Captain R. S. Barnaby, USN (Ret.); Commander Anthony Feher, USN (Ret.), Naval Aviator No. 95, all of whom were pioneers in Naval Aviation progress and flew the N-9. Rear Admiral Fahrney was also a pioneer in guided missiles and Captain Barnaby is a noted authority on gliders.

Others in the ceremony were Captain A. R. Wooldridge, Director of the Naval Air Engineering Laboratory (Ship Installations); Captain J. H. McCurtain, USN (Ret.), OinC of the Naval Aviation Museum at Pensacola; Mr. S. Paul Johnston, Director, National Air and Space Museum, Smithsonian Institution; Mr. Lee Pearson, BuWEPS Historian; Commander E. F. Shine, Jr., Industrial Officer, NAEL (SI); and Mr. R. Schatschneider, Industrial Superinten-

dent, NAEL (SI). Another guest was Mr. John Kean, retired Technical Director of the Aeronautical Structures Laboratory.

In 1930, the Aviation Mechanics' School at Great Lakes, Ill., presented the N-9, now being transferred, to the Museum of Science and Industry in Chicago. In 1952, it was returned to Navy custody pending the readiness of the National Air Museum. Subsequently, its restoration was undertaken by the NAEC.

Restoration of the historic plane was completed at NAEL (SI) by skilled craftsmen. The center, now under the command of Captain

A. H. Clancy, Jr., pioneered in Naval Aviation from its beginnings in 1917, when, as the Naval Aircraft Factory, it manufactured aircraft contemporary with the N-9.

The task of reconstruction, begun at the center in December 1963, was not simple. Major items, such as the floats, lower outer wing panels, fuselage turtleback and all engine cowling, had to be fabricated for the model.

The restored aircraft is a late N-9 version in which an Hispano-Suiza engine of 150 horsepower was substituted for the Curtiss oxx 100-hp engine. The maximum airspeed was upped to 80 miles per hour. The N-9 had a fuel capacity of 28 gallons and the total weight, fully loaded with a two-man crew, was 2,750 pounds. In the restored condition, portions of the wing areas and fuselage are left uncovered to show the internal construction of the plane.

The N-9 was the Navy's first satisfactory training plane in that it was relatively stable and easy to fly. About 500 N-9's were purchased, some from Curtiss and many more from Curtiss' subsidiary, the Burgess Aircraft Company. Roughly 40% of the WW I trainers were N-9's. Since the N-9 was the first trainer put in production it was undoubtedly used as the major training vehicle for the more than 2,000 officers that earned Navy



NAVAL AVIATOR No. 95, Cdr. Anthony Feher (Ret.) stands beside N-9 he once flew.

wings during the war. In use for many years thereafter, the N-9 was finally withdrawn from the inventory of naval aircraft in FY 1928.

The N-9 was the first naval aircraft to be developed primarily from wind tunnel data, thus marking a coming of age of scientific research and engineering in the field of naval aircraft design.

In the summer of 1916, the Navy's one air station, Naval Aeronautics Station, Pensacola, was still using pusher hydroplanes, not greatly changed from those of 1911. The aviators, convinced by a series of fatal crashes that the pushers were unsafe, condemned those on hand. Flying practically came to a halt. Attempts to purchase tractor planes from the aviation industry were disappointing, indicating that it was necessary to design a new aircraft.

Naval Constructor J. C. Hunsaker had established the nation's first course in aeronautical engineering at MIT and as part of his research had made wind tunnel studies of the Curtiss JN-2 military tractor. Just about the time that the pushers were condemned, he

ity. He proposed, therefore, to add a specified amount to the tail area and install skid fins on the upper wings.

The Chief of the Bureau of Construction and Repair, Rear Admiral David W. Taylor, gambling on Hunsaker's scientific research and engineering judgment, per-



CAPT. and Mrs. Clancy, Rear Admiral Martin and Capt. McCurtain attended ceremony.

sued Mr. Curtiss to make these changes to the JN in exchange for an order for 30 aircraft—for the Navy this was an order of unprecedented size. The contract was issued in August 1916 and in October the first N-9 aircraft was completed and sent to Newport News for demonstration. Although there is no record of the demonstrations, results were obviously successful as production under this contract was completed in December 1916.

IN SUMMING up the significance of the N-9, Mr. Pearson said at the ceremony, "There were two results of immense significance. First, when the declaration of war against Germany necessitated large scale production of trainers, the N-9 served as a basic prototype. Not only was it procured in quantity but other companies designed and built training models with similar performance and flight characteristics. Second, the success of the N-9 gave the Navy confidence, and it applied similar procedures in development and production of service type aircraft.

"Certain experimental uses of the N-9 place it in what we now regard as the mainstream of Naval Aviation. A few aircraft were shipped to the Sperry Company's flying field at Copiague, Long Island. Some of them were used as test vehicles for the Bureau of Ordnance Flying Bomb and hence

are forerunners of guided missiles.

"The N-9 also played a part in the development of ship-based aviation. In 1916-17 several armored cruisers, fitted with aircraft catapults, used the N-9 in efforts to develop techniques of operating aircraft from ships. These operations served primarily to demonstrate the crudity of the equipment involved. Thus, after the end of the war, Naval Constructor Holden C. Richardson developed a compressed air, turntable catapult here at the Naval Aircraft Factory. When the catapult was completed, he made the first demonstration shot in an N-9. This catapult was later installed aboard battleships and superseded the turret platform as a means of launching aircraft from a ship.

"Thus, the N-9 in some small way contributed to our current mainstays, both guided missiles and carrier aviation."

Expressing some of the nostalgia for another time, a Philadelphia newspaper commented:

"The fragile little plane, with its 53-foot wingspan, was the spark the Navy needed to produce better trainers and fighters and flyers. It was the granddaddy of the planes that trained Navy and Marine aviators to do the job in the South Pacific, in Korea and in Vietnam.

"There's only one N-9 left now, and the Navy has prepared a shrine for it in the Naval Aviation Museum in Pensacola, Fla. The Navy can't pin a medal on the old machine, but it can give it a place of honor beside the more famous pursuit planes and torpedo bombers of wars gone by. The N-9 never bagged a Fokker, a Zero or a MiG-15. But in its day, in its field, it was quite a plane."



CAPT. H. G. Wagner points to wing as he talks with RAdm. Fahrney, USN (Retired).

was ordered to the Navy Department. Hunsaker calculated that with certain modifications the JN could be converted into a naval training plane. Those, of course, included installing a pontoon and increasing the wing span to compensate for the added weight. These changes, however, would have destroyed the aircraft's stabil-



EXCELLENCE of the restoration work is admired by Capt. Barnaby and Mr. Kean.

ASO: SUPPLY, SUPPORT, SUCCESS

IN THE SUMMER of 1943, between broadcasts of war news, the Andrews Sisters were singing the praises of rum and Coca Cola and giving fair warning about apple tree romances. . . . Tire patches became a way of life as more and more rubber went to war. . . . Ration cards tightly controlled the family menu and the family car and the family itself had given up most of its luxuries, and most of its young men.

In Europe, WW II was in its fourth year. On the other side of the world, the Navy had regained the strength lost at Pearl Harbor and was carrying the war across the Pacific.

In the early morning hours of July 17, 1943, Navy *Wildcat* fighters, escorting an air attack on enemy positions in the Central Solomon Islands, intercepted 40 Japanese fighters in the vicinity of the New Georgia Group. The sun that was just beginning to rise on that battle was shining high over a building being commissioned in northeast Philadelphia. Here, the desk work would be done to replace vital parts damaged or destroyed in that battle. It was the new home of the Navy's Aviation Supply Office (ASO), organized two years before at the Philadelphia Naval Base.

As the campaign in the Pacific accelerated, the administrative support needed to supply Navy aircraft had to keep pace. Japanese General Tojo, shortly before his death, told General Douglas MacArthur that one of the principal factors that defeated Japan was the ability of fast carrier forces to operate for long periods away from their bases. ASO played a key role in supplying the fast carrier task forces of the Fleet.

At the commissioning ceremonies, Rear Admiral W. B. Young, the Chief of the Navy's Bureau of Supplies and Accounts, said, "The day is here when push-button control will direct stocks for all our bases and fighting units."

The pushbuttons of which the admiral spoke ran ASO's first, crude, mechanized equipment.



RADM. H. F. KUEHL, ASO's C.O. (C), hands the repair parts order for CH-53A to Sikorsky's John Lewis as Cdr. John Elmore, Provisioning Coordinator, looks on.

"Today, in its Twenty-Fifth Anniversary Year," says Rear Admiral Howard F. Kuehl, SC, USN, ASO's Commanding Officer, "automation is the frame of reference for most of ASO's administrative thinking."

The \$7 billion in aircraft it supports demand the most modern administrative equipment available. The \$2 billion inventory of stock items which backs up these aircraft demands the most efficient management methods possible. Automation is the answer.

Imaginative managers working with electronic specialists have parlayed their knowledge and experience into a complex of automated systems that are among the most sophisticated in the country.

Almost 80% of the purchases ASO makes each year are under \$2,500 per item. In a program that requires the spending of almost \$500 million annually, these are considered small purchases. While these represent only a small percentage of the dollars spent on repair parts, they create tons of paper-

work—and untold man-hours.

In 1962, when besieged purchase personnel started shouting "Help!" ASO's electronic task force came to the rescue. Its members worked out a strategy to conquer the onslaught of paperwork that threatened to disrupt the small purchase system. The basis of this strategy was an automated small purchase order program. Since it was launched in March 1963, \$75 million in such purchases have been made with this system.

As a result of the mechanized system, the 10 to 15 documents which cluttered a contract folder for a small purchase, were reduced to two. The annual printing workload has been reduced by at least 2,500,000 sheets.

In addition to the automation of small purchase orders, the computers at ASO are being used to control the 100,000 repair parts inventory. A system, developed by BuSANDA and the University of Pennsylvania's Moore School of Engineering, provides instant ac-

cess to thousands of entries of inventory information.

One automated program, which is aimed at the control of \$175 million in high value items, monitors every issue, receipt or other status change of these items throughout the supply system.

With automated techniques being adapted for most of the major programs used to supply naval aircraft, ASO has become the electronic nerve center of the entire Naval Aviation Supply System. Like any nerve center, its reflexes are conditioned by "signals" from the various parts of the system it controls. In supply, these "signals" are motivated by the day-to-day issues, receipts and requirements of supply units all over the world. In the past, daily transactions were reported monthly, bi-monthly, or under the best conditions, weekly. Supply information therefore was only as current as the last report. Today, in many areas of its mission, supply actions are reported daily over an electronic network that scans the world.

One of the most important effects of this immediacy is the speed with which needs are filled. If NAS NORTH ISLAND, Calif., for example, requests six gyroscopes on a Tuesday afternoon, by Wednesday morning, computer action has been taken which will start them on their way from NAS ALAMEDA, or the nearest supply unit which has the parts needed.

But the computers cannot do the job alone. Conscience and imagination must take over where computers leave off. Enter people—people who call a contractor by his first name; people who sweat and fret—get upset when the stock items they "baby" get into trouble.

In the spring of 1965, one of these worriers—a commodity manager at ASO—discovered a dwindling balance of junction boxes used in the bomb ejection system of Navy fighter and attack aircraft. A modification was being designed, so no new purchases could be made for the existing model. Hedging for time, he stepped up the repair program.

At the end of June, the contract for the modification was awarded. The repair program on the old

boxes was keeping up with the demand.

Late in July, a requisition came in from a West Coast naval air station for 13 of these junction boxes. The boxes undergoing repair had been exhausted. The modified boxes contracted for a month before were just starting in production. ASO wired the manufacturer, urging acceleration in the production schedule. The answer: No boxes could be ready before February 1966—seven months off.

It was time to start lighting some fuses. Action had to be taken. An emergency contract was awarded for 150 boxes.

The contractor, aware of the urgent need, promised a round-the-clock production schedule. Ten days later the first shipment of boxes went out to the West Coast air station that pushed the panic button. The heat was off. In terms of eight-month delivery schedules, the ten-day caper was close to a miracle.

One of ASO's newest systems is the Integrated Maintenance Management Program. This program is being used in planning the support of the Sikorsky CH-53A helicopter (NANews, October 1965).

With BuWeps Specification WR-30 providing the ground rules, the contractor was required to apply maintenance support planning beginning with design, and to continue it through the construction of the aircraft. The objective was to provide a more realistic support system. (Previously maintenance support planning often was not begun until after design work had been completed.) WR-30 requires the contractor to plan the aircraft's maintenance program, personnel requirements, training programs, publications, replacement rate and range of spare parts and support equipment.

In November 1965, orders for most of the support repair parts for the CH-53A went out to the contractor. Up to this point most of the pieces had fallen into place as hoped for. To facilitate the great amount of contractor-Navy coordination necessary to process the comprehensive maintenance support package required by WR-30, the contractor had provided per-

sonnel to work with ASO's provisioning records team.

To date, the WR-30 concept, as applied to the CH-53A helicopter has been working smoothly. ASO is confident that the support parts for the CH-53A will be manufactured, shipped, and on site, when the Navy assumes support in January 1967.

Similar successful results are anticipated with the application of the WR-30 spec to the General Dynamics F-111B, the Ling-Temco-Vought A-7A, and the Westinghouse AWG-10, airborne missile control system.

The year 1966, will be, as ASO sees it, the year when automation takes over all but the most complex decisions. The comprehensive program started several years ago has, as its objective, a supply system that will almost completely automate the handling of requisitions, purchasing and technical information. It will make supply information as current as the morning newspapers, and the response to supply needs as immediate as an electronic impulse.

In the past, the paper mills of ASO ground exceedingly slow. Today, their shuffling sounds are being replaced by the staccato clicking of computers.

From under the marquee at the main entrance of ASO, the view across the wide lawns is the repetitious red brick pattern of Philadelphia row houses. From those houses, and those that spread out from them throughout the Greater Philadelphia area, come hundreds of people who will pass under the marquee. In the center of the marquee is a pair of wings, flanking the letters "ASO." These letters signify ASO's commitment to the airpower so vital to America's military responsibilities throughout the world. A helicopter warming up outside a small village in South Vietnam; a cargo plane loading supplies for Operation *Deep Freeze* in Antarctica; jet fighters aboard an aircraft carrier in the Mediterranean—all depend on the efficient flow of repair parts bought and managed by ASO. ASO's energies are directed toward the task of ensuring that these aircraft are ready for the mission that is theirs.

CTF 72: A UNIQUE TASK FORCE



COMMANDER F. S. Kunkle briefs **Commander Task Force 72, Rear Admiral R. M. Isaman**, in his cabin while **Commander M. R. Boyak (L.)** and **Commander C. J. McGrath** look on.

AMONG THE SEVENTH Fleet's task forces, Task Force 72 is unique. Designated as Taiwan Patrol Force in 1953, the force was reorganized in 1960 as Commander Patrol Force Seventh Fleet/Commander U.S. Taiwan Patrol Force/Commander Fleet Air Wing One.

This tripartite command brings diverse responsibilities to the Force Commander. He is charged with the vitally important anti-submarine protection of the Seventh Fleet and friendly nations in the Far East; with the security of the Taiwan Strait; and with overseeing the operational readiness, training and logistics of patrol squadrons from Japan to Vietnam.

At present this threefold responsibility is the task of Rear Admiral R. M. Isaman, with his staff of 80 officers and men. They execute their assigned missions from one of three seaplane tenders, among which Admiral Isaman rotates his flag.

Task Force 72 is composed of two detachments, two Fleet air wings, 5½ patrol squadrons, a destroyer division and a seaplane tender.

Fleet Air Wing Six at Iwakuni, Japan, and Fleet Air Wing Eight at Sangley Point, Republic of the Philippines, provide on-the-scene guidance and assistance to patrol squadrons in those areas. They are aided by Fleet Air Wing One detachments at Naha, Okinawa, and Sangley Point.

The five and a half patrol squadrons now assigned to CTF 72 include all types of Navy patrol planes; the new P-3A Orion, the sturdy SP-2H Neptune and the time-tested SP-5B Marlin. The main mission of these versatile aircraft is to provide antisubmarine protection; their second, to perform shipping surveillance, electronic reconnaissance, and aerial mine warfare throughout the Western Pacific. At present they are maintaining two aircraft on continual patrol in support of Operation Market Time. During 1965 these units flew 63,400 hours.

The destroyer division provides a continuous patrol of the Taiwan Strait. This insures early detection of significant activity in that area and serves as a reminder that the United States will stand by its

pledge to take the necessary action to assure the defense of Taiwan.

The flag of CTF 72 is now on board USS *Pine Island*. In addition to serving as a mobile base for Commander Task Force 72, *Pine Island* with her sister ships, USS *Salisbury Sound* and USS *Currituck*, has established advance seadromes to support seaplane operations in remote areas. In 1965, seadromes were established at Buckner Bay, Da Nang, the Con Son Islands, Cam Ranh Bay in South Vietnam and the Penghus Islands.

Over the years Task Force 72 has taken on additional burdens. In 1955, the force supervised the evacuation of the Chinese Nationalist Tachen Islands. In 1958, it undertook the resupplying of garrisons on the off-shore islands of Quemoy and Matsu, then under heavy Communist bombardment.

Since 1956 CTF 72 has been the United States' representative for maritime exercises within the South East Asia Treaty Organization (SEATO), often serving as exercise director.

VT-28 Receives Trophy Over 32,000 Safe Flight Hours

Training Squadron 28 at NAS CORPUS CHRISTI was recently given the Naval Air Advanced Training Command annual aviation safety award.

Rear Admiral R. S. Macpherson presented the award to Commander James E. Sanders of VT-28.

The squadron flew 32,319 hours without an accident. These included 82,482 field landings and 2,206 landings aboard the training carrier in the Gulf of Mexico.

A total of 244 student aviators completed training in the squadron's S-2A Tracker aircraft.

RAdm. Macpherson also awarded certificates to three VT-28 instructors for flying 1,200 accident-free hours: LCdr. Paul Courtney, Lt. A. D. John and Lt. Dennis Greff.

Although the safety award was for the 1965 calendar year, VT-28's record goes back to September 1964. Since then the squadron has amassed 52,000 accident-free hours, logged 100,000 landings and graduated 350 new Naval Aviators.



REAR ADMIRAL Frederick Bakutis, ComNavSuppFor Antarctica, greets RAdm. H. A. Renken, ComServLant, at McMurdo Station.



THE CAVERNOUS mouth of a VX-6 C-130 Hercules swallows aluminum van to be delivered to Plateau Station, Antarctica.

VX-6 BUILDS STATION IN RECORD TIME

ANTARCTICA'S belligerent environment of snow, ice and cold has been kayoed once again by the airlift delivery punch of Air Development Squadron Six (VX-6).

With a hefty display of aviation muscle, a new scientific station has been erected in Antarctica's "No Man's Land" in record time. In contrast to the early years of Operation *Deep Freeze* when building materials were either hauled hundreds of miles over land by motor vehicle or air-dropped (which resulted in some spoilage), the new station this year was delivered and constructed in one month.

VX-6's ski-equipped C-130 *Hercules*, which made almost daily airlift sorties to the bleak area 1,400 miles from the main base of operations at McMurdo Sound, made this record possible.

"Plateau Station" is located 11,900 feet above sea level on a stretch of ice 630 miles beyond the South Pole. This is near the earth's curvature where, meteorologists claim, much of Antarctica's most severe weather begins. Yet, four Navymen and four scientists, including the station's officer-in-charge, Lt. J. L. Gowan, a medical officer, will spend nine months in complete isolation during Antarctica's long winter night.

The station's site was selected after several exploratory flights. The first time landing there was

made by a squadron *Hercules* December 13, 1965. This first plane carried the station's first inhabitants and some construction equipment along with food and fuel.

A simple flag-raising ceremony marked the occasion. Then the men turned to building their temporary housing. Thereafter, VX-6 C-130's flew almost daily to bring cargo and the station's permanent aluminum vans that will serve as the working and living spaces for the wintering-over party.

The delivery aircraft experienced some difficulty at the station's site. On the initial flight, the *Hercules* had to make several attempts to get airborne because the extreme altitude reduced the aircraft's engine efficiency, restricting power output. Another hindrance was the deep soft snow covering the area.

Not only did the aircraft run into some difficulty but, during the first days of the operation, the men, although essentially in good health, also experienced some discomfort because of the high altitude. But that discomfort soon wore off.

Creation of Plateau Station was *Deep Freeze '66's* main objective. It was built to serve as the "end of the line" for members of a scientific traverse party investigating the unknown area of the Queen Maud Land between the South Pole and the continent's northern coast line.

This is the second year of the traverse trek, a monumental effort that is expected to be achieved in 1969 at the Belgian base of Roi Baudouin on the African side of the continent.

The members of the overland party will culminate their 1965-66 effort at Plateau Station. At this point, VX-6 aircraft will back-load the scientists to McMurdo Station for eventual return to the United States.

The third phase of the traverse will begin again at Plateau Station in October 1967.

In addition to serving as a "stop in the road" for the traverse party, four scientists at Plateau Station will conduct a variety of studies during Antarctica's winter months, including Auroral discipline investigation, geomagnetism, meteorology, and forms of radiological science checks.

The mammoth undertaking at Plateau Station was just a part of VX-6's task during *Deep Freeze '66*. The other scientific stations on the continent—including Byrd, Eights, Hallett and the South Pole—continued to receive aerial resupply on an almost daily basis. When the five-month season ended February 28, officials estimated that VX-6 had delivered over 12½-million pounds of cargo, including 750,000 gallons of fuel, with a grand total of over 7,500 flight hours.



CH-47 AIRLIFTS A DAMAGED A-1

Flying Skill Pays Dividends Experience Saves a Skyraider

Years of training and experience paid dividends when a Navy pilot saved his crippled A-1 *Skyraider* after it received structural damage over South Vietnam.

Commander Robert R. Worschescek, Executive Officer of VA-52, was flying air support when heavy gravitational force gripped the aircraft at the bottom of a dive and the *Skyraider's* tail section tore loose. Finding he could control right turns and banks, he elected to remain with his plane and make an emergency landing at Tay Ninh, about 40 miles northwest of Saigon.

With the *Skyraider* safely down, salvage operations began. Navy maintenance personnel joined Seabees at Tay Ninh and removed the A-1's engine and propeller. With the weight lowered, the Army's 147th Aviation Company supplied a CH-47 *Chinook* for an airlift to Bien Hoa.

Owing to Commander Worschescek's remarkable feat, the A-1 was flying missions again in a week.

Guide for RPS Custodians Correspondence Course Ready

A Registered Publications Custodian correspondence course (NAV-PERS 10415) has been prepared by

the Chief of Naval Operations for personnel who man the Registered Publications System (RPS).

The course is designed to improve the security of registered publications and to increase efficiency in the handling of RPS material. It covers all aspects of the issuing, handling, accounting and distribution of RPS publications.

This course provides a medium for self-study by custodians, alternate custodians, witnessing officers, local holders and other personnel who use the RPS material. It is recommended for commanding officers, executive officers and others responsible for the supervision of those handling RPS publications.

The study will be particularly valuable where attendance at an RPS training school is impossible.

Requests for the course should be addressed to the U.S. Naval Correspondence Course Center, Scotia, N.Y., via normal channels.

VR-3 Pilot Wins Award Marks 10,000 Safe Flight Hours

Lt. John E. Bennett, Jr., a member of Naval Air Transport Squadron Three, home-based at McGuire AFB, N.J., recently received a coveted flying safety award from his C.O., Capt. Stanley Montunnas.

The award was made in recognition of Lt. Bennett's flawless safety record during 10,000 pilot hours, often operating from sub-standard airfields around the world.

Lt. Bennett received a sterling silver Military Airlift Command emblem which has a diamond embedded in the center. The award was accompanied by a personal letter from AF General Howell J. Estes, Commander, MAC, citing Lt. Bennett's outstanding record.



LT. BENNETT & CAPT. MONTUNNAS



A DEVICE used to pre-flight the AN APN-130A navigation system in the SH-3A has been developed by Ryan Aeronautical Company. The one-man test set is an improved version of the Doppler Radar Test Set in use.



RADM. J. J. Lynch, CNABaTra, accepts a scale model of the T-34 Mentor from R. H. McGregor, Beech Aircraft Corporation. The model is to be part of a permanent display at Naval Aviation Museum at Pensacola, Fla.

Will Direct Naval Labs Dr. Johnson Appointed to Post

Dr. Gerald W. Johnson has been appointed to the recently created post of Director of Naval Laboratories by Secretary of the Navy. He will be the principal advisor for the Assistant SecNav (R&D).

As the principal advisor to the Assistant Secretary of the Navy (R&D), Dr. Johnson will assume managerial responsibilities for Navy research and development laboratories. The Naval Research and Naval Ordnance Laboratories and the David Taylor Model Basin are among the approximately 30 facilities under his administration.

Dr. Johnson was formerly associate director for peaceful application of nuclear power at the Lawrence Radiation Laboratory, Calif.



DOUBLE-LAYER orally inflatable canopy will offer added low-temperature protection.



NEW MULTI-PLACE life raft features a detection light and salt water-activated lights to illuminate boarding stations. Stowed survival equipment is available inside.

SEA SURVIVAL IN RELATIVE COMFORT

PILOTS AND AIRCREWS traveling in areas where below-freezing temperatures prevail must fly with the constant reminder that, in the event of an emergency, a successful exit from the aircraft is only the first step in the process of survival. Once in the water, the real challenge begins.

To increase the chances of downed aviators surviving in frigid waters, the Bureau of Naval Weapons in 1962 designated the Aerospace Crew Equipment Laboratory (ACEL) as the principal laboratory for the development of new sea survival equipment.

One of its major objectives was to develop life rafts with long-term, low-temperature survival potential, night detection capabilities, and reliable, all-weather inflation systems.

Two rafts are now being evaluated. Both provide added protection for the fighter pilot and members of an aircraft crew.

The one-man raft with insulating canopy was developed to accommodate a survivor in a pressure suit. The canopy is inflated orally. Insulation is provided by dead air space between the canopy layers. Although the raft is seven inches longer and seven inches wider than the current PK-2 and MB-4, it retains the package size of the older rafts.

To reduce low temperature heat loss and increase comfort, an inflatable seat is used. A lower center of gravity for the floor provides increased stability.

At this time, Fleet evaluation has not been completed. Preliminary testing, conducted by ACEL under low-temperature, high sea state conditions, have indicated that the new raft will offer more protection and stability than the present model.

For aircraft crews, a 25-person life raft has been designed for low-temperature protection. It has a number of interesting features, including a self-erecting canopy and boarding lights. Insulation is also provided by dead air space between the canopy layers. As in the single-place raft, economy of space is essential. The 25-man capacity raft fits into the same package as the current 20-man raft.

At the same time these new rafts have been developed, a new system for inflating them has been devised. The currently used CO₂ system will inflate a raft with speeds varying directly with the temperature of the gas. For example, at 20 degrees Fahrenheit, it may take three or more minutes to inflate a 20-man raft. At 80 degrees Fahrenheit, only 20 seconds will be required to inflate it to the required pressure.

The new inflation system is under development at the Naval Weapons Laboratory, Dahlgren, Va. Known as a cool-gas generator, it features an ignitable propellant whose hot gases mix with liquid CO₂ to produce a warm gas to inflate the raft.

As both a convenience and an added safety factor for aviators, ACEL is also working to develop life preservers with improved flotation and dry-wear properties. The laboratory also seeks to reduce the bulkiness of the preservers and so make them superior to the present models.

The current Naval Aviation life preservers, the Mk 2-4 series, worn outside the flight clothing, have been adjudged by ACEL as unsatisfactory in varying degrees with respect to their bulk, dry-wear and flotation characteristics.

A new life preserver system, designated the Mk 5, can be worn inside existing and proposed flight clothing.

These new designs and other projects, undertaken by the Aerospace Crew Equipment Laboratory as well as allied offices, are not expected to answer every problem but to encourage for the future new approaches to the design of life preservers and life rafts.

WITH THE MARINES IN VIETNAM



MARINE AIRCRAFT GROUP 36 helicopter lifts off the rice paddies as Marines head for cover in Operation Quickstep. Marines were flown into landing zones to attack VC stronghold.

One-Day Strike

At first light, Marines could be seen on a hill overlooking Ky Ha airfield, home base for Marine Aircraft Group 36. They were watching their helicopters lift a company of U. S. Marines into a new Viet Cong emplacement within sight of the base.

Quickstep, a one-day operation, was launched in the early morning mist. Marine Medium Helicopter Squadrons 261 and 364 flew 16 helicopters from the landing mats at Ky Ha and began to circle almost immediately for the landing. With the troop-carrying copters overhead, four "gun ships" from Marine Observation Squadron Six were streaking in beneath them to pound the VC with rockets and machine gun fire. Before the choppers could land, fixed-wing jet aircraft bombed the landing zones to clear them of VC traps.

After the troops were put in the rice paddies, the helicopters returned to their base for two more loads. The crews had begun their work before breakfast. As the on-lookers filtered down off the hill, the battle continued with the ground Marines penetrating the VC stronghold.

By the middle of the afternoon, the Marine company had sent the Viet Cong packing.

Record Day

With only 3,800 feet of runway in operation, the *Black Sheep* of Chu Lai claim a broken record for the most combat sorties flown in one day by a Marine squadron.

Capt. Robert H. Melville was the first VMA-214 pilot to lift off at 0800 to head for Viet Cong targets.

All day and night VMA-214's *Skyhawks* blasted skyward with JATO and landed with *Morest*. These takeoffs and landings were necessary because part of the runway was being repaired.

Fifty sorties and 17 hours later, Capt. W. W. Fitts landed the last jet, breaking the old MAG-12 record of 42 sorties in 18 hours.

The Viet Cong weren't as happy as the pilots. While the *Black Sheep* were breaking the record,



MAJ. C. A. SEWELL, C.O. of VMFA-314, right, talks with his RIO, Capt. Walt Britten.

they expended 13 tons of bombs, 988 rockets and 300 rounds of 20mm cannon fire.

Fourth Tour

The U. S. Marine squadron which had helicopters flying in the Republic of Vietnam in 1954 has returned for its fourth tour.

HMM-163, the only copter outfit at Hue/Phu Bai, the northern most enclave, is supporting Marine infantry units and the 1st Republic of Vietnam Army Division. They are battling the VC along an 85-mile-deep mountainous region stretching from just north of Da Nang to the demilitarized zone separating north and south Vietnam.

Support for the copter crews means more than 1,000 sorties a week, carrying assault forces to battle, resupplying remote, mountain-top outposts, resettling refugees and shuttling wounded from field to hospitals.

Black Knights

A Marine *Phantom* squadron, lances poised for battle, roared into Da Nang to join 1st Marine aircraft units serving in Vietnam. The squadron came to Da Nang from another base in WestPac.

The top *Black Knight* of Marine Fighter Attack Squadron 314 is Major (Lieutenant Colonel se-

lectee) Charles A. Sewell. This is the major's second time in Vietnam, his first in command of his own squadron. He served previously as executive officer of VMFA-115.

Originally commissioned in 1943 at MCAS CHERRY POINT, VMF-314 participated in the battle for Okinawa with distinction, earning the Presidential Unit Citation.

In 1945, the squadron moved to Kyushu, Japan, to serve with the original occupation forces. Shortly thereafter, they returned to the United States where they were decommissioned in 1946.

Bounding back strongly during

firing rate, LCol. Mulvihill obliterated a VC structure with less than 600 rounds as he fired several two-second bursts into the edge of the LZ. The torpedo-shaped gun pod holds 750 rounds of 20mm ammunition that is triggered electrically from inside the jet's cockpit.

Its streamlined, lightweight container is attached to the aircraft in the same manner as an external gas tank. It can be jettisoned in an emergency.

During critical combat conditions a *Skyhawk* can land, have the empty pods removed and new ones installed in less than 10 minutes.

shield, causing glass to fly into his face. He calmly landed the helicopter and the cargo was unloaded.

The copilot didn't know the skipper had been hit until the aircraft was back in the air and he turned to ask him a question. The injured pilot relinquished the controls and the copilot flew the chopper back to Ky Ha.

The colonel, treated by the medics, had to wear a patch over his right eye temporarily to protect it from the sunlight.

In a brief ceremony at Ky Ha, LCol. Porter was presented the Purple Heart by the Commandant



GENERAL W. M. Greene, Jr., Marine Corps Commandant, pins the Purple Heart medal on LCol. M. B. Porter, C. O. of HMM-261.



VMFA-323 Crewmen install 250-lb. bomb on wing of A-4, marking 1,000,000 pounds of explosives handled since first of month.

the Korean War in 1952, the squadron flew a record of 2,406 flight hours in 30 days flying *Panther* jet fighters.

Black Knights have deployed overseas five times, including a move to Taiwan where they flew 152 scrambles to aid the defenders of Quemoy in 1957.

'Hipeg' Debut

The *Skyhawk* screeched toward the Viet Cong, digging its new talons into the VC positions as Lieutenant Colonel Thomas E. Mulvihill triggered the new Mk 4 *Hipeg* (high performance external gun) gun pod.

Hipeg made its debut in Vietnam as the skipper led a flight of two VMA-224 A-4E's on a landing zone preparation mission south of Chu Lai.

Demonstrating the new weapon's awesome 4,200 rounds per minute

The VC have felt the sting of a new dimension in weaponry as yet another air-to-ground capability is added to Marine attack aircraft.

Another First

Lieutenant Colonel Mervin B. Porter is "first" in more ways than one. He got his Purple Heart by being the first pilot of Marine Medium Helicopter Squadron 261 to be wounded.

LCol. Porter, HMM-261's Commanding Officer, was flying the squadron's first mission since it arrived in Vietnam after a three-month tour aboard the USS *Valley Forge*. The flight had the job of resupplying the outpost at Tra Chu, 40 miles southeast of the home base of Ky Ha. They had already hauled 23,700 pounds of cargo and 72 troops to another compound near Tra Chu.

As the colonel was about to land, a sniper's bullet shattered the wind-

of the Marine Corps, General Wallace M. Greene, Jr. In addition to the Purple Heart, the colonel has four Distinguished Flying Crosses and 14 Air Medals.

Bombs to Spare

"Never mind writing anything about me. Tell 'em about this ordnance crew. They've really been breaking their backs this month," said Capt. Dayton A. Lewis, a *Phantom* pilot assigned to VMFA-323.

Lewis was referring to the squadron's ordnance crew which was busy hooking a bomb to a *Phantom* parked on the flight line. The bomb signified the one millionth pound of ordnance the crew had loaded by the middle of the month.

"Best ordnance crew I've ever worked with," remarked GySgt. Raymond J. Mulholland, a 22-year Marine veteran who's in charge of the crew. "If I do say so myself, they're doing a great job."



RECOILLESS RIFLES ARE ASSEMBLED AS HELO LANDS



MARINES RACE TO WAITING HELICOPTERS ABOARD US



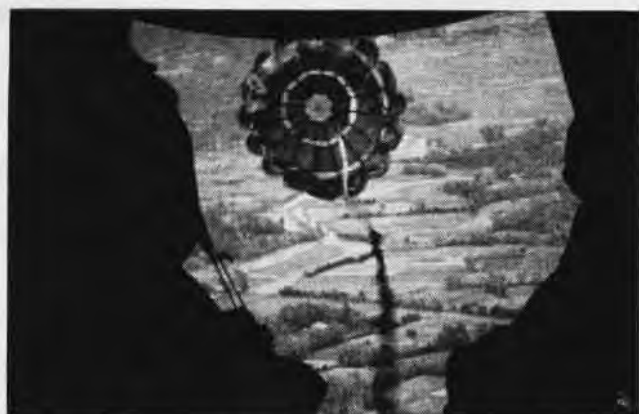
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A LANDING TEAM DEBARCS FROM HELO AT VUNG MU



WO JIMA AS AMPHIBIOUS LANDING STARTS OFF VIETNAM



PARACHUTE DROPS AMMO TO BELEAGUERED OUTPOST



MARINES RUN FROM 'COPTER TO ASSAULT POSITION

INSEPARABLE IN WAR



THESE VIET CONG ARE BOUND FOR INTERROGATION



PART IS OFFLOADED TO REPAIR DOWNED HELICOPTER

ON PATROL WITH FLEET AIR WINGS



FOUR GOT FOUR as Crew Four from Patrol Squadron 46 successfully completed four required exercises in one three-hour operating period to requalify for Alfa status.

THE P-3B, the latest innovation in patrol aviation, has made its debut in the Fleet. VP-26 on the East Coast and VP-9 on the West Coast both received the new model *Orions* in January.

The biggest change is the installation of the new Allison T-56-A-14 engine. It has a takeoff rating of 4,910 equivalent shaft horsepower as compared with 4,500 ESHP for the T-56-A-10W. Additionally, the requirement for water-alcohol injection on takeoff is eliminated.

The increased power provides significant changes in takeoff, climb and cruise speeds. It can loiter between 180 and 225 knots and then proceed to a new datum at speeds over 400 knots. Utilizing its two-engine capability, the P-3B can remain on patrol for more than 17 hours.

The Deltic system incorporated in the new model gives the ASW crews additional sensory equipment. The major components include the AQA-5 sonobuoy/indicator *Jezebel*, the AQH-1 tape recorder and the ASA-50 ground speed and tactical bearing computer. Further improvement is found in the modified ALD-2B ECM direction finder. This improved system detects electronic emissions, such as radio and radar beams from submarines.

The installation of the auxiliary power unit (APU) adds to the

mobility of the P-3B. With this, it can operate from forward combat zones and remote patrol outposts without support equipment. The APU will also provide for ground AC electrical power, and ground air conditioning of the electronic gear.

A final major refinement is the new ASN-42 inertial Doppler navigation system which can operate as a pure inertial platform without any input after initial alignment.

Both VP-26 and VP-9 are expected to complete the transition by the end of June.

* * *

Patrol Squadron 31 hosted naval officers from eight different countries for a tour of the squadron and a thorough indoctrination on patrol aviation in antisubmarine warfare.

Flag officers in the group included Rear Admiral Keyanon Satap of Thailand and Rear Admiral Chi-Lin of Nationalist China. Nine other senior officers were from Norway, Peru, Japan, Korea, Brazil and the Republic of the Philippines. The officers were currently taking part in an ASW coordinated tactical course given by the Fleet ASW School at San Diego.

* * *

Commander Robert J. Sadler was presented the Navy Commendation Medal in February by Rear



CAPTAIN J. B. Honan received Navy Commendation Medal from RAdm. J. W. Gannon.

Admiral John W. Gannon, Commander Fleet Air Wing, Pacific/Commander Fleet Air Moflet, acting for Admiral Roy L. Johnson, Commander-in-Chief, U.S. Pacific Fleet.

The medal was awarded to Commander Sadler in the name of the Secretary of the Navy for "meritorious service as Commanding Officer of Patrol Squadron 17 and Commander of a Navy Task Group participating in day and night aerial surveillance flights over the coastal areas of the Republic of Vietnam during Western Pacific operations from 11 July 1965 to 13 October 1965."

Commander Sadler is now serving at Moffett Field as operations officer on the staff of Commander Fleet Air Wings, Pacific.

* * *

Captain John B. Honan, USN, was presented the Navy Commendation Medal in January for meritorious service while Commander Fleet Air Wing Ten and Commander Fleet Air Wings, Pacific. Making the presentation was Rear Admiral John W. Gannon, Commander Fleet Air Wings, Pacific, who was acting for the Secretary of the Navy.

While serving as Commander Fleet Air Wing Ten, Captain Honan directed the establishment of Fleet Air Wings, Pacific, and held

command of it from April to October 1964. Furthermore, he was responsible for introducing the P-3A weapons system into the Pacific Fleet.

Captain Honan is presently at Moffett Field as Chief of Staff, Commander Fleet Air Wings, Pacific.

* * *

After island-hopping across Hawaii, Wake, and Guam to Iwakuni, VP-1 relieved VP-17 of her operational commitments in February. The squadron is now under the operational control of Fleet Air Wing Six, commanded by Captain G. E. Minor.

* * *

During a recent exercise, Crew Four of VP-46 claimed a possible record by completing four required exercises for Alfa qualification in a three-hour period. Although the crew had been Alfa-qualified, personnel changes necessitated requalification.

During the exercise, the crewmen successfully completed a run, using all of the ASW sensors to progress from a unidentified submarine contact to a kill. They then departed the submarine for the required interval. Returning to datum, they used MAD gear. The submarine was tracked, and a simulated kill made. The next run was made with active sonobuoys. The combination of sonar and MAD ended in still another kill. The last attack run also completed a simulated special weapon drop requirement, and that was all the crew needed to regain its Alfa status.

Crew Four is headed by Commander Chuck Lentz with Ltjg. Chuck Healy as TACCO.

* * *

Patrol Squadron 47, headed by Commander J. R. Pickens, joined the Seventh Fleet in January to relieve VP-46 at Naha, Okinawa. This deployment marked the end of a busy retraining cycle that began in March 1965 when the pilots returned from their last deployment in the P-5. They are now fully equipped with the P-3A.

* * *

Commander Chandler L. Von Schrader relieved Commander Wallace E. Sharp in change-of-com-

mand ceremonies held at Patrol Squadron 28, based at Sangley Point.

In January the squadron held an open house for 100 handicapped and retarded children from the Elsie Gaches Village.

* * *

Patrol Squadron 22 arrived at Moffett Field in late January to participate in Operation *Button Hook*. The Hawaii-based squadron took part in the joint exercise



CDR. ARMSTRONG, VP-1 C.O., greets Cdr. Holdren, VP-17, as Captain Minor looks on.

that linked Canadian and U. S. ASW forces. Other squadrons involved included VP-9 and VP-19 along with outfits from San Diego and Whidbey Island.

Vice Admiral John L. Chew, commander of the Pacific antisubmarine warfare forces, conducted the exercise. U. S. naval and air units were under the command of Rear Admiral John McNay Taylor, Commander Western Sea Frontier. Some 10,000 U. S. and Canadian personnel, along with 20 ships and 100 aircraft, took part.

* * *

Patrol Squadron 6 assisted in the successful sea-air rescue in January of 27 Greek crewmen from the *Rockport*, a WW II type liberty ship of Liberian registry. The ship was en route from Vancouver,

British Columbia, to Japan when heavy seas opened cracks in the hull and flooded the engine room and hold.

A P-3A *Orion*, flown by LCdr. R. Hellinger and Crew 5, was dispatched 1,000 miles from Barber's Point to an area 600 miles northwest of Midway.

Vital communications were relayed by the P-3 to the Midway Rescue Facility. Later, survival rafts were dropped by a Coast Guard *Hercules* and the men successfully transferred to the Military Transport Ship, *General Walker*.

* * *

VP-17 returned to Whidbey Island in February after a seven-month assignment to the Far East. While on deployment, the squadron performed aerial reconnaissance and antisubmarine patrols to all corners of the Far East.

Squadron aircraft were flown out of Saigon; Naha, Okinawa; Misawa and Atsugi, Japan; Taipei and Tainan, Taiwan; Cubi Point, Philippines; Hong Kong; Guam; Wake; and Bangkok, Thailand.

Although the squadron's 12 aircraft were never in the same place at the same time, the ground maintenance units established an 88% availability record.

In their off-duty hours, the squadron found time to support the Hofu Orphanage near Iwakuni. A total of \$1,000 was donated to the orphans and a baseball field, outfitted with equipment, was constructed out of a rice paddy.

* * *

A trial program has been initiated at NAS PATUXENT RIVER which is designed to make general service radiomen regular members of patrol plane aircrews. No change in rate is required.

The initial program, which began in January, had an input of 13 radiomen each class. The course is six weeks in length. After completion, all radiomen will be permanently assigned on a flight status to P-3A *Orion* patrol squadrons of the Atlantic Fleet.

The initial program is limited to Atlantic Fleet personnel, but a similar program is planned for the West Coast later this year.



NAVAL AVIATION'S 3-M SYSTEM WAS CREATED IN PART TO KEEP AIRCRAFT LIKE THESE FLYING EFFECTIVELY

3-M and 3-Level Maintenance

OF COMPUTERS AND KEY-PUNCH CARDS

Second in a Series

By John D. Burlage, JO1

INCORPORATION of the new Standard Navy Maintenance and Material Management (3-M) System into Naval Aviation brought radical changes to accepted procedures in a variety of areas, but the facet that seems to generate the most excitement is the use of computerized technology.

There is something awesome — and maybe a bit frightening — about the thought of men using machines designed to pinpoint both shortcomings and benefits in any field as vast as Naval Aviation Maintenance. This seems especially true when you consider that this entire portion of 3-M is in business to provide both high-level military planners and maintenance organizations with pointed, concise data that show the proper kind of important decisions to make about how best to repair the Navy's airplanes.

But the 40 persons who sat down in Norfolk a few years ago to build for Naval Aviation a maintenance and material management system that works weren't out to frighten anyone.

All they wanted to do was replace an antiquated, ineffective data collection operation (the FUR's or *Failure, Unsatisfactory, Removal Reports* originated by maintenance activities) with something that works easily, efficiently, and fast. When you think of ease,

efficiency, and speed in acquiring data these days, you have to think of computers—or at least of automatic data processing (ADP) equipment.

So, the Maintenance Data Collection aspect of 3-M calls for a computerized operation. Maintenance Data Collection is one of three broad areas of 3-M; the others are Improved Maintenance and Material Control Procedures and a Planned Maintenance System.

Calling for the use of computers or similar equipment in a data collection program and actually finding the right kind of equipment for the job may be two different things, however. For example, Captain Howard G. Goben, one of the members of the Norfolk policy committee and now assigned to the Maintenance and Material Readiness Branch of the Office of the Chief of Naval Operations, points out that many Navy commands would possess only the most basic type of equipment. The Maintenance Data Collection operation had to be designed down to that level. In addition, the problems associated with carrier aviation had to be—and were—taken into consideration.

The Norfolk group was able to surmount the obstacles associated with incorporating data collection procedures into 3-M. Funding started to obtain

the necessary data processing equipment shortly after CNO directed that 3-M be implemented.

WHAT IS data collection supposed to accomplish for Naval Aviation? By itself, absolutely nothing. The 3-M Manual, published shortly after the system was approved, has this to say: "It has been implied that the Data Collection portion of [3-M] will result in immediate reductions in the men, money, and materials used in aircraft maintenance. This is a gross misrepresentation of the benefits of the system. The system, in itself, guarantees no economies. The only thing it can do is provide timely and comprehensive data upon which decisions can be based. The data products of the system can indicate areas where economies are possible and should be made but the system does not automatically generate the decisions to effect those economies. To the extent that the system is actually used to provoke and stimulate these decisions, it can be regarded as a means of reducing requirements for men, money, and materials."

To be effective, data must be used—by those at the top of the Navy's chain of command as well as by the maintenance activities which generate it.

One area in which data may be used is in the establishment of the standard number of man-hours to perform repetitive jobs, readiness standards for various aircraft models, and over-all maintenance personnel utilization standards. Such standards are now being required in the maintenance and readiness fields; they can be put to good use, and the 3-M Manual gives this example:

"The Air Force has derived a 40-40-20 formula for maintenance personnel utilization; that is, of the total man-hours available to the maintenance organization over a significant period of time, [it] can expect to expend 40 per cent of them in 'direct' maintenance labor, 40 per cent in 'indirect' maintenance labor [such as supervision, administration, and quality inspections], and 20 per cent in 'non-productive' labor such as training, leave, liberty, medical and disciplinary lost time, etc. Whenever the direct labor portion drops below 40 per cent, the indirect labor exceeds 40 per cent, and the lost labor exceeds 20 per cent, [Air Force managers] consider their normal expected 'standards' have not been met and possible corrective action may be required."

There are other benefits to be derived from proper use of data. The manual says one of them is in the general area of material inspections:

"Every aircraft operating unit undergoes regular inspections of this type. As a general rule they have become regimented, pre-scheduled, voluminously documented inspections involving the expenditure of much time by many people. Too often the inspections attempt to 'inspect everything whether it needs it or not,' or to determine deficiencies by 'spot checks' which may or may not be representative, or they may even permit inspected units to write up their own deficiencies.

"The objectivity of this type of inspection, beyond assignment of a numerical inspection grade, is ques-

tionable. However, under [3-M], it is possible to use collected and analyzed data to identify specific material deficiencies which can be verified by inspectors, qualified and empowered to take remedial action.

"The potential for savings is in the system and needs only the decision to make use of it."

GIVING MAINTENANCE planners the proper kind of computer-provided information for use in decision-making necessitates providing raw material for the computers themselves. Under 3-M, the information that starts the collection-to-analysis process falls into three categories: Man-hour, Maintenance, and Aircraft Statistical.

Man-hour data is obtained through the principle of management by exception. It means that actions or incidents which vary markedly from certain standards or "norms" are singled out from the whole for special management attention. In this case, the system will provide insight into whether men assigned to maintenance activities are being used properly. The 3-M Manual outlines the procedure:

"Whenever a man is utilized for any purpose other than the purpose for which he was assigned [such as master-at-arms duties or time off the job for a haircut], he records the amount of time spent on cards which are collected daily and machine-processed. If all personnel were utilized 100 per cent in the primary maintenance assignments, no man-hour cards would be submitted.

"Man-hour data, therefore, provide a measure for deviation (or exception) from the theoretically perfectly manned, organized, and managed maintenance operation. Together with the actual 'productive' man-hours recorded on the support, Technical Directive Compliance Form and the maintenance action forms for each maintenance action, the man-hour accounting system provides a valuable tool for measuring the effectiveness of maintenance personnel utilization, the validity of maintenance personnel assignments, and the validity of the structure of the maintenance organization."

Category No. Two is Maintenance Data. The manual says of it:

"This category of data embraces the widest range, and most complex types, of information involved in this management system. The scope of the data collected is indicated by the descriptive titles of the data collection forms used. These source documents include the Support Action Form, Maintenance Action Form (single-copy), Maintenance Action Form (multi-copy), Technical Directive Compliance Form, and Configuration Control Forms."

The format for the majority of these source documents is radically new to aviation, and the manual gives specific reasons for the existence of three of them: "A large portion of the time of maintenance personnel, particularly at the organizational [squadron or other operating unit] level, is spent in functions other than corrective maintenance (i.e., repair or replacement of defective components). This work, such as aircraft servicing, aircraft handling, and the 'look phase' of aircraft inspections other than periodic

inspections, is properly a function of the maintenance organization and must be reported, if only for the purpose of workload control and scheduling.

"Because it is not directly significant, from the engineering analysis or supply analysis point of view, the information recorded does not require the same degree or depth of coverage as that recorded on repair or corrective maintenance actions. Accordingly, a Support Action Form is prescribed [to] simplify and reduce the total amount of data forms executed by the maintenance organization."

Of the Maintenance Action Form, the manual explains: "The portion of the maintenance organization's workload devoted to repair and corrective maintenance constitutes the area in which the greatest requirement for data in depth exists. These data

tory, and flight data recorded on the Equipment Statistical Data Card. Data are recorded on this card, on an as-occurring or once-a-day basis by designated responsible personnel in operating units, [and are] delivered daily to the ship or station Data Services Unit for machine processing. Data so produced and processed provide all the information needed to produce the reports required by the OpNav Accounting System on a timely basis *plus* readiness and utilization information which commanders and maintenance officers should monitor continuously to help measure their effectiveness."

Filling out 3-M source documents is, as the preceding statement indicates, by no means the whole operation. Data material is useless unless it is effectively presented to those who need it, and the system comes



SOME OF THE DOCUMENTS USED IN DATA COLLECTION



W. E. DAVIS OPERATES KEY-PUNCH MACHINE IN FDR

are required for the immediate management needs of the local commands as well as the more extensive and continuous needs of high level command, management, and technical and engineering agencies. Both single-copy and multi-copy forms are prescribed . . . to meet those requirements."

Finally, the manual discusses Aircraft Statistical Data: "Data collected by aircraft reporting custodians . . . provide high level commands with inventory information and with a means of portraying or reporting Navywide aircraft readiness and utilization. Input data are obtained from various sources in operating units, but primarily from records maintained by maintenance personnel. Neither these data sources nor high level reports themselves are readily accessible to, or timely enough for, operating units to assess the results of their own maintenance effort on a continuous basis in terms of aircraft readiness and utilization. Accordingly, [the system] utilizes readiness, inven-

prepared with the means to do just that. It calls for the use of what have been titled "Data Flow Cycles."

There are three distinct, but related, cycles: the *Local Cycle* at the organizational and intermediate (station or air wing maintenance department) levels, the *Local-Central Cycle* between the ship or station and the Maintenance Support Office (MSO—a central data processing activity established and manned in 1965 in Mechanicsburg, Pa.), and the *Central-External Cycle* between the MSO and the bureaus, offices, and senior commands.

THE BASIC source of data is the individual working maintenance man and his superiors. When a job is completed, the worker turns in a source document or basic information to his work center supervisor (the PO or NCO in charge of the shop or work center responsible for the job). It is the supervisors' task to either assure that forms are complete and accurate or

to undertake the task of filling them out himself.

Source documents are delivered to the unit's analysis section at a specified time each working day; from there they are sent to the data services unit of the supporting or parent ship or station.

Data service units are the key to the data conversion process. They are manned ashore by civilian key-punch operators and other technicians. At sea, enlisted machine accountants (MA's) man the units. These personnel key-punch source document information onto standard electric accounting (EAM) cards. If there seems to be an error in the source material, the originating unit gets a request for correction or clarification of the data.

Key-punched and verified EAM cards are sorted by the data services unit. Machine listings of data, on a daily or as-specified frequency, are "printed out" for the originating unit, which also gets the source documents back.

These machine listings are one of the immediate benefits realized by a maintenance activity under 3-M: it can receive as many as four to six reports of its preceding day's maintenance efforts.

"This is something we've never had before," Captain Goben says. "We've had the basic information, of course, but it took a lot of man-hours just to cull it out of our old work orders and our old man-hour accounting system and get it in a usable format.

"In the area of man-hour accounting, we didn't consider our previous method reliable because we had no way to monitor each activity to make sure it was, in fact, filling out reports when it was supposed to. Our new system has built-in check points. We know the available man-hours involved. We can take the man-hours excepted, and the man-hours documented on other source forms, and come up with what we call a reliability factor. In other words, we can expect to get about a 95 per cent factor under 3-M. It makes for an effective policing system."

What the maintenance activity gets from man-hour accounting is a good look at whether its personnel are being used effectively for the mission they were trained to accomplish. As an example, one unit evaluating 3-M was able to work itself out of a repair backlog for the first time in six years by juggling personnel assignments to fill "holes" in the working day pinpointed by man-hour accounting, and by applying proper management procedures.

SQUADRONS and other activities get their biggest benefit from data processing from the routine reports they receive; the hierarchy, on the other hand, needs a bit more assistance before it can utilize the data 3-M makes available. The remaining two flow cycles provide the assistance.

In the *Local-Central Cycle*, duplicate decks of EAM cards are made by the local data services unit for mailing to the MSO in Mechanicsburg. There, the data contained in the cards are combined with material received from all reporting units and reduced to machine tapes for computer processing. If errors have slipped through the data services unit, they may be caught by the computers. If they are, the reporting



MAINTENANCE MAN'S SUCCESS: A-4 READY TO LAUNCH

unit gets the guilty material back for correction.

Additionally, combined Navywide data are sent to individual units for use in measuring their effectiveness against widespread standards or averages in maintenance management.

Next up is the *Central-External Cycle*. Besides providing "feedback" information to reporting units, the MSO is responsible for getting the data to the high-level agencies that need it.

"Agencies," in this case, include CNO, the Commandant of the Marine Corps, the Chief of Naval Materiel, Fleet and Type commanders, functional staffs, bureaus, field organizations, and other establishments that must have factual or comprehensive data to make sound command and management decisions. Their requirements can be satisfied by the Mechanicsburg activity two ways: either by direct machine "print-outs" or listings for the agency concerned or by providing the agency with complete tapes of collected data for processing on its own computers.

Another facet of the *Central-External Cycle* involves the Naval Air Technical Services Facility. It was established by the Bureau of Naval Weapons as the aviation maintenance management information center; raw data received from the MSO is further analyzed, and the results are provided for agencies with specific requirements.

SUCH ARE the workings of the data processing side of 3-M. It is only a portion of the over-all operation, but it represents a phenomenal breakthrough for aviation maintenance.

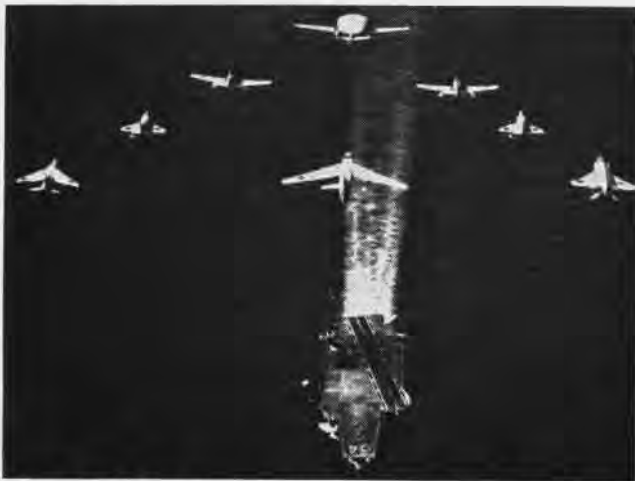
As might be expected, there are certain problems that go with the transition to the system. Captain Goben discusses some of them:

"We are, right now, in the process of implementing the program in more than 30 naval air stations, but we're limited in our schedule by both training capabilities and the amount of money we can spend. Incorporation of 3-M has been programmed over a two-year period; we anticipate having it completed across

the board—and this includes both continental and extra-continental activities, all stations and ships—by late calendar 1966.

"Another problem we have is the actual timetable for implementation. The system must be incorporated into all units assigned to an aviation complex simultaneously because we can't put an air wing or an ASW air group on 3-M ashore and then have it deploy aboard a ship that doesn't have the required data processing equipment. In some cases, however, we have been able to 'interphase' the process by having the squadrons use the new 3-M forms and flying them ashore or having them brought in to a data processing unit at a later date, but this loses time.

"We have scheduled full implementation of the system aboard carriers by the middle of 1966, so this problem should be overcome by then. We have interim installations aboard more than a half-dozen carriers now, with BU SANDA and BU WEPES procured permanent equipment being installed in the remainder as deployment schedules permit.



CVW'S ARE TO HAVE COMPLETE 3-M SYSTEM THIS YEAR

"One of the most basic problems has been a matter of acceptance of the program."

In this last instance, the problem seems most easily solved by simply telling those caught up by 3-M what it's all about. To this end, the BU WEPES/BU SANDA crew in Washington travels as much as possible to aviation activities to give them the word.

Once they understand what 3-M is and what it's expected to do for them and their work, aviation maintenance men generally welcome the transition. A goodly portion of their acceptance is caused by the physical benefits of the system, still to be discussed in detail in this series, which are readily apparent to and appreciated by those who repair the Navy's airplanes. Even the paperwork aspects of 3-M are readily tolerated when personnel see the need for them.

There is a specific benefit of the system that rates at the top of the ladder, and the 3-M Manual has something to say about it:

"One of the positive benefits of this system is in the area of leadership. The data produced by this system

can provide a factual basis for identifying outstanding individual or group achievements in the field of maintenance which should receive commendation.

"The system provides information that will help to insure that leave, liberty, compensatory time off, etc., are apportioned equitably. These are some of the positive aspects of this system which must be emphasized in making it effective. Maintenance personnel cannot be expected to contribute enthusiastically to a program which only accentuates deficiencies. The program must lay emphasis on the positive and personal benefits that accrue."

And the manual also says:

"This system will survive and will operate successfully in spite of stupidity, meager resources, and human error. These deficiencies are correctible. This system will definitely *not* work or survive in an atmosphere of indifference and especially in an atmosphere created by command indifference.

"A factor in excess of five per cent error is considered unacceptable and avoidable in the area of human



PROPER PROCEDURES: KEY TO AIRCRAFT MAINTENANCE

error. There is no acceptable factor for command indifference. Maintenance and material management at organizational and intermediate levels is big business. Approximately 85 per cent of the Navy's aircraft inventory is maintained by organizational and intermediate levels. The Navy's investment each year in training the required numbers of organizational and intermediate level personnel to maintain these aircraft is, in itself, a substantial part of the annual budget. Add to this the annual expense of providing the material resources, facilities, equipment, tools, parts, etc., which must be procured each year . . . and an impressive annual investment is represented.

"Even if higher authority condoned it (which it does not), common sense would demand that this vast investment not be left unmanaged."

So, the call is issued for effective management of the Navy's aviation maintenance resources; 3-M's supporters are certain the system will answer it.

Next: What 3-M gives for what it gets.



IMPORTANT PART of ground training includes making simulated rescue from SH-3A.



DESERVING MOMENT comes after eight months of training when Commander A. L. Phillips, Jr., Commanding Officer of HS-9, pins gold aircrew wings on Robert S. Hayes, AX3.

AN UPWARD CAREER IN NAVAL AVIATION

LIKE A GREAT number of young men in the Navy, he had always wanted to fly—and now he does. Today, Robert S. Hayes is an Aviation Antisubmarine Warfare Technician, Third Class, attached to Helicopter Antisubmarine Squadron Nine, based at NAS QUONSET POINT.

Hayes realized his ambition recently when he was awarded his gold aircrewman wings and declared qualified to fly as a crewman in the SH-3A *Sea King*.

The routes into the air vary with the type of aircraft and its mission, but for all of them determination and enthusiasm are requirements. The following path was taken by a helicopter aircrewman.

Hayes entered the Navy in August 1963. After completing his recruit training, he attended Aviation Antisubmarine Warfare Technician School at Key West. Upon graduation, he received orders to HS-9, a unit of Carrier Air Group 60 which normally deploys aboard USS *Essex* (CVS-9). Once in the squadron, his interest in flying increased. He found he could qualify for aircrew training.

The first step for Hayes was a trip to the flight surgeon for a thorough physical examination. Because of the use of sonar in ASW, the candidate's hearing was tested with great care. Having met all

By T. W. Zdanio, SN

the physical requirements, he began training.

This program is a demanding one. While in training, aircrewmen must carry their normal share of the squadron's workload and remain on the watch bill.

Ground school opened for Hayes with an emphasis on land and sea survival. In the principles of first aid, a necessary part of his training, particular attention was given to the treatment for shock and burns, fractures and exposure. He was also required to pass a rigorous swimming test, demonstrating the use of various survival strokes. Ditching and bailout procedures were learned and practiced.

In the classroom, Hayes studied the history of sonar and the physics of sound. The bathythermograph, a device used to measure the temperature and gradient of water, was demonstrated. He also listened to lectures on the capabilities and limitations of the submarine.

At this point in his training Hayes was introduced to an important device, the AQS-10 sonar. The crux of helicopter operations in antisubmarine warfare depends on the proper operation of this gear. Listening for sonar echoes takes time and practice, but first there must be a basic understanding.

Thereafter came instruction on the use of maps, charts, grids and plotting boards, all necessary tools of the aircrewman. He also learned the elements of voice, code, flashing light and flag communications. Then followed a course in recognition in which he was required to correctly identify U. S. and foreign warships, submarines, aircraft.

For part of his training, Hayes went on flights in the SH-3A. On these hops, Hayes was trained to operate sonar gear and carry out search, tracking and lost-contact procedures.

Before receiving his aircrewman wings, Hayes had to pass a final examination, which included an evaluation flight, open and closed book tests, and obtain a recommendation from his plane commander. The total time from start to finish of the program was eight months.

The Navy's aircrewman plays an important role in antisubmarine warfare. He must be familiar with the over-all Naval objectives: to destroy the enemy's ability to wage war. Not only must he understand his own weapon systems, but he must also know the enemy and his characteristics. Most important, he must know himself as well as his own limitations.

Once qualified, he is a necessary member of an important crew performing a vital mission.

SELECTED AIR RESERVE



KENTUCKY'S Sen. Cooper greets members of Fleet Tactical Support Squadron 663.

Kentucky's Own

In October 1964, a jeweler and a radio announcer, both Navy veterans residing in Somerset, Ky., called NARTU ANDREWS AF Base to find out how to form a squadron which would consist entirely of Naval Aviation veterans from Kentucky.

Winifer W. Freeman, AOC, the jeweler, and Harry Lee Smith, PT2, the announcer, said, "Give us the go-ahead on a squadron of Naval Air veterans from Kentucky, and we'll get the men."

They were as good as their word. They advertised, traveled 30,000 miles, made one telephone call after another and came up with enough veteran enlisted men and pilots from various cities in Kentucky to form Fleet Tactical Support Squadron 663 commissioned January 1, 1965.

Commander Raymond Ziesmer became the commanding officer, and the squadron members were dubbed "Kentucky Colonels."

Distance does not stump this squadron. Usually on the third weekend of the month, the "Colonels" are gathering at Lexington for the two-hour flight to Andrews for training. The squadron's mission is to train selected air reservists to be ready in an emergency to



PLANNERS convene to discuss 1966 model meet at Glenview: Howard Johnson, Academy of Model Aeronautics; Earl Witt, NAA; from Glenview Capt. Newhall and Cdr. Tanner.

airlift personnel and supplies to mobilization centers here and air bases abroad. Currently the squadron is using C-54 *Skymasters*.

VR-663 celebrated its first anniversary recently, and all 72 "Flying Colonels" assembled for a speech by Senator John S. Cooper (Kentucky) who praised their patriotism and lauded their program.

For Courage in Action

Public service and military training have occupied much of the time in recent months of Charles C. Weixel, a Naval Air Reservist at NAS NEW ORLEANS, and a policeman assigned to the Fifth District of that city.

On December 11, Weixel and a fellow officer gave chase to an automobile occupied by four men known to have committed five armed robberies within a two-hour period. Although the officers knew the men to be armed and desperate, the police did not fire at them. The robbers' car was finally halted. As the officers jumped from their vehicle, they were met with rapid gunfire which they returned. Two of the fugitives were wounded, and the officers succeeded in arresting all four men.

Weixel received a U. S. Savings

Bond for his brave and outstanding service and in March was honored with New Orleans Police Department's Medal of Merit.

Weixel, ADR3, is assigned to HS-822 and drills with the unit one weekend each month.

Kickoff for Model Meet

The 1966 National Model Airplane Championships planning conference has been held. Attending the NAS Glenview conclave were representatives of the Academy of Model Aeronautics, Hobby Industry Association of America and NAS GLENVIEW, WILLOW GROVE, LOS ALAMITOS, DALLAS, PENSACOLA.

The 35th meet will be held at NAS GLENVIEW the week of July 25-31. More than 1,500 contestants from 50 states and many foreign countries will be aboard, bringing with them their families, relatives and friends.

A two-day air show will climax the festivities with the *Blue Angels* and the "Flying Professor," Capt. Dick Schram, as headliners.

Rizzuto Assists Navy

At NAS NEW YORK, Phil Rizzuto, former New York Yankee shortstop turned sportscaster, took

time from his schedule to record some radio spot announcements for the U. S. Naval Air Reserve. Commander T. A. Williamson, Jr., Service Information Officer for NAS NEW YORK at Floyd Bennett Field, chatted with Rizzuto who revealed that he spent his pre-baseball days in Brooklyn.

The spot announcements, recorded at the Armed Forces Radio Service Studios, Manhattan, will feature baseball sound effects in addition to Rizzuto's voice.

The recordings will be heard over radio stations throughout the United States.

The Travelers' Friend

Almost 300 travelers, stranded by snow January 31, were fed and sheltered at NAS WILLOW GROVE, Pa., for more than 24 hours.

Two Navymen, Joseph Cioppa, ADAN, and Paul Bender, HN, discovered several busses and a car snowbound on Route 611. The sailors notified the NAS authorities who sent a snow plow and escort vehicle to guide the busses and a station wagon aboard the station. Several who were in need of medical attention were attended by personnel of the Medical Department.

The entire group was given hot coffee, later full meals, in the station "chow hall." During the long wait for the roads to be opened, movies were shown in the Recreation Hall.

No Drill Missed in 20 Years

Commander Thomas B. Kincannon, an active member of the Selected Air Reserve at NAS LOS ALAMITOS for the past 20 years, has not missed a drill. He is operations control watch officer for Air Wing Staff 77.

Neither Kiwanis Club conventions, nor weddings of relatives, nor flooded streets, nor any other important events have kept Commander Kincannon from his monthly drills since January 1946, a month after his discharge from active service in World War II.

He is the last of the original patrol squadron pilots still in flying status at NAS LOS ALAMITOS.

After taking primary flight training at Los Al in December 1942, he

served as staff pilot for RAdm. C. H. Jones, then a submarine commander in the Gilbert Islands. His other wartime duty was service with VPB-23 at Peleliu in the Marianas.

Since discharge in December 1945, the pilot has logged 4,000 flight hours in the Naval Air Reserve.

Quality Control

During the February personnel inspection at NAS OLATHE, LCdr. L. F. Raybourn, the station's assistant flight training officer for attack squadrons, received the Secretary of the Navy's Commendation Medal. Captain J. A. Tvedt, USN (Ret.), his former Commanding Officer made the presentation.

The commendation cited his superior performance while serving as Senior Flight Test Officer and Head of Quality Control Group at NAF LITCHFIELD PARK. He had reported to Olathe in October 1965 from the Arizona base.

During the three and a half years at Litchfield Park, LCdr. Raybourn was responsible for the accident-free flight delivery of more than 1,700 aircraft being returned to active duty from storage. Many of the aircraft—the *Skyraiders* in par-

ticular—have been sent from Arizona to Vietnam for duty against the Viet Cong.

In addition to this, LCdr. Raybourn himself flew 1,395 accident-free hours for a total of 1,330 flights in 31 different types of aircraft, ranging from small trainers to the latest jets.

Seattle Points with Pride

NAS SEATTLE celebrated a three-year aircraft accident-free record January 29. The occasion was marked by a formation flight over Sand Point by station aircraft.

Captain J. N. Longfield, Commanding Officer, gave credit to the station's 1,500 Weekend Warriors and active duty personnel for making the achievement possible.

Sand Point leads the 18 air stations in the Naval Air Reserve Training Command in accident-free flying, according to Commander E. A. Potter, NAS safety officer.

Sixteen Naval Reserve squadrons and units and three Marine Corps Reserve squadrons use the station's seven types of aircraft. During the three-year period, Sand Point aircraft were flown over 60,000 hours, an average of 52 hours per day.



MR. ROY CHARLES, who heads Hampton Roads Navy League Council, presents Captain G. R. Crittenden, C. O. of NARTU Norfolk, keys to the 1966 "Fly Navy" Chrysler convertible.

AT SEA WITH THE CARRIERS



DUE FOR replacement, flight deck planking is removed from *Oriskany* by worker.



HYDRAULIC LEAK caused an emergency for *USS Hornet's* mail plane while the ship operated in the snow-swept Sea of Japan; barrier landing caused minor damage, no injuries.

PACIFIC FLEET

ENTERPRISE (CVAN-65)

The nuclear-powered *Enterprise* rejoined Seventh Fleet operating forces after a brief in-port period, and aircraft from the big carrier struck at enemy targets in South Vietnam. Pilots unleashed their bomb loads on enemy supply and communications facilities and hit hard at Viet Cong troops engaged in combat with American and RVN forces.

Now accompanied by her support ship, the nuclear-powered frigate *Bainbridge*, *Enterprise* spent 44 days "on the line" after her pilots first engaged the enemy. The carrier's most significant strike occurred when *Enterprise* aircraft joined those from *Kitty Hawk* and *Ticonderoga* to demolish the Uong Bi thermal power plant. The plant reportedly supplied 25 per cent of North Vietnam's total power.

HORNET (CVS-12)

During *Hornet's* Far East deployment, much of the ship's at-sea time has been spent off Vietnam. Her 2,500 officers and enlisted men

have learned to tolerate the hot and humid weather of "Yankee Station" in the South China Sea.

But, Bob Williams, JOC, reported, when the ship's schedule called for a two-week ASW operation in the Sea of Japan with the Republic of Korea Navy recently, her crew got a taste of Mother Nature's bitter fruit—fresh out of the refrigerator. Driving winds, snow, sleet and ice—along with heavy seas—gave *Hornet* men a real sample of winter, as the photograph on this page proves.

KITTY HAWK (CVA-63)

The Tonkin Gulf is "where the action is" these days, so Joseph R. Balsiger, SA, figured the name was as good as any to recommend for the new \$3,000 slot car track installed in *Kitty Hawk* to help crew members enjoy the little spare time they have during CVA-63's Far East cruise.

Kitty Hawk C.O., Captain Martin D. Carmody, presented Balsiger a ready-made slot car as first prize for his suggested name. "Tonkin Gulf Memorial Speedway." The speedway is a six-lane, multi-tiered, banked track similar

to those currently in vogue in the U.S. It's caught on in *Kitty Hawk*, and crew members are busy building the little cars used on the track.

Senator Jack Miller (Iowa) arrived aboard *Kitty Hawk* from Chu Lai, Vietnam, for an overnight visit.

Visitors of another type were also welcomed aboard CVA-63, and the ship's football fans lost no time getting to know them. They were Johnny Uitas, Baltimore Colts' quarterback; Sam Huff, Washington Redskins' linebacker; Willie Davis, defensive end of the champion Green Bay Packers; and Frank Gifford, former New York Giants' flanker and now a sportscaster. On a trip to Vietnam to visit military personnel assigned there, they spent an afternoon and evening aboard the ship. The four also visited *Ranger* and *Hornet*.

CONSTELLATION (CVA-64)

Captain William D. Houser relieved Captain George H. Mahler, III, as C.O. of *Constellation* while the carrier was at NAS NORTH ISLAND, San Diego. The new skipper reported from duty in the office of the Secretary of Defense: Captain Mahler's orders directed

him to report for duty as chief of staff for Commander Carrier Division Five.

Eight North American Air Defense Command representatives who were guests aboard *Constellation* got a rather precarious view of underway refueling operations. They got it from a bosun's chair as they were highlined from CVA-64 to the Fleet oiler USS *Mattaponi*.

To alleviate any fears they may have had about the operation, *Constellation* crewmen called on a volunteer from ship's company to test the rigging. He came in the form of Ltjg. Donald T. Shintani, and he was dragged, wearing a skin-diver's wet suit, to the bosun's chair by two burley MAA's. Strapped in forcibly, he made the trip screaming all the way—but successfully (if one judges success as only avoiding a dip in the Pacific).

Then *Constellation* Chaplain Henry W. Stroman gave the guests a sermon from his book, "Meditations in a Bosun's Chair." *Constellation's* medical officer, Dr. Kenneth H. Reichardt, was also on hand—"just in case," he commented sadly.

Constellation crewmen couldn't understand why their guests were so nervous when they got in the bosun's chair, one at a time; at any rate, the trip over and back was

successful and safe. The guests included Dr. C. W. Mathews, scientific advisor; Air Vice Marshal M. Lipton, RCAF; Major General W. H. Wise, USAF; Colonel J. D. Laing, USA; Colonel J. D. Blanchard, USAF; Lieutenant Colonels R. K. Grier and G. E. Kimball, USA; and Lt. M. P. Bothwell, USN.

PRINCETON (LPH-5)

Princeton is the recipient of the ComPhibTraPac Merit Award for Excellence, given only to those ships that complete amphibious refresher training with an over-all

830 gallons of AvGas into 208 helicopters in one day.

KEARSARGE (CVS-33)

Thirteen *Kearsarge* crew members joined representatives of all the services to form the audience for "Hollywood's Salute to Vietnam," a 1½-hour television program taped especially for the military station in South Vietnam.

Filming of the program was done at KTLA-TV's Hollywood studios. The televised tribute, organized and produced by KTLA's Johnny Grant, represented the combined efforts of the Armed Forces Radio



OILER USS *Ashtabula* refuels USS *Ticonderoga* in heavy seas off the coast of Vietnam. Rough ride made the operation difficult, but *Tico* received 175,000 gallons of oil.



KITTY HAWK sailors look over merchandise offered by the carrier's new hobby shop.

final grade of excellent.

Marion E. Hon, SK2, now a *Princeton* crew member, was awarded the Secretary of the Navy Commendation for Achievement by LPH-5 C.O., Captain T. J. Gallagher, Jr., for outstanding performance while he was serving in Vietnam.

VALLEY FORGE (LPH-8)

It's record-claiming time again. Crewmen assigned to LPH-8's V-4 Division are looking for a "gas gang" that can beat their record claim for pumping more than 27-

and Television Service, and 150 studio technicians and entertainment personalities. Grant and Bob Hope introduced the show, destined for transmission to TV receivers in Vietnam from an aircraft.

Kay crewmen played host to the Swedish Navy training ship H.S.M.S. *Alvsnabben* during its visit to the Long Beach-Los Angeles area.

A *Kearsarge* sailor has finally gained his United States citizenship. He was interrupted twice in the process when his duties required him to be at sea. To make



RESEMBLING a gigantic igloo, a vinyl-coated nylon "bubble" set on the flight deck of USS Shangri La enables yard workers to complete jobs in spite of bad weather.

certain he didn't miss the opportunity the third time around, his commanding officer gave Chilean native Antonio J. Rossi, BT2, orders to report to the Federal Building in Los Angeles, where his appeal for citizenship was granted.

BENNINGTON (CVS-20)

After 54 days in drydock, *Bennington* was floated free at the Long Beach Naval Shipyard. The completed work included replacing two 36-inch rudder bearings, testing and repainting anchors and chains, realigning the rudder, and sandblasting and painting the hull below the waterline.

ATLANTIC FLEET

SHANGRI LA (CVA-38)

Workers at the Philadelphia Naval Shipyard are using a \$6,500 vinyl-coated nylon fabric "bubble," so they can install aluminum-clad deck planking on *Shangri La* without interference from winter weather.

Originally designed to cover outdoor swimming pools during cold weather, the "bubble" enables yard workers to perform a variety of construction projects adverse conditions might otherwise prohibit. It

looks something like an igloo, it measures 22½-by-15-by-7½ feet, and it's supported entirely by the air pressure maintained by a heater and a blower.

Although it provides a working area of approximately 40-by-70 feet, workers estimate they will have to collapse, move, and reinflate the "bubble" eight times before the flight deck planking installation is completed.

All non-designated E-2's and E-3's reporting aboard will be assigned to a new division for a maximum of three months mess duty. *Shangri La's* subsistence officer, Lt. A. J. Kennedy, says that this is one of the first aircraft carriers to try the system, although it has proved successful aboard smaller ships. The aim is to avoid assigning trained technicians, sorely needed in their regular jobs, to messman duty.

LEXINGTON (CVS-16)

The 143,000th arrested landing aboard *Lexington* was made by VT-5 instructor Lt. Lawrence D. Chase in a T-28 *Trojan*.

INTREPID (CVS-11)

Intrepid returned to home port, Norfolk, after four days of exercises in the Atlantic with squadrons of Carrier Air Wing 10. The



WORKERS under nylon "bubble" on flight deck of Shangri La secure new planking.

exercises followed a six-week restricted availability period for limited repairs and alterations in the Norfolk Naval Shipyard, which included changes to the ship's steam catapults. Capacity of the two "cats" was substantially increased during a major yard overhaul at the Brooklyn Naval Shipyard.

During the exercises, *Intrepid* crewmen conducted flight operations with aircraft of VA-15 and VA-176. A VA-15 A-4B *Skyhawk* piloted by LCdr. Gerry O. Tuttle scored the carrier's 91,000th arrested landing.

Rear Admiral Dick H. Guinn, ComCarDiv Four, transferred his command from *Independence* to *Intrepid* during the yard period.

FORRESTAL (CVA-59)

Four survivors of a U.S. Air Force C-47 *Skytrain* that crashed into the side of Mt. Helmos on the large island of Peloponnesos below mainland Greece were rescued by helicopter crews from *Forrestal's* HC-2 detachment and the Air Force.

The C-47 was bound for Naples from Turkey when it crashed about 300 feet from the top of the mountain. It carried nine Air Force officers and an Italian.

Forrestal was en route to Taran-

to, Italy, when word was received that the plane was overdue. The carrier and three destroyers, *Conynhan*, *King* and *Sumner*, were ordered to begin SAR operations that continued until the *Skytrain* was located on the mountain.

Minutes after the C-47 was found, *Forrestal* was requested to provide helicopters for rescue attempts. The HC-2 Det. 59 helos flew off the ship to a staging area at Araxos Field, 80 miles from the crash scene, and E-1B *Tracers* were launched to direct the rescuers.

A release from *Forrestal* said amateur mountain climbers and Greek police officers reached the wreckage first, but were unable to administer aid. "LCdr. Raymond K. McCullough . . . piloted the first helicopter to a landing site about 300 feet away from the [C-47] on the windy, snow-covered crest of the mountain," the release said.

Unable to land the first six times he tried because of wind, turbulence and rugged terrain, LCdr. McCullough finally dumped most of his fuel and lowered Lt. James E. Mullen, a *Forrestal* medical officer, to the ground. Then he set his helo down.

He lifted off and flew back to

Araxos after two of the survivors were carried to the helo by the mountain climbers and loaded aboard. The second *Forrestal* helo, piloted by LCdr. William Munro, picked up a third survivor after it landed on the same spot and the fourth was loaded aboard an Air Force helicopter that flew in from Athens.

The *Forrestal* release identified the remaining helicopter crewmen as Ltjg. Michael E. Howe and Lt. Louis R. Grant, II, copilots; Estes P. Morrow, AD1; John E. Keto, AD3; "D" "S" Vaughn, III, AM3; and Richard T. Ream, AE3.

It also said that when Dr. Mullen entered the wrecked plane to check the condition of the survivors, one of them asked him where he was from.

"The *Forrestal*," he replied.

"I knew those carriers would come through," the survivor said.

SARATOGA (CVA-60)

Saratoga returned to home port, Mayport, Fla., after completing three weeks of underway operations in the Caribbean. The ship was scheduled to begin her seventh Mediterranean cruise in March.

LCdr. F. A. Lees, VA-34, made *Sara's* 104,000th landing in an A-4.

INDEPENDENCE (CVA-62)

Independence entered the shipyard at Portsmouth, Va., for a five-week repair period after returning from carpal operations off the Virginia Capes.

AMERICA (CVA-66)

America crew members celebrated their ship's first "birthday" while CVA-66 was at anchor off the French Riviera. Observation of the first anniversary of the carrier's commissioning came in the

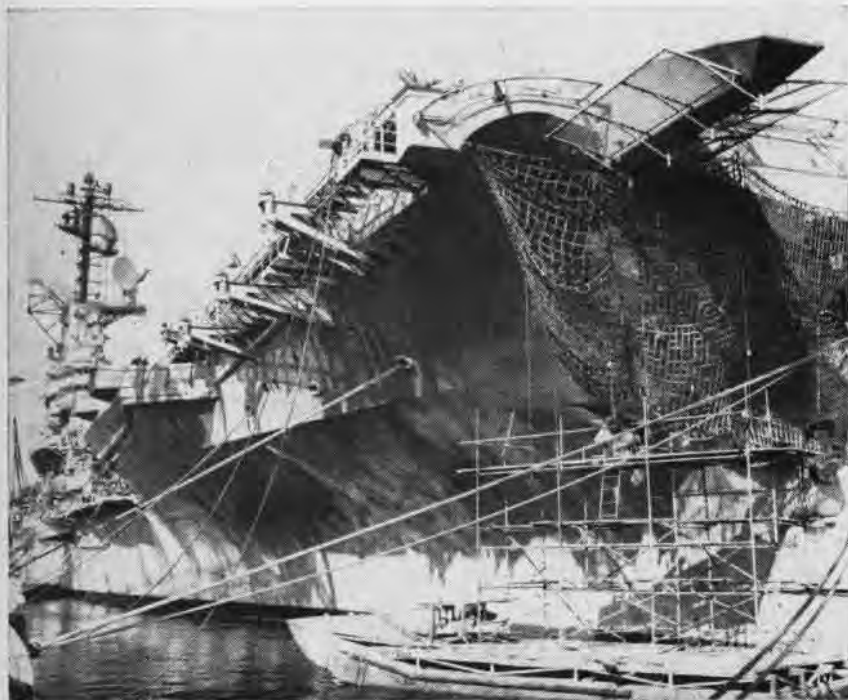


YOUNGSTER tries his luck at getting an "oom-pah" from *Forrestal* bandsman's tuba.

form of a program held in the hangar bay.

It was reliably reported that an observation of another nature—an admiring one, of course—was made by several *America* crewmen when Miss France, Michelle Boule, boarded CVA-66 for a tour. An *America* release commented, "Although Miss France speaks only French, she conveyed a message of friendliness to all *America* personnel," and added that her warm smile obviously delivered it.

Rex Harrison, world famous actor, and his wife were welcomed aboard while *America* was anchored off Genoa. They were escorted on a tour of the ship by Captain Lawrence Heyworth, Jr., and Mrs. Heyworth, and then entertained at a luncheon in the Captain's cabin. ★ ★ ★



WITH NETS and scaffolding at bow, *USS Intrepid* is moored at the Norfolk Naval Shipyard for a five-week restricted availability. Ship then underwent at-sea exercises.



WITH A QUALIFIED instructor nearby, a prospective ASAC controls C-45 from CIC mock-up at Naval Air Technical Training Center.



WHEN THE two blips merge on the radarscope, he has successfully directed the aircraft over his target, which is usually a shrimp boat.

FROM SHRIMP BOATS TO SUBMARINES

By Ltjg. C. H. Crowl

THE ANTISUBMARINE Air Control (ASAC) students at the Naval Air Technical Training Center at NAS Glynco make a practice out of controlling C-45 aircraft over local shrimp boats to prepare for the time when they may direct carrier-based helicopters or fixed-wing aircraft over an enemy submarine.

As a radar target, shrimp boats are similar to submarines. They often proceed on a broken course and occasionally go dead in the water. As the shrimp boat gathers his catch, the prospective ASAC perfects his skill in tracking an elusive target.

In a modest building set inland from the marshes of Glynn near St. Simon's Island in Georgia, there are mockups of carrier and destroyer CIC's that are complete right down to the hand railings. Here antisubmarine air control, along with 20 other CIC, air control and ECM courses, is taught.

With the advent of nuclear submarines and the electronic age, ASW comprises one of the most demanding tasks in the Navy today. Because of its constantly changing nature, the problem is one that requires an endless amount of research and training.

Heretofore, air controllers were trained in air intercepts for use in an anti-air warfare situation. Fleet experience proved a need for an

antisubmarine air controller thoroughly familiar with ASW procedures and tactics in addition to the control of aircraft.

In late 1960 a directive was issued to the Commanding Officer at NATTC Glynco to "establish and submit proposed curriculum for an Antisubmarine Air Control Course." The first ASAC course was two weeks long and graduated its first class in August 1962.

Since that time, the job of the ASAC has become more clearly defined. The course has been lengthened beyond fixed-wing tactics to include helicopter control.

In the first week of classes, the students receive lectures covering operational characteristics of all ASW helo and fixed-wing aircraft, their equipment and tactics. They are also introduced to the relative motion problems included in air control. They then develop proficiency in the use of radio/telephone procedures and search and rescue techniques.

During the practical phase that follows, prospective ASAC's are taught to radar-control aircraft to a successful attack against a submerged submarine. Additionally they learn the theory of coordinated operations and the role of the

aircraft over the possible contact.

During the last few days, students control aircraft over a simulated datum where tactics are determined by the surface situation.

In the CIC mockups, students control aircraft using radio communications and radar presentation. Although this phase of the training is simulated, they learn to track and dead-reckon before actual control begins.

While enrolled, all students are given the opportunity to fly in the C-45 while it is being controlled by other trainees. They are exposed to the problem from the viewpoint of the ASW crew and use this experience to better understand the air situation.

The ASAC staff, headed by LCdr. Q. O. Walters, is a cross section of Naval Aviators and ship's company officers. As a group, they combine a wide variety of ASW experience. Captain Henry T. Haselton commands the Naval Air Technical Training Center.

Of the several antisubmarine air control schools, NATTC Glynco and Fleet ASW School in San Diego are the only two whose students are designated ASAC on graduation. Other schools in Norfolk, Newport and Jacksonville utilize only synthetic training devices to prepare the prospective controller for designation in the Fleet.

Last of Otters Retires U-1B's Career with VX-6 Ends

Another gallant veteran of Antarctic exploration has been retired. Gone is the Canadian-built U-1B *Otter*, single-engine, ski-equipped aircraft. Once it was one of the busiest planes used by the Navy's Antarctic air squadron, VX-6. It was used primarily for trail party support, reconnaissance missions and photographic assignments.

As the scope of scientific programs for *Deep Freeze* was enlarged to include the entire continent, the role of the small, but versatile, *Otter* diminished. It took a back seat to the more powerful C-47 "Gooney Birds," C-121 *Super Constellations* and the huge turbine-powered C-130 *Hercules*.

However, the beginning of the end for the *Otter* came about with the advent of the helicopter. The helo's ability to maneuver in the tricky inaccessible areas of Antarctica, spelled *finis* to the *Otter's* usefulness.

As far back as 1955, when *Deep Freeze* operations got off the ground, there were as many as 16 of the hardy planes assigned to VX-6. This season there were only three, the only ones in the entire U.S. inventory.

The last Antarctic flight of the *Otter* was a true retirement ceremony, complete with side boys. With VX-6's C.O., Commander M. E. Morris, aboard, and Flight Safety Officer, Commander Charles O. Borgstrom, at the controls, the *Otter* was flown over Williams Field where its wings were dipped in a final salute to the aviators of Antarctica. As the tiny plane flew past the airstrip, a handful of VX-6 veterans waved goodbye to a gallant *Deep Freeze* veteran.



PARARESCUERS WALK TO OTTER



FIREBEE II, an improved version of the Ryan Firebee target missile is scheduled for laboratory and ground tests late in 1966 and a flight test program at Point Mugu early in 1967. Designated the XBQM-34E under a BuWeps contract, it is designed for speeds of approximately 1,000 mph. In a typical mission, the target will be launched from a zero-length ground launcher or from a "mother" aircraft at 10,000 feet. It will climb to 50,000 feet at a speed of about Mach .95 and cruise for 30 minutes. An external fuel pod will be jettisoned; the drone will accelerate and climb to 60,000 feet, level out at Mach 1.5 and fly for 20 minutes. Total time aloft from launch will be about 72 minutes.



WEAPON CLEANED AFTER FIRINGS

Combat Readiness Week VMF(AW)-232 Tries New Way

At MCAS KANEHOE BAY, Hawaii, pilots and enlisted men of Marine All-Weather Fighter Squadron 232 "scrambled" one week, but not for F-8D *Crusaders* that usually line the runway behind Hangar 104.

The *Red Devil* squadron didn't record one launch or log one minute of flight time in the entire five-day period.

During the non-flying week, officers and enlisted men of 232 worked together as an infantry unit, completing much of the annual training required of Marines, both air and ground.

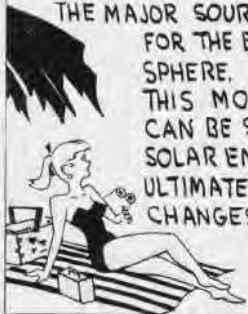
Normally these training commitments are spread throughout the year, but the squadron decided to try a new system of maintaining their combat readiness. VMF (AW)-212, the *Lancer* squadron, recently returned from duty off the coast of Vietnam, absorbed the *Devils'* air support duties for the week.

During the training cycle, 167 *Red Devils* fired at the rifle and pistol range for qualification. Fifty-two men scored expert with the M-14 rifle, and an additional 37 fired 210 or better for sharpshooter qualification. Twenty-six of the aviation men fired 190 or higher to give the air unit a total of 98% qualified.

Inspections were not forgotten. Officers and senior NCO's checked the condition of personal equipment, clothing and weapons. Although the squadron set aside its normal mission of supplying air support for First Marine Brigade infantry units, VMF (AW)-232 pilots maintained the necessary readiness to launch aircraft, if called for, on a moment's notice.

THE SUN

AS WE ALL KNOW, THE SUN IS THE MAJOR SOURCE OF HEAT FOR THE EARTH'S ATMOSPHERE. BECAUSE OF THIS MONOPOLY, IT CAN BE SAID THAT SOLAR ENERGY IS THE ULTIMATE CAUSE OF CHANGES AND MOTIONS IN OUR ATMOSPHERE.



IT IS ESTIMATED THAT THE DIAMETER OF THE SUN IS 109 TIMES THAT OF THE EARTH. ALTHOUGH IT VARIES, THE AVERAGE DISTANCE BETWEEN THE SUN AND EARTH IS 93 MILLION MILES.



THE EARTH DESCRIBES AN ELLIPTICAL ORBIT ABOUT THE SUN, WHILE THE SUN HAS TWO MOTIONS: THE ROTATION ON IT'S AXIS, AND THE PASSAGE THROUGH SPACE.



HOWEVER, THE SUN'S SURFACE APPEARS TO BE IN A STATE OF CONSTANT MOTION. PHOTO GRAPHS TAKEN BY SOLAR TELESCOPES INDICATE THE ACTIVITY TO BE SIMILAR TO A STORM WHIPPED FOREST—EXCEPT THE TREES ARE JETS OF FLAME SEVERAL THOUSAND MILES HIGH.

IT HAS BEEN ESTIMATED THAT THE SUN GENERATES AN ENERGY EQUIVALENT OF ABOUT 100,000 HORSEPOWER FROM EACH SQUARE YARD OF ITS SURFACE. LUCKILY, THE EARTH INTERCEPTS ONLY 1/2,000,000,000 OF THIS OUTPUT.



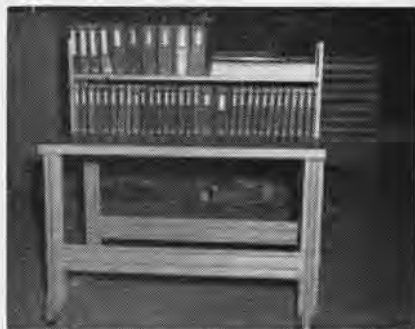
CALCULATIONS INDICATE THE SURFACE TEMPERATURE ON THE SUN TO BE ABOUT 12000°F. THEORETICALLY, THE INTERIOR TEMPERATURE COULD REACH AS HIGH AS 40 MILLION DEG. F.



water is determined by the intensity of fluorescence. Visual comparison is made with standards representing known quantities of free water.

This detector provides a quick and accurate method that has long been needed to detect and measure trace amounts of free water in fuel. Free water, even in such small amounts as 30 parts per million or less, can cause major corrosion damage in aircraft integral wing tanks, promote and accelerate growth of microbiological slimes, and deactivate close tolerance engine components. Water contamination of fuel in the past has on a number of occasions resulted in costly rework of aircraft engines.

Detectors are already on board LPH's, CVS's and CVA's, and procurement has been initiated for all other Naval air activities afloat and ashore. It is expected that this instrument will be an extremely useful tool in the fight against a major problem of the jet age—fuel contamination.



PORTABLE FILES EXPEDITE WORK

Technical Files on Wheels Used to Serve O&R Alameda

Technical data, efficiently stored, can now be brought to the appropriate shop at O&R ALAMEDA.

The portable units, five feet long and 30 inches wide, furnish shop personnel with technical data. The combination workstand and bookcase is meeting a definite need. There are 41 of these units now in use at Alameda.

The original plan for the portable units was made by William Henwood; the actual design was the work of Jim Colusi of the O&R Planning Branch. He with Norman Goldfarb arranged for procurement.

AEL Develops Detector Measures Free Water in Fuel

The Aeronautical Engine Laboratory (AEL) of the Naval Air Engineering Laboratory at Philadelphia has developed a simple, low-cost detector that can be used on all aviation ships and stations to measure trace quantities of undissolved water in aviation fuels.

The Free Water in Fuel Detector, as it is called, has been field-tested and is very accurate and reliable. It was designed for use in conjunction with the Contamin-

ated Fuel Detector which was developed by AEL to detect and measure small quantities of solid contaminants dispersed in fuels.

The basic operating principle of the Free Water Detector is the reaction between any undissolved water and uranine to produce a yellow-green fluorescence under ultra-violet light. In practice, the unknown fuel sample is passed through a paper filter which has been coated with anhydrous uranine. After filtration the filter pad is examined under ultra-violet light and the concentration of free

Editor's Corner

TEXAN IN COMMAND. Marine Capt. Billy G. Phillips is assigned duty as liaison officer with the Army of the Republic of Vietnam (ARVN). His job consists of controlling two helicopters and six light observation aircraft; sometimes he coordinates flights of Marine Medium Helicopter Squadron 163, too. Because of his primary task as aircraft controller of the ARVN (pronounced "Arvin" by U.S. troops), the Texas-born captain has now been dubbed as CinCTWAF—"Commander in Chief, Teeny Weeny Air Force." Capt. Phillips, who is on his second tour in Vietnam, has logged more than 280 missions in combat as both a liaison "chief" and as a member of HMM-163.

Study in Contrasts. The USS *Haleakala*, a modernized ammunition ship serving the Seventh Fleet, had one of its "big-little" days on February 12. At dawn the ammo ship started passing rockets and bombs to the USS *Enterprise*, largest warship in the world. After severing its replenishment connection with the 85,000-ton carrier, the *Haleakala* then filled an order from the 65-ton USCG patrol boat, *Point Arden*. The Coast Guard ship's needs? Ice cream and .38 caliber ammunition.

WHERE'S THAT CUP? At the NAS Alameda control tower, the lost and adrift coffee cup has become extinct. Chief Aircontrolman John Caubre designed and built a device known as "Coffee Cup A-Go-Go." According to *The Carrier*, the station newspaper, the device looks "something like a computer. The boxlike machine has two dials, six lights, four small access doors, and the 'press to start' button." Coffee mess members punch out an electronic code, punch a second button and wait for a green light that signals arrival of their personal cup. The device also "swallows" the cup after use. Reports *The Carrier*, "Because it is so interesting to watch the machine in operation, cups are not left adrift so much." For nearly a year, Chief Caubre used his spare time to assemble the electronic parts and scrap lumber for the machine.

American Ingenuity. At the Marine base in Da Nang, Vietnam, Marines have constructed their own body-building "studio" with the available artifacts. A pair of ammo boxes fitted on the ends of a tent pole serve as barbells; sandbags are used as dumbbells for one-arm exercises and an overhead tent support pole provides a means for chin-up and pull-up exercises.

AVIATION SAFETY NOTE. The Royal Australian Air Force *News* reported the following statistics for the year 1964: Of 13 fatalities involving RAAF members, the causes of death were: motor car accident, eight; gunshot wound, two; drowning, one; accidental fall, one; aircraft accident, one.

Signs of the Times and Place. Like servicemen around the world, the sailors of Operation *Deep Freeze* are "sign planters" who aim good humored barbs at themselves. In the Antarctic, the men have given names to their living quarters and recreation centers. The Ross Hilton, for example, is the name of the only "hotel" in Antarctica; it is named for the Ross Ice Shelf. The management has stationery which boasts of the "traditional elegance of the deep deep, deep South" and invites visitors to frequent such places as the "Deep Freeze Rathskeller" (men only at luncheon), the "Shiver and Shake Room," the "Cold Compress Cocktail Lounge" and the "Barren Vista Room" (which overlooks very little).

Writing in *Naval Research Reviews* on "the Psychological Aspects of Antarctic Living," Lt. Paul D. Nelson, MSC, USN, said, "Each group attempts to build a little of 'home' into the Antarctic, be it in the form of a local Lion's Club or Burma Shave signs along a snow path. Such ingenuity, to provide that which seems to be missing, is

perhaps important for successful adaptation—adjustment with high morale and productivity. Were our own ingenuity in research half so successful, perhaps many of the issues which remain unknown or questionable to us would be clarified."

COSMIC DUST AND RE-UP PAY. Writing in the *El Toro Flight Jacket* about the publicized possibility of Marines rushing to action aboard missiles, Sgt. Ed Grantham made the following observations:

"Just how would you compute re-enlistment pay when a man serving on Venus re-ups for six? By actual miles or light years to his home of record?"

"How's a space Marine to keep his rifle clean, what with all that cosmic dust?"

"The mess cooks would have a real problem—just try to put chipped beef on toast while suspended in a weightless state."

"*Slow Me Down.*" The following prayer, by Chaplain Laurence E. Boyle, NAS MIRAMAR, was published in the station newspaper: "Slow me down, Lord. Ease the pounding of my heart by the quieting of my mind. Steady my hurried pace with a vision of the eternal reach of time. Give me, amid the confusion of the day, the calmness of the everlasting hills. Break the tensions of my nerves and muscles with the soothing music of the singing streams that live in my memory. Help me to know the magical, restoring power of sleep.

"Teach me the art of taking minute vacations—of slowing down to look at a flower, to chat with a friend, to pat a dog, to read a few lines from a good book. Remind me each day of the fable of the hare and the tortoise, that I may know that the race is not always to the swift—that there is more to life than increasing its speed. Let me look upward into the branches of the towering oak and know that it grew great and strong because it grew slowly and well.

"Slow me down, Lord, and inspire me to send my roots deep into the soil of life's enduring values, that I may grow toward the stars of my greater destiny."

LETTERS

Tips to Squadrons

Sirs: The Navy Tactical Doctrine Development and Production Activity would like to call a matter to the attention of all squadrons. When a new NATOPS manual for an aircraft is printed or a squadron picks up a new model, someone usually ensures that the commands affected receive the correct manuals. This is always a "one shot" affair. From then on, it is the command's responsibility to make sure that it is on the distribution list for further changes or revisions. To ensure prompt receipt of revisions and changes, each command must establish itself on the automatic distribution list for the required publications.

This is done by submitting either the NAVWERS Form 5605/2 to the Naval Air Technical Services Facility delineating the command's needs or writing a letter of request to the Officer in Charge, Naval Air Technical Services Facility, 700 Robbins Avenue, Philadelphia, Pa. 19111, Attn: PBPD.

To procure copies of existing NATOPS publications, submit a NavStrip Form DD 1348 in accordance with NAVSANDA publication 2002. Refer to section VIII for NATOPS flight manual and section X for NATOPS manual stock numbers. If in doubt about the stock number, provide the NAVWERS publication number for NATOPS flight manuals and the manual description for NATOPS manuals, for example, "C-131, Revision 2, with changes."

The effort put forth by NATOPS evaluators throughout the Navy is commendable. Reap the fruits of their efforts and get your NATOPS flight manuals while they are hot—off the press.

J. A. SWANK, CDR.

Counterclaim

Sirs: Your article, "Vertical Unrep: New Way For The Navy," appearing on page 11 of the November, 1965, issue of NA-NEWS, gives credit for accomplishing the first vertical underway replenishment to the USS *Shangri La*. CVS-39 makes claim to this first, to add to its many others.

A vertical underway replenishment occurred on March 2, 1965 in Task Group 83.2, and did involve the USS *Sylvania*, as well as two destroyers which were also replenished at the same time (though conventionally) but the carrier was a "Champ" called the *Lake Champlain*.

According to the *Champ's* records, approximately 50 tons of supplies were removed from the *Sylvania* to the aircraft carrier by two H-46 helicopters, supplying two loads every 90 seconds, or averaging one load every 45 seconds. The op-

eration began at 0810, but a complete average figure could not be kept for the entire load because the procedure was interrupted. The carrier received 351 cases of supplies over its expected load.

The *Champ*, which was operating off the Atlantic Coast at the time under specific directions to attempt the vertical underway replenishment, had completed its part in the transfer before noon. There was a total of 96 helo loads of supplies transferred.

Commander Brian Ziegler, SC, was in charge of his end on the *Lake Champlain*, and Ltjg. P. J. Ryan, SC, was his commissary officer on board at the time. Both men are still serving on her. Commanding Officer James C. Longino, Jr., has since been relieved by Capt. E. H. English, Jr.

DAVID E. SCHON, ENS.

† We only said that the transfer of stores from USS *Sylvania* to USS *Shangri La* "is believed to be the first all-vertical replenishment in Naval history."

VP-83 Reunion Scheduled

Sirs: VP-83 is planning to hold its 25th Anniversary reunion at Pensacola, Fla., September 15-16, 1966. We hope that all veterans in this outfit will plan to come. Interested persons may write me for details of the event.

R. R. FLUCK

319 Calhoun Avenue
Pensacola, Fla. 32505

Identification Requested

Sirs: Between April and October 1961, the USS *Chevalier* (DDR-805) made a search and rescued a pilot off the south-east coast of Japan.

At that time, I took color movies of the recovery. I would now like to forward them to the pilot, but I do not know his name or his squadron.

If anyone recalls this incident and can supply the pilot's name and current address, I will appreciate it very much.

MICHAEL D. MATTHEWS

21460 Sheldon Road, #33
Cleveland, Ohio 44142

Calling Midway Veterans

Sirs: I am completing a book about the Battle of Midway and would like very much to get in touch with any participants. If any of your readers can help, I would greatly appreciate hearing from them. Letters reach me at 25 East 38th Street, New York, N. Y. 10016.

WALTER LORD

NAVAL AVIATION FILMS

Among the latest motion picture films released by the Film Distribution Division, U.S. Naval Photographic Center, the following should prove of particular interest to personnel in Naval Aviation:

MN-10062 (unclassified) *CVA Shipboard Organization*. Organization structure, chain of command of attack carriers. Examination and purpose of each department. 19 minutes.

MN-10232 (unclassified) *DASH—Drone Antisubmarine Helicopter*. Background history of submarine and antisubmarine warfare during World Wars 1 and II. Origin of DASH. Attack problems developed and solved. 30 minutes.

MN-9877 (unclassified) *Aircrew Thermal Stress*. The problem and solution for clothing airmen so they can perform efficiently in normal flight and be prepared for survival situations. 23 minutes.

Instructions for obtaining prints of newly released films are contained in OPNAV Instruction 1151.1C.

The following films have been declared obsolete: MN-8495A *Aircraft Recognition—F4D Skyray*; MN-9121. *Radar and Weather—A Team for Action*; MV-9604 *Spatial Disorientation in Flight*.

MARINES AND HELOS

NA-NEWS is grateful to the following Marines for the photographs that comprise this issue's "center spread" on pages 19, 20.

SSgt. R. W. Savatt

Cpl. J. M. Morales

LCpl. A. B. Halstead

LCpl. Mark Lookbaugh

Pfc. D. E. Marsh

A-7A Ahead of Schedule Plant Tests Prove Satisfactory

The Navy Preliminary Evaluation of the A-7A was completed three weeks ahead of schedule.

Test pilots from NATC PATUXENT RIVER made 27 flights in the light jet attack plane during the two-week evaluation at Ling-Temco-Vought's plant at Dallas. They reported over-all satisfaction with the results. The A-7A is designed to update the Navy's carrier-based light attack inventory.

Additional testing and a comprehensive training program for technicians, maintenance men and pilots will be conducted by the contractor before delivery of the first A-7A's this fall. The first planes will go to the Navy Board of Inspection and Survey, Patuxent River, and to Combat Readiness Air Wings for pilot training.



One of the oldest Phantom squadrons on the East Coast, VF-102 claims to have been the first to fly the Phantom from the Enterprise and the America. The squadron is home-based at NAS Oceana and currently aboard the America operating in the Mediterranean. Its X. O., Cdr. R. E. Loux, became the C. O. this month when he relieved Cdr. Max K. Morris.



SPREAD YOUR WINGS . . .



NAVAL AVIATION
NEWS

Each Navyman—whether serving aboard ship, ashore, or winging across the oceans in a long-range aircraft—has the opportunity to advance in rate. All it takes is initiative, the will to “spread one’s wings” and start a program of individual study. See your station, ship or squadron Education Officer today.