

NAVAL AVIATION NEWS



J. CHURCHILL



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COVER—The Mid-Atlantic Air Museum's R4D, 1983 Grand Champion Warbird, shows VR-2 Naval Air Transport Service markings during a recent flight near the museum's home field of Middletown, Pa. In the right seat at the controls is copilot Jan Churchill. Next to her is pilot Russell Strine. The photograph was taken by staff photojournalist and associate editor JOC Kirby Harrison, using a 200mm lens from the open cockpit of a PT-19 flown by Ed Hoak.

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"VRC — Wings Between Ship and Shore" is about CODs but it's no fish story. It's about squadrons that are like airborne couriers. They bring the high-priority goods home to carriers at sea wherever they may be, page 4.



The Med's VOD Squad got a new name and a new aircraft. No longer VR-24's RH-53D Det, it is now HC-4 flying new CH-53E *Super Stallions*. A real powerhouse, the CH-53E can lift nearly its own dry weight. That means it'll be doing a lot of "Heavy Hauling in the Med." See page 8.



R4D Trivia Quiz: How many designations/names were given to the R4D? What significant operations in Naval Aviation history did the R4D support? How many years did the R4D serve in the Navy and Marine Corps? In how many wars did the R4D fly? Find out in "The Resolute R4D," page 10.



The Marine Corps can't seem to keep the *Bronco* down. Designed for gun-fire spotting, air control, medevac and other missions, it has proven capable of operating from LHA decks. What next? That's why the *Bronco* is the "OV-10 Combat Workhorse," page 18.



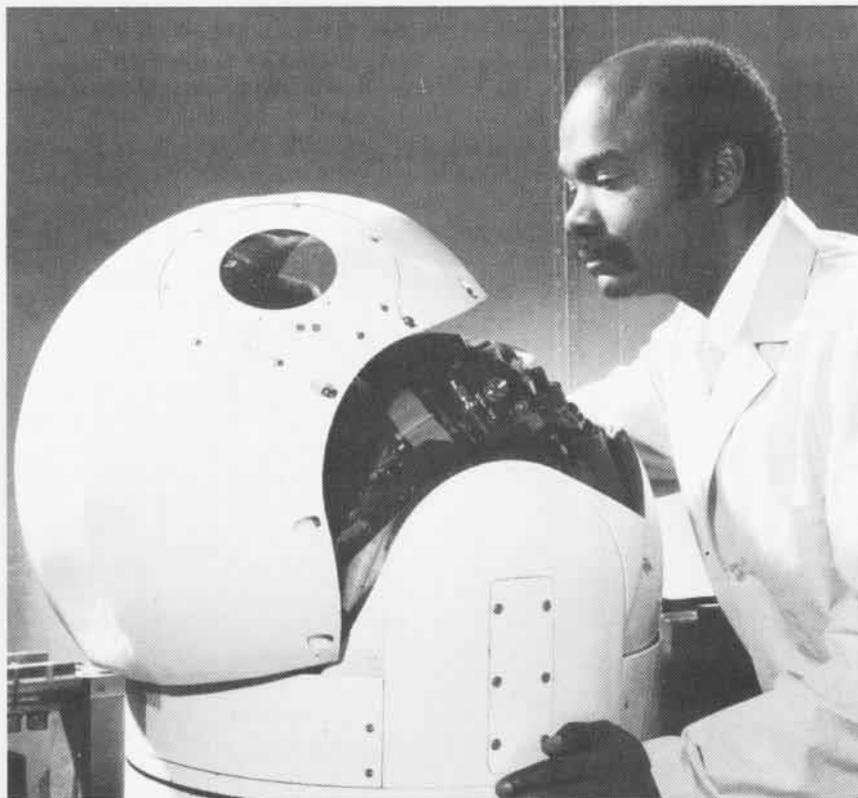
Have you ever wondered who keeps track of all the parts needed to keep naval aircraft operating at "day one readiness"? ASO does it all. With people, computers and determination, ASO is "Getting the Most for the Buck." Story on page 24.



Parachutes are great lifesavers from the time a pilot ejects to the time he hits the water — then it quickly becomes a liability. After entering the water, getting rid of it is paramount. That's why "Seawars Can Save Lives," page 26.

Detecting and Ranging Set

Hughes Aircraft Company



The giant Pac-Man look-alike that appears to be confronting Hughes Aircraft Company technician Freeman Lyons is actually an improved turret for an electro-optical system used by the Navy's A-6E *Intruder*. The system is the detecting and ranging set, a combination laser and infrared device that enables the aircraft to see and attack surface targets shrouded by darkness, smoke or haze. A new clamshell design reduces the length of flat cable in the turret by 35 feet and gives quick access to the entire sensor package, significantly easing field maintenance. The device is in production at Hughes' Electro-Optical and Data Systems Group, El Segundo, Calif., and is scheduled for introduction in December 1983.

Helicopter Emergency Egress Lighting

The problem of finding the way out of a partially or fully submerged helicopter has been simplified by a program at the Naval Air Development Center, Warminster, Pa. After the final test phase is completed, the helicopter emergency egress lighting system will be installed in fleet aircraft. Its special lighting equipment, which is designed to function only in an in-water emergency situation, will assist in saving lives.

The system contains a string of light-emitting diodes that are encased in a flexible plastic tube. To designate exits, the tube is mounted around the inside of the window or door frame. A small rechargeable battery pack is attached to the airframe close to the lighting system, which weighs about five pounds. Switches, mounted on the pilot's instrument panel, arm the system during pre-flight check-out procedures. A sensor in the main rotor assembly turns the lighting system on when the rotors stop turning, as in an in-water crash. The yellowish-green glow of the lights guides crew members to the exits, allowing them to escape.



Tight and Low

Returning from a midmorning bombing mission, the young *Corsair* pilot eagerly signed on to replace a cancelled pilot in the night-scheduled, two-plane practice bombing pattern. By nightfall, thunderstorms in the local and target areas altered the planned mission to two individual round-robin instrument training sorties. On the first leg, the pilot executed one TACAN and two GCA approaches, and then proceeded to home plate.

Weather at home field was 400 scattered, 1,200 broken, 2,500 overcast, with zero visibility in heavy thunderstorms one mile east of the field. The initial ACL approach to runway 27L was downgraded to a surveillance approach due to no radar lock-on in heavy rainstorm. With no visual contact, the pilot leveled at ASR minimums (360 feet, 1 mile), continued inbound and executed a missed approach. Passing the eastern field boundary, the pilot acquired visual contact and requested a turn downwind for a VFR approach. The tower consented, and advised the pilot to keep it tight to maintain visual runway contact.

The pilot turned downwind, climbed to 600 feet at the abeam position, was given clearance to land on runway 27L, and was advised of GCA traffic to runway 27R. In the approach, the A-7E appeared to overshoot, creating a potential midair with GCA traffic on 27R. The tower directed the A-7 pilot to wave off and advised him to keep it low to avoid a midair with the other aircraft now on GCA climbout.

He again climbed to the 600-foot abeam position, was cleared to land on 27L, and advised of a second aircraft on GCA final to 27R. Tower personnel lost sight of the A-7 just beyond the abeam position where it apparently entered a thundershower. Approximately five to six seconds later, they observed a large fireball as the aircraft crashed just beyond the 90-degree position.





Grampaw Pettibone says:

Jumpin' Jehoshaphat! What another needless waste of valuable man and machine! This young lad's anxiousness to go VFR right back into the goo he had just exited is bewildering. He obviously thought he could turn inside of it. And, in old Gramp's opinion, the tower's advice to keep it tight and keep it low may have just been the icing on the grim reaper's cake. Whether it was inattention, disorientation, or the pilot intentionally attempted to descend under the weather is of little consequence. The tally is just the same and just as fatal.

Phantom Fatality

A highly experienced F-4 pilot with over 2,500 hours in type and his junior RIO who had recently joined the squadron met for a missile brief with the pilot of an OA-4M aggressor aircraft. Rules of engagement for ACM were covered, noting the minimum altitudes of 5,000 feet AGL for high-air-speed and 10,000 feet AGL for low-air-speed maneuvers. The crews referred to a map of the operating area and noted terrain elevations in excess of 3,000 feet MSL. The minimum altitudes for high/low airspeed flight were not converted to MSL altitudes. The fighter and aggressor crews then attended a combined brief for all mission aircrews.

Immediately following the mission brief, the *Phantom* crews ate a quick lunch and filed the necessary flight plan. Because of the impending take-off time, they conducted a modified briefing without the NATOPS briefing guide, which did not include departure/spin recovery procedures. High and low airspeed minimum AGL altitudes were again briefed, but no conversion to MSL altitudes was discussed. Somewhat rushed, the *Phantom* crews manned their aircraft and took off three minutes ahead of schedule. Once in the operating area, the *Phantom* climbed to 10,000 feet

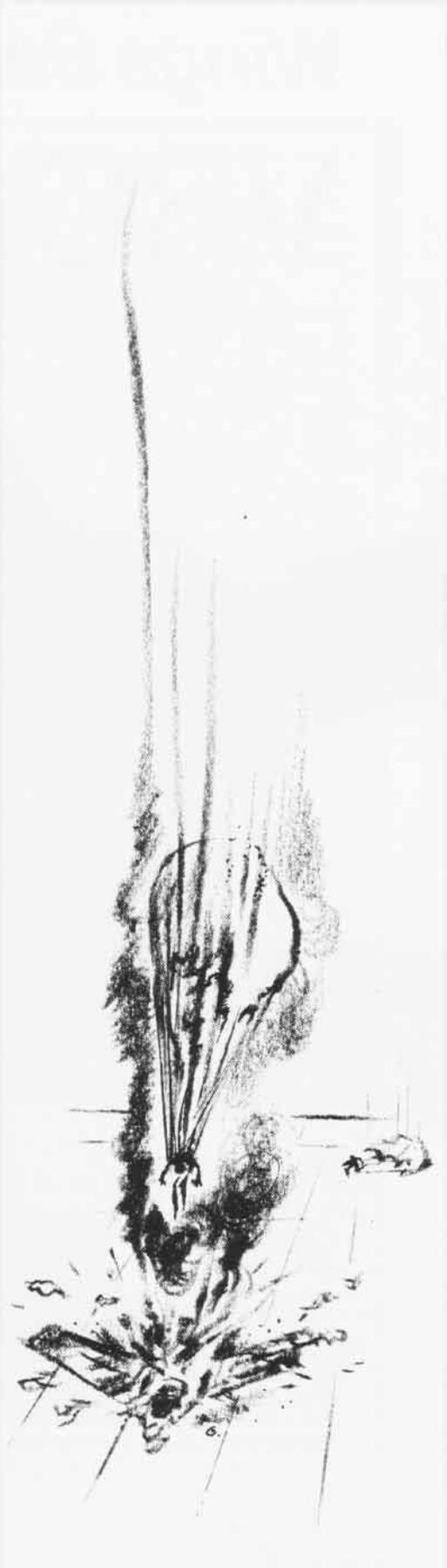
MSL for defensive maneuvering against simulated SAM threats, and was engaged by the aggressor OA-4M. With that, the simulated air battle was on.

During the exercises, the *Phantom* initiated a turn causing it to depart controlled flight, at which time the RIO called out near-zero airspeed. The drag chute was deployed and power set between 90 percent and military. The RIO continued to call out airspeeds. The pilot told the RIO to stand by. The *Phantom* stabilized at 80 degrees nose down, with increasing airspeed but with insufficient altitude for recovery. The pilot initiated command ejection at 6,000 feet MSL (3,800 AGL). The *Phantom* impacted the ground in an 80-degree dive at 210 knots and burst into flames under the descending crew. The RIO used the four-line release system to steer clear of the aircraft fire and landed about 500 feet from the crash site, but the pilot's parachute fabric melted due to the intensive heat from the flaming wreckage. The pilot sustained fatal injuries from the unretarded fall.



Grampaw Pettibone says:

Great balls of fire! Another sad and unnecessary loss of an experienced aviator and valuable aircraft. This mishap didn't just happen, it was caused. Violation of NATOPS and rules of engagement are just part of the problem here. While aggressiveness is desired and is a virtue in a fighter pilot, the urge to press the fight without adequate airspeed or altitude must be suppressed. It's a mistake and often a fatal one as in this case. Had this crew been aware of their proximity to the ground when the aircraft departed, they would still have lost the aircraft, but both may have survived. The pilot's decision to stand by and delay his ejection in an effort to save the aircraft cost him his life. This was another tragic case of "a highly experienced, best pilot in the squadron" pressing it too far. Gents, when your aircraft is in a situation with no recovery possible, then get out! As the well-known 1961 safety poster stated, "Know When to Go. THEN GO!"



Wings Between Ship and Shore

VRC

Evening settles on the ocean like a soft, gray blanket. Aboard the giant aircraft carrier, there is a brief respite from the day's frantically paced launch and recovery operations. By comparison, it is now almost quiet. Air-



A C-1 Trader from VRC-40 turns onto final approach during carrier landing practice near the squadron's home base at NAS Norfolk. The Trader has become, over a 20-year period of yeoman service, synonymous with the term "carrier onboard delivery."

craft crews and flight deck personnel have stood down temporarily, taking advantage of the lull. Amid the regular hum of ventilator fans, a new sound rises to intrude into their thoughts of showers and sleep.

A stubby, twin-engine aircraft buzzes low down the starboard side

and banks left into the landing pattern. Within minutes the word has passed from the flight deck to the mess deck, from the mess deck to the engine room, and the engine room to after-steering.

"The COD's coming in."

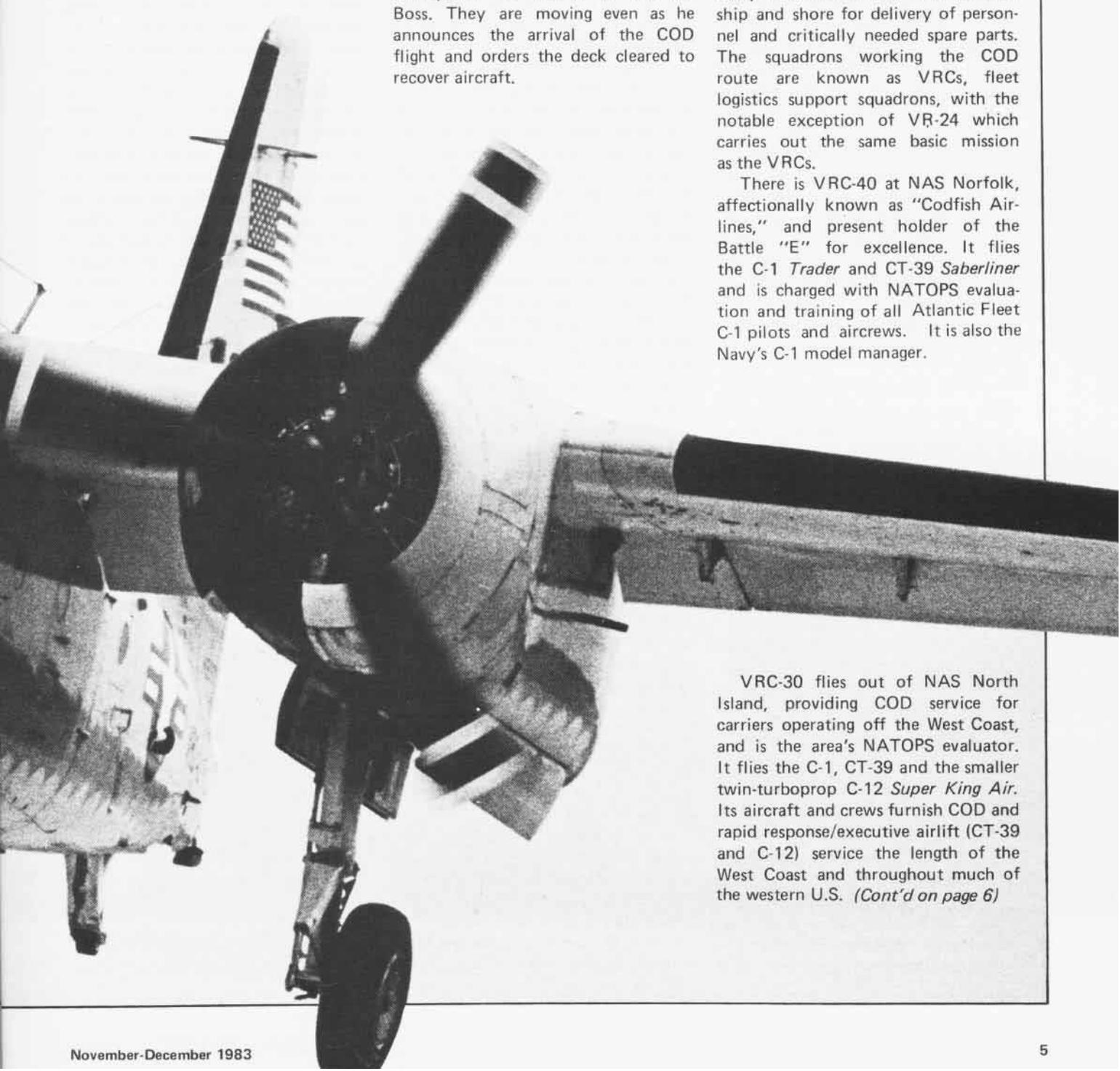
Topside, the flight deck crew has anticipated the desires of the Air Boss. They are moving even as he announces the arrival of the COD flight and orders the deck cleared to recover aircraft.

On the flight deck, in the crew's mess, the engine room and after-steering, showers and sleep are forgotten. The COD means mail. Suddenly home is minutes away, riding the wings of the COD.

COD is an acronym for carrier on-board delivery and, in addition to mail, it means a vital link between ship and shore for delivery of personnel and critically needed spare parts. The squadrons working the COD route are known as VRCs, fleet logistics support squadrons, with the notable exception of VR-24 which carries out the same basic mission as the VRCs.

There is VRC-40 at NAS Norfolk, affectionally known as "Codfish Airlines," and present holder of the Battle "E" for excellence. It flies the C-1 *Trader* and CT-39 *Saberliner* and is charged with NATOPS evaluation and training of all Atlantic Fleet C-1 pilots and aircrews. It is also the Navy's C-1 model manager.

VRC-30 flies out of NAS North Island, providing COD service for carriers operating off the West Coast, and is the area's NATOPS evaluator. It flies the C-1, CT-39 and the smaller twin-turboprop C-12 *Super King Air*. Its aircraft and crews furnish COD and rapid response/executive airlift (CT-39 and C-12) service the length of the West Coast and throughout much of the western U.S. (Cont'd on page 6)



AMEAN Tim Burton of VRC-40 swings down from a CT-39 Sabreliner after a postflight check. Fleet Logistics Support Squadron ground support personnel comprise a broad cross section of talent as a result of the variety of aircraft assigned.



At NAS Cubi Point in the Philippines, VRC-50 provides COD service for carriers operating in the vast expanse of the Western Pacific and Indian Ocean. To meet the needs of fleet units operating at great distances from land, the squadron flies the C-2 *Greyhound* with a range approximately 500 miles greater than that of the C-1 *Trader's* 1,050 miles. And it is the only VRC unit flying the twin-turboprop US-3 COD configuration of the S-3 *Viking*, with a range greater than 2,000 miles. Perhaps the most diverse of the fleet logistics support squadrons, VRC-50 also operates a number of C-130 *Hercules* heavy-lift aircraft.

VR-24 not only flies the normal COD service with *Greyhounds* and *Traders* out of NAS Sigonella, Sicily, but has a permanent detachment at the naval base at Rota, Spain, that includes C-130s. It also has available CT-39 *Sabreliners* and, until the activation of the heavy-lift HC-4 helo squadron last spring at Sigonella, was flying the only RH-53D *Sea Stallions* in the Med to augment logistics support for ships in the Mediterranean. VR-24 is scheduled to phase out its RH-53Ds in early 1984.

The most recent reorganization to affect the VRC community is the ongoing integration of the COD aircraft and crews previously assigned permanently to each carrier. According to Captain E. W. Albrecht, support aircraft coordinator for the Deputy Chief of Naval Operations (Air Warfare), the West Coast-based carriers' COD aircraft and personnel already have been reassigned to the various VRCs. Only the carrier *Midway*, home-ported in Yokosuka, Japan, has retained a permanently assigned COD

and crew. Transfer of the CODs now assigned to East Coast home-ported carriers is expected by the end of 1983.

In the future, says Capt. Albrecht, "Carriers going through work-up for a deployment, or on local operations, will be assigned a COD aircraft for that period from one of the nearest VRC squadrons. Carriers deployed to the Mediterranean will have a COD assigned for that period from VR-24, while those deploying to the Indian Ocean or Western Pacific would have their COD service assigned from NAS Cubi Point." Carriers going into the Indian Ocean are now using the US-3 and *Greyhound*. VRC-50 has four of these COD *Vikings* available, and a fifth and sixth are expected by mid-1985.

Replacement of the aging C-1 *Traders* is something many VRC pilots and crews look forward to with mixed relief and appreciation. The first C-1A was delivered to the Navy in 1955. It has been a workhorse logistics bridge between carrier and shore since that time. In fact, the C-1A assigned to the carrier *Forrestal* at the time this was written, BuNo 136748, was among the first *Traders* delivered by Grumman in 1955.

In recent years, however, there have been problems compounding simple aging of the airframes. The commercial price of the aviation gas used by the C-1's reciprocating engines has gone from \$.60 a gallon to the present price of \$2. And with the proliferation of turbine engines, the more highly refined, high-octane aviation gas is becoming more difficult to obtain. In fact, the carriers no longer carry aviation gas as a standard item.

There is also the increasing difficulty in finding personnel with experi-

ence and training on the reciprocating engines. Officials note that the last class of reciprocating engines Aviation Machinist's Mates (ADRs) was graduated from the Naval Air Technical Training Center in August 1979. Allowing for the normal personnel attrition rate, says one of VRC-40's leading chiefs, this means that the experienced recip engine people are now reaching the upper petty officer levels, "leaving us with a shortage of experienced wrench turners who don't have to be trained from step one."

The first of a new, multiyear purchase of C-2A *Greyhounds* will be going to VR-24, says Capt. Albrecht. The squadron can expect the first replacements for their venerable C-1 *Traders* to begin arriving in the summer of 1985. "Throughout the Navy, this is a multiyear buy that will involve a complex program of shifting aircraft until all the C-1s are phased out and the C-2s fully integrated into the fleet," says Albrecht. For VR-24, presently involved in logistics support of the U.S. naval forces off Lebanon, the replacement *Greyhounds* can't come too soon.

However, points out Captain Thomas Ryan, Commander Fleet Tactical Support Wing One in Norfolk, "The optimum answer is an aircraft designed from the ground up as a COD. We simply can't afford the optimum. In the interim, we need a good COD today and the C-2 fills that need.

"In the meantime, we are encouraging the present high level of aircraft availability, and are looking forward to a smooth transition from the C-1 to the C-2."

Pilots, aircrews and ground support people in the VRCs are quick to point

out that despite the publicity given the C-1 and its replacement, they are not the only aircraft assigned. At VRC-40, they are particularly proud of their CT-39 pilots and crews. With only two *Saberliners* in the inventory, the pilots and aircrews alternate weeks as alert crews. It was Lieutenant Commander Keith Strickland who received the call this summer when VRC-40 was contacted to scramble a CT-39. A diving accident off the Georgia coast, not far from Jacksonville, Fla., had left one man in critical condition and desperately in need of a portable life support unit. The only such unit available was at the Naval Hospital in Bethesda, Md.

"I climbed right out of a shower and into my flight suit," recalls Strickland. "Within 45 minutes after receiving the call, we were in the air and, 25 minutes later, were waiting at Andrews AFB (NAF Washington, D.C.) when they drove up with the unit. We made NAS Jacksonville in an hour and a half and the helo was already turning when we pulled up there.

Some people don't fully understand the advantages of the CT-39s, says Strickland of the fast, twin-engine jet. "But when you need it to carry a donor organ for a dying dependent

child, or for rapid delivery of high priority people or cargo, nothing else will do. Rapid response is the key."

Many VRC pilots come to the community from the training command. Most of those responding express a liking for the variety of detachments and deployments that afford an opportunity to travel, and almost without exception point to the importance of providing a vital link between the fleet at sea and the shore establishments. The C-1 pilots point out that there is sufficient carrier flying. Lieutenant Junior Grade Mark Finney has over 1,000 hours in the *Trader* after just 22 months with VRC-40, and the lion's share of carrier traps. "As a junior pilot, you get more traps here than any place you could go," he says emphatically.

There is occasional excitement, even at VRC-40, where they have had 25,350 traps without mishap in the last 10 years and are the 1983 winners of the Chief of Naval Operations Safety Award.

The excitement for Lieutenant Commander Lin Hutton came en route to NAS Pensacola, Fla., from the training carrier *Lexington* with eight passengers aboard. Shortly after launch, a warning light illuminated, indicating a problem with the nose

gear. She and copilot Lieutenant Junior Grade Bill Sandgren went through the NATOPS recommended procedures with no luck. The nose gear was stuck.

After a low altitude pass at NAS Pensacola to get visual confirmation of the problem, she circled to burn down fuel and reduce the chance of fire on landing. "I shot a straight-in approach, touched down on the main gear and held the nose up for about 4,500 feet," she remembers. "When the elevator couldn't hold the tail down anymore, I let it settle on the nose."

When partially extended, the nose-wheel is at an angle, and when it touched the runway while still moving, the plane pulled to the left and rolled to a stop in the grass just yards off the runway.

"It wasn't the kind of landing you want to make," says the sandy-haired pilot who rides a bicycle on errands around the squadron's NAS Norfolk base. "But everything considered, it wasn't really too bad, was it?"

Her matter-of-fact response is that of many of those in the VRC community, where professionalism is a fact of life and pride something that goes along with it. "After all," says Lt.Cdr. Strickland, "that's what we're paid for, isn't it?" ■



A CT-39 Saberliner from VRC-30 is near touchdown at NAS Miramar. The Saberliner is the VRC answer to requirements for rapid response/executive airlift.

CH-53E: HEAVY HAULING IN THE MED

By Commander Howard A. Wheeler

The *VOD Squad* — the RH-53D *Sea Stallion* helicopter logistics detachment of Sigonella-based Fleet Logistics Support Squadron Twenty-Four (VR-24) in the Mediterranean theater — will soon be replaced with a new squadron and a new aircraft. The squadron is Helicopter Combat Support Squadron Four (HC-4), which was officially established last May 6 and is based at NAS Sigonella; and the aircraft is the spanking new Sikorsky CH-53E *Super Stallion*.

Under the command of Commander Ronald A. McDaniel, HC-4 will be responsible for heavy-lift vertical onboard delivery (VOD) support of the Sixth Fleet. McDaniel, who has considerable experience with Mediterranean helicopter logistics, was commanding officer of VR-24 until May 5, when he was relieved and literally walked across the hangar to assume command of his new squadron the following day.

The concept of using heavy-lift helicopters to serve the logistics needs of Navy ships in the Mediterranean is an idea that has been in development since 1975. The Navy's newest and most capable heavy-lift helicopters at the time were the RH-53Ds that were flown exclusively by Helicopter Mine Countermeasures Squadron Twelve (HM-12) home-ported at NAS Norfolk. They were renowned for clearing the mines from Haiphong Harbor in 1973 and the Suez Canal in 1975. The aircraft's primary mission has always been airborne mine countermeasures (AMCM), but at the completion of Operation *Nimbus Stream* in 1975 — the final Suez Canal mine-sweeping operation — it was decided to test the feasibility of using the *Sea Stallions* in the logistics role in the

Mediterranean before they returned to Norfolk. McDaniel was the officer in charge of that first VOD detachment. The experiment worked and the small detachment earned the praise of Admiral David H. Bagley, CinCUSNav-Eur at the time.

HM-12 continued to provide VOD



PHC Chet King

services off and on in the Mediterranean during the years that followed when its AMCM detachments were deployed to the European theater. Finally, Sixth Fleet helicopter vertical onboard replenishment was assumed by a special RH-53D detachment established under VR-24 on May 31, 1978. During its first mission in support of *Nimitz* only a day after being formed, it moved 472 passengers, 23,700 pounds of mail and some 600,000 pounds of cargo in a five-day period. The RH-53Ds were borrowed from AMCM assets. With the introduction of the CH-53E, the RH-53Ds will be returned to the AMCM community.

The CH-53E *Super Stallion* is ideally suited to the VOD mission in the Mediterranean because of its impressive lift capability, long endurance and maintainability. Compared to the RH-53D *Sea Stallion*, the new fleet

workhorse CH-53E with its third engine, larger main rotor system, added seventh main rotor blade and modification of the tail rotor, can carry three times the payload of its predecessor. At a maximum gross weight of 73,500 pounds, it has a mission payload of 32,000 pounds. It can lift nearly its own dry weight. With a typical internal cargo load of 10,000 pounds, it has a range of approximately 800 miles. It also will have the remarkable capability to externally lift tactical fleet aircraft like the F-14 *Tomcat* directly from a carrier deck to shore staging sites.

According to Lieutenant Commander Bruce Russell, deputy assistant project manager for the H-53 programs at the Naval Air Systems Command, "[The *Super Stallion*] can carry heavier loads farther than any previous logistics helicopter in the fleet."

The CH-53E is equipped with UHF,

Above, HC-4's new CH-53Es taxi in upon arriving at NAS Sigonella last September. The same flight (above right) conducts farewell flyover at NAS Norfolk before departing Tidewater aboard *Inchon* in August. Cdr. James Scurria (lower right), HC-4's X.O., briefs the flight before takeoff.

VHF, FM and HF communications, and TACAN, ILS and Omega navigation systems.

The *Super Stallion*, which was officially delivered to the Navy last March in a ceremony at HM-12 — the replacement training squadron (FRS) for both the RH-53D and the CH-53E — will be fully operational with the new HC-4 VOD squadron in December 1983 in Sigonella, according to Commander James F. Scurria, HC-4's executive officer.

As part of the first phase of build-



JOC Kirby Harrison



JOC Kirby Harrison

ing up the squadron, Scurria loaded the five new CH-53Es aboard *Inchon* at Norfolk early last August for the trip to their future home in Sicily.

HC-4 will have six CH-53Es assigned.

For several months, the initial cadre of pilots, aircrewmembers and maintenance personnel had been trained at HM-12 at NAS Norfolk in preparation for the establishment of HC-4. According to Scurria, "All the pilots and crewmen were day and night ship qualified and day and night air-to-air refueling qualified," before they left to go to Sigonella. The latter is a significant capability for the *Super Stallion* because it dramatically increases its radius of operations when airborne tankers are available.

According to Scurria, "Morale has been extremely high in the unit." With only 45 enlisted maintenance personnel of the new squadron's allowance of 226, the availability of the five CH-53Es in Norfolk far exceeded expectations. HC-4 will have 29 officers assigned, 26 of whom are pilots.

HC-4 may be familiar to many fleet pilots because it was the designation used by a utility squadron that

became HSL-30 in March 1972. Scurria is quick to point out that the establishment of the new HC-4 was not a reestablishment of the old squadron. Unlike the previous HC-4 (which was known as HU-4 prior to July 1965), today's is a totally logistics squadron.

Russell says that HC-4 is only the beginning of the Navy's plans to increase use of the CH-53E for medium-range logistics of outsized cargo. The program calls for HM-12 to eventually have *Super Stallions* for FRS training and its East Coast VOD commitments. HC-1 at NAS North Island will be augmented by CH-53Es for West Coast logistics alongside its venerable CH-46 *Sea Knights*. And, eventually, a *Super Stallion* unit will be positioned in WestPac in support of fleet operations in that area.

All this means that Navy ships at sea will be receiving more mail, and more cargo and vital parts, more reliably than before with the CH-53E *Super Stallions* on the job. ■

The Resolute R4D

The place was Vietnam in 1966. The aircraft was a tough, middle-aged Navy veteran officially called the C-47 Skytrain. Unofficially, she was the Gooney Bird. To many who knew her best, she was and still is called by her original designation — R4D.

They were flying over a jungle heavily populated with Viet Cong when the port engine began to smoke. "The engine's cutting out on us," Lieutenant Commander Carl R. Parrick, pilot, told his copilot. "We're losing altitude." Parrick, a veteran pilot of 10 years, radioed for assistance as the C-47 slipped underneath the broken cloud layer and dropped steadily.

The aircraft had taken off from Saigon one hour before with 26 people: 17 Navy enlisted men, four officers and a crew of five. They were en route to Da Nang.

Fearing he might have to ditch the plane in the jungle, Parrick ordered all the passengers to load their weapons: 45-caliber pistols, M-16 semi-automatic rifles and Thompson submachine guns.

With the jungle coming up quickly below them, Parrick was contacted by a C-130 transport plane, which vectored him to a remote airstrip 10 miles away. Parrick found the field and brought the smoking Gooney Bird down slowly. It touched down and rolled to a shaky stop. Everyone was safe.

"I had a feeling we'd be okay," recalled Parrick, now retired and living in Middletown, Pa. "The Gooney Bird was one of the best planes ever built and I was confident that even if we had to crash-land, everything would turn out okay because it was sturdy and built for punishment."

Parrick flew the C-47 for the U.S. Navy Headquarters Support Activity in Saigon in 1966. The plane was one of two such aircraft which were part of a bush airline called "Air Cofat," an airlift support activity that flew all branches of the service, refugees, Vietnamese troop reinforcements and cargo. Because the Gooney Birds flew in all the battle zones, most had to land on dirt strips carved out of the jungle or the marshy delta country.

"We flew up to 10 hours a day and operated out of 20 different airstrips in South Vietnam," said Donald R. McGarrigle, a retired lieutenant commander who flew with Air Cofat in 1966. "We landed on any field that had a 2,000-foot stretch, whether grass, dirt, rock or asphalt."

Both Parrick and McGarrigle agreed that this could not have been done without the valuable services of the Gooney Bird. "It might be slow and cumbersome but there were a lot of things you could do with it that you couldn't do with many other aircraft," said McGarrigle.

"It was as good a plane as we could have gotten," added Parrick, "a real workhorse and quite reliable."

When this sea story unfolded, the R4D Gooney Bird had been in the naval service for more than 20 years and had already contributed dramatically to Naval Aviation's legacy. She retired from service in Naval Aviation this year and this is her story.





Two classics. An R4D making a passenger stop at an airfield somewhere in Brazil and a "woodie." The cargo version of the R4Ds hauled everything from petrol to penicillin during the war.

By Jan Churchill

Pilots in WW II called her the *Old Workhorse*. The British called her the *Dakota*. But she is best remembered in the Navy as the Douglas R4D *Gooney Bird* — known in the civilian community as the DC-3. Under various redesignations she performed her mission in the naval service well, from 1941 until July 1982. (See following story, "Marines and the Gooney Bird.")

While the DC-3 was most successful in civilian passenger service, the twin-engine aircraft was really never well suited for the convenient handling of bulky freight or for carrying heavy payloads. Nonetheless, she carried out her logistics mission proudly, since no other satisfactory transport had been developed at the time she began her military service. The DC-3 was flyable under almost any conditions and was easily maintained.

The Bureau of Aeronautics purchased 30 R4D-1s (with 1,200-horsepower Pratt & Whitney R-1830 Twin Wasp two-row, 14-cylinder radials) on September 16, 1940, under an Army Air Corps contract for 545 C-47 *Skytrains*. Most of the Navy's WW II R4D transports came from Army contracts. The first of these was received by the Navy in early 1942, preceded by two R4D-2s diverted from Eastern Airlines in 1941.

To support the logistic needs of the fleet and naval facilities worldwide, the Naval Air Transport Service (NATS) was created December 12, 1941. Captain C. H. "Dutch" Schildhauer was the guiding force behind NATS and was designated officer in charge when the Navy accepted his concept of a naval air logistics service following the attack on Pearl Harbor. VRs 1, 2 and 3 were established soon after. Rear Admiral Frank D. Wagner became the first director of NATS in 1942.

Then Secretary of the Navy Frank Knox gave NATS the mission of providing the Navy with a scheduled transport operation, using existing aircraft and later those going into production. Accordingly, NATS developed along the lines of a commercial airline by taking advantage of available airline expertise, modified to meet the demands of wartime military operations.

Captain I. E. "Gus" Sommermeyer, USNR(Ret.), who came into the Navy from United Air Lines to command VR-1, recalled recently, "It was the greatest show on earth." He commented that NATS ran like an airline with regular schedules and crew changes to keep the aircraft moving.

The R4D delivered men and the tools of war in virtually every theater in WW II. Many of her WW II operations were top secret to prevent the enemy from knowing the direction of troop movements.

She was worth her weight in gold on NATS' shorter hops around the stepping-stone islands of the Pacific and in rugged Alaskan flying because she could land on rough surfaces and get in and out of tight spots. Extra fuel tanks were often placed in the navigator's compartment to increase the range for over-ocean flights.

The crew consisted of the plane commander, first pilot, navigator for long over-water flights, radio operator and flight orderly. Navy pilots were trained at NAS Atlanta, Ga., the American Airlines school at Fort Worth, Texas,

and at the Pennsylvania Central Airline school at Roanoke, Va. From these establishments, they went to NATS school at Olathe, Kan., to be checked out as copilots and eventually plane commanders. Pilot selection for the transports was made from those names toward the last third of the alphabet and these were sent to transport school.

The first NATS operational squadron, VR-1, was established March 9, 1942, with four R4Ds, 27 officers and 150 enlisted personnel at NAS Norfolk. Its primary mission was to supply the Navy along the Atlantic Coast and in the Caribbean in support of antisubmarine patrols.

A month later, VR-2 was established at NAS Alameda with one R4D, six officers and a handful of enlisted men. Service was inaugurated to connect the West Coast with the VR-1 termination point in Corpus Christi, Texas.

It was not until July 15, 1942, that NATS transport service was provided for inland naval activities. At that time VR-3 was established in Kansas City, making its first transcontinental flight on September 6, 1942.

During WW II, R4Ds flew the world, covering routes from Seattle to the Aleutians; San Francisco to the Southwest Pacific, Central Pacific, Australia and New Zealand; from New York to England, Iceland and Bermuda; and from Miami to the Caribbean, South America and Africa.

In the Pacific, R4Ds followed the invasion forces, landing on battered airstrips with supplies and troops, making a quick turnaround, and evacuating the wounded. During "red" alerts, unarmed R4Ds making evacuation flights often had to be given fighter cover.

For 27 months until February 1945, MAG-25 flying R4Ds ran the transport service that became famous as South Pacific Combat Air Transport (SCAT). Besides hauling every necessity from mail to torpedoes, the unarmed planes often flew great distances over water to deliver critically needed supplies and personnel. Operating a frontline ambulance service in combat zones, they made history with their large-scale evacuation of the wounded.

Although the service was administered by the Navy, the SCAT aircraft were manned by Marine and Army Air Force pilots. The transports were often accompanied by Navy or Army fighter planes.

When the Japanese increased their activity in the Aleutians, the Douglas transports extended their routes to bases on Kiska, Attu, Adak and Agattu. The subzero temperatures required special cold weather operating procedures, as the crews learned how to winterize the rugged transports and also themselves with attire modeled after the clothing worn by the Eskimos. Operating in temperatures as low as 50 degrees below zero, the planes came through with flying colors.

The R4Ds kept the supply lines to Alaska open in spite of the severe flying conditions. In January 1945, they ran a shuttle from Fairbanks to Point Barrow, moving a quarter-million pounds of important cargo. At Barrow, they landed on a 5,000-foot runway often covered with ice and snow, where snow blowing at more than 10 knots across the runway created the optical illusion that the runway was moving around. Depth perception was difficult in such whiteout conditions.

The R4Ds even landed at Umiat, a desolate Seabee camp



Looking like cigars lined up in a box, the familiar shape of the Douglas R4D is easily seen in this assembly-line photo taken during its heyday.

where the airstrip was a frozen lake, 3,000 feet long and 125 feet wide, and had to be conditioned by tractors. A million pounds of cargo was flown into the area in one three-month period. For the Navy, all of this was a forerunner of the R4Ds' great performance in the Arctic and Antarctic.

In contrast to their operations in the frozen reaches of Alaska, the R4Ds also ran a shuttle in the far Pacific, with the main terminal point in the Philippines at Nichols Field, Manila. Here, the jungle jumpers winged their way from Samar to Leyte, Mindanao, Palawan and Mindoro. This Pacific aerial transport was called the *Toonerville Trolley*.

The record for the longest R4D trip on one engine is held by Major "Skip" Kimball, USMC, flying for SCAT and taking a load of cargo from Pearl Harbor to San Diego. At the halfway point, the R4D lost power in the left engine. Kimball feathered it while the crew jettisoned the cargo. They continued to their destination — a distance of 1,100 miles — on one engine.

In 1946 the R4Ds went to Antarctica. Operation *High Jump* was one of the largest polar expeditions ever organized, with 13 ships and some 4,000 men. During 1946 and 1947, the expedition photographed the Antarctic coastline and interior.

In preparation for the project, an airfield was staked out at Little America by Seabees, many of whom had helped build wartime airstrips in the South Pacific. The plan of operations called for an airstrip 5,000 feet long by 150 feet wide with runway lights, and surfaced with pierced planking to make it possible for the planes to take off on wheels rather than on skis. However, since they ran out of time and could not install the planking, the planes would have to operate on skis.

On January 25, 1947, just a week after the Seabees started, the airfield was ready to receive the planes from the aircraft carrier *Philippine Sea* nearly 700 miles to the north.

Six R4Ds had been loaded on the carrier a month earlier after hurried testing of the skis. Only two of the pilots had previous carrier experience. Unlike Doolittle's

B-25 launch off *Hornet* in 1942, less deck space was available for the takeoff run in this instance because the R4D's 95-foot wing span (greater than a B-25's) made it necessary to start from a point forward of the superstructure. A shortened takeoff run had to be made diagonally across the forward part of the deck.

Admiral Richard E. Byrd was a passenger on the first plane to launch on January 29, 1947, piloted by Commander William M. Hawkes. With the aid of JATO (jet assisted takeoff bottles attached to the underside of the R4D), the *Gooney Bird* lifted off with a steep angle of climb that left only 50 feet of deck to spare. Six hours later, Hawkes set his R4D down on the snow at Little America, approximately 600 miles from the carrier. Eventually, the rest of the six planes landed safely at Little America.

From February 4 to 21, 1947, flights went on, for a total of 260 hours in the air. When flying terminated for the season, the six R4Ds had to be left at the Little America base. They never flew again but they wrote their share of aviation history, and paved the way for Operation *Deep Freeze* in the 1950s and the earlier Arctic expedition known as Operation *Skijump*.

Operation *Skijump* was the Navy's Arctic Science Research Group program which provided the U.S. with more adequate knowledge of the Arctic region and gained infor-



The *Philippine Sea* returns from WestPac in mid-1952. Six R4Ds (similar to those shown) took off from her deck on January 29, 1947, during Operation High Jump.

mation on oceanographic conditions for the future use of that area for naval operations.

During *Skijump II*, an R4D established a record for the northernmost ice landing of a ski-equipped aircraft, in March 1951. The expedition found it necessary to practice touch-and-go landings to test the ability of the ice cap to support the 29,000-pound flying frigid laboratory. The research group discovered much about ice characteristics and learned to distinguish old, thick ice from new or skim ice, from the air. This greatly enhanced safety in landing on the ice.

The party of eight Navy officers and two civilian oceanographers used Point Barrow, Alaska, as their base of opera-



A VX-6 R4D taking off from Byrd Station, Antarctica, using JATO rocket boosts, in December 1962.

tions, flying to a point 820 miles south of the North Pole where they landed their ski-equipped R4D. They conducted their research for two months in temperatures varying from 25 degrees below to 30 degrees above zero.

Deep Freeze activities began in 1955, but the R4Ds did not play an active part until 1956 during *Deep Freeze II*. In October 1956, R4D BuNo 12418, one of four assigned to Air Development Squadron Six (VX-6), nicknamed *Que Sera Sera*, made history by being the first aircraft to land at the South Pole. She was piloted by Lieutenant Commander C. S. "Gus" Shinn, with Captain William "Trigger" Hawkes as copilot.

Rear Admiral George Dufek, commander of the task force, was on the history-making flight as were Captain Douglas Cordiner, commanding officer of VX-6, and Lieutenant John R. Swadener, navigator. The crew consisted of Petty Officers John P. Strider and William Cumbie, Jr.

No one knew what sort of landing surface to expect. It was a tricky situation due to the 9,500-foot altitude, the extreme cold and the weight of the aircraft. Shinn circled first to survey the landing area and then set up for the landing. The R4D bounced a little on the snow-ridged surface and came to a stop. It was 8:34 a.m., GMT, on October 31, 1956, and the temperature was 58 degrees below zero.

The R4D was on the ground for 49 minutes, during which Shinn kept the engines running to avoid a freeze-up. But the problem was not with the engine when it came time to take off. As it turned out, the skis were frozen to the ice. Four JATO bottles failed to break the plane loose. Shinn quickly fired the remaining 11 and shortly thereafter *Que Sera Sera* emerged from a swirl of flame, smoke and

Jan Churchill, pictured here smiling from the cockpit of the Mid-Atlantic Air Museum's R4D *Gooney Bird*, is aviation editor for the *Military Collector's Journal* and a writer who specializes in military aircraft. Churchill, who has a military transport license and is the museum's curator, flies the R4D to air shows, military base open houses, etc., every weekend between May and October. The plane was recently named best transport and Grand Champion Warbird at the Experimental Aircraft Association international convention in Oshkosh, Wisc. Churchill says flying the *Gooney Bird* is a terrific experience and describes the historic 40-year-old airplane as the "queen of yesterday's air fleet."

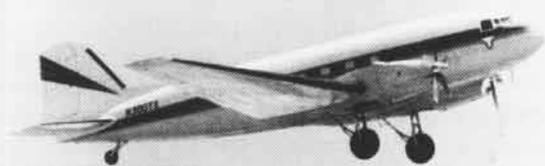


snow as Shinn completed the difficult takeoff.

Que Sera Sera continued to serve the Navy, making her last landing on December 4, 1958, on ice-covered McMurdo Bay, thus ending an illustrious four-year tour in the *Deep Freeze* program. She had logged some 10,131 hours in the air. Eventually, she was shipped back to the United States, secured to the deck of *Wyandot* (AKA-92). Today, *Que Sera Sera* is on display at the Naval Aviation Museum at NAS Pensacola.

Deep Freeze III, 1956-57, saw the introduction of two Douglas R4D-8 transports to the line, which the Navy had obtained in 1951. They were the Navy version of the Super DC-3. This modernization program by Douglas provided the Navy with a 90-percent new aircraft. The result was that 100 R4Ds were converted to Navy R4D-8 specifica-

The seemingly ageless Douglas DC-3 is once again getting a new lease on life. The United States Aircraft Corporation located at Van Nuys Airport, Calif., is currently converting the WW II-vintage DC-3 from piston engines to turboprops. In addition, it is adding improved hydraulics, fuel and pneumatic systems; new instrumentation and revised control systems; and new high-efficiency propellers. Nearly 11,000 DC-3s and their military counterparts, the C-47 *Skytrains*, were turned out by Douglas Aircraft between 1936 and 1945. Some of these aircraft were again modernized by Douglas in the 1950s. Today, it is estimated between 2,500 and 3,000 DC-3s are still in operation around the world.



tions, following the prototype which was acquired by the Navy. Some became R4D-8Ls (Antarctic), R4D-8Ts (navigator trainers) and R4D-8Zs (staff transports). Some R4Ds operated in Korea while the -8Ls operated on skis in Antarctica. They were eventually redesignated the C-117D (R4D-8), LC-117D (R4D-8L), VC-117D (R4D-8Z) and TC-117D (R4D-8T), and served the Navy into the mid-1970s.

LC-117D (BuNo 17092) made the last flight of a Douglas-type transport in Antarctica on December 2, 1967. The ambitious program in support of the International Geophysical Year (1957-58) and later *Deep Freeze* operations could not have been completed without the yeoman-like service of the faithful *Gooney Bird*. The R4D was the principal means of transport in Antarctica and, despite its limitations, it gave the U.S. Navy a flexibility that was necessary for the successful completion of the scientific programs. To commemorate its contribution to the first decade of *Deep Freeze*, its nicknames were given to geographic features in Antarctica such as Dakota Pass, R4D Nunatak and Skytrain Ice Rise.

As mentioned before in the early days of Vietnam, 1965-66, Navy Headquarters Support Activity, Saigon, operated two *Skytrains*, together with a U-16 *Albatross* and a C-45 Beechcraft, as a bush airline known as Air Cofat. Its mission was airlift support for the Naval Advisory Group, a component of the U.S. Military Assistance Command, and military advisors and Seabee teams. While not really combat aircraft, these planes operated on dirt strips and often drew enemy fire.

By 1968, one C-47 nicknamed *Bouncing Bertha* was the only *Skytrain* assigned to the Naval Support Activity in Vietnam.

The final flight of the Navy's last *Gooney Bird* was made on July 1, 1982, when BuNo 50821 flew from NAS China Lake to NARF Pensacola. The crew consisted of the pilot Lieutenant Colonel Scott Smith, USMC (now retired); copilot Lieutenant Commander Byron Dieckman, USNR; and crew chief AMS1 William Porter, USN. It is now on display at the Naval Aviation Museum in Pensacola, Fla. ■

Marines and the Gooney Bird

By Major John Elliott, USMC(Ret.)

The venerable Douglas R4D brought beans and bullets to the Marines during WW II in the Pacific and continued to do so until mid-1982.

It was not until late in 1941 that VMJ-2 (later redesignated VMJ-252) received the Marine Corps' first R4D at Ewa airfield adjacent to NAS Barbers Point, Hawaii. With this official initiation into the Marine Corps, the R4D was destined to see its share of combat in the Pacific.

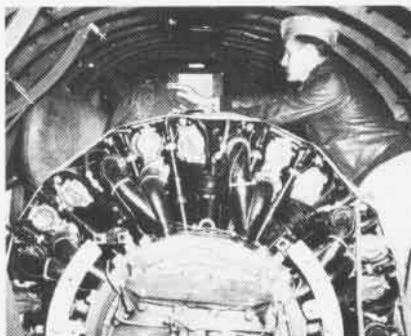
During the attack on Pearl Harbor, VMJ-252 lost nearly all of its aircraft — an assortment of R3Ds, *Ducks* and others. Among the replacements received were R4Ds. Many had been DC-3s acquired from various commercial airlines whose flights had been greatly curtailed by wartime restrictions. The civilian seats and cabin interiors were stripped out and large cargo doors built in to replace the passenger type. Although designated a utility squadron, with the addition of the R4Ds, VMJ-252 began to expand its commitments and function more as a transport squadron. Besides its routine logistics missions, it also supported Marine paratrooper training.

Prior to and during the Battle of Midway, VMJ-252 flew personnel, ammunition and other vital supplies to the island. In support of the Marine fighter squadrons on the other islands in the region, the squadron also expanded its transport commitments to such places as Funa Futi in the Ellice Islands, American Samoa and Fiji.

By August 1942, the United States was ready to go on the offensive in the Pacific. To help cope with the logistics involved, on November 24, 1942, the South Pacific Combat Air Transport Command (SCAT) was formed to take up where the NATS (see "The Resolute R4D" on page 11) left off. SCAT, which was commanded by a Marine Corps Naval Aviator, flew R4Ds on hundreds of sorties into Guadalcanal and routinely evacuated 18 to 23 litter cases on



Above, C-47 over Kaneohe Bay, Hawaii. Below, engine being loaded aboard SCAT R4D.



each return flight. Cargo carried by SCAT R4Ds included barrels of aviation fuel, food, ammunition, medical supplies, mail or most anything that could be put aboard. Some supplies were often delivered by parachute which necessitated flying low through small arms fire to insure successful drops.

On particularly hazardous flights, SCAT aircraft were frequently escorted by Navy or Army Air Force fighters. On the other hand, SCAT R4Ds led fighter pilots on delivery flights over long stretches of open ocean because the fighters were not equipped for lengthy overwater navigation.

At some undetermined time during the course of the war in the Pacific, the R4D picked up its famous nickname *Gooney Bird*, which it shares with the wandering albatross found on many Pacific islands. And, like the albatross with its heavy body and long wings, the R4Ds were often seen waddling into the air for long flights. One account says that the nickname was given to the albatross because during the construction of the run-

ways at Midway during WW II, the stubborn birds had to be forcibly removed from their nests.

After WW II, the Douglas Aircraft Company decided to develop a replacement for the DC-3. After several attempts to design a new transport, they decided the best approach was to redesign the DC-3 itself. The fuselage was lengthened by 79 inches; larger vertical and horizontal tail surfaces



C-117 on flight line.

were fitted; and the engines' nacelles were redesigned to accommodate the familiar Wright R-1820 engines. The Navy version was called the R4D-8, later redesignated the C-117, as it is known today.

While the Marine transport squadrons after WW II were equipped with larger aircraft, such as the R5C *Commando* and the R5D *Skymaster*, many R4Ds continued to serve as group, wing and station aircraft. Perhaps the most unusual assignment was that of the 1st Marine Air Wing Headquarter's R4D-8 during the Korean conflict. This aircraft was painted flat black on the undersurfaces and had a launching chute fitted through the cargo door for dropping target illumination flares during VMF(N)-513's night ground support missions.

After a long, illustrious and at times heroic career in Naval Aviation, the last Marine C-117 (BuNo 50835) made its final flight on June 28, 1982, from Okinawa, Japan, to NAS Cubi Point, Philippines. It had served at MCAS Iwakuni, primarily on logistics runs between Korea, Okinawa and the Philippines. The crew of this last flight was Colonel S. F. Shea, USMC, commanding officer of MCAS Iwakuni at the time, pilot; Captain L. C. Lawson, USMC, copilot; and AK1 Ron Mellon, USN, crew chief. It is destined for display at the Marine Corps Aviation Museum at Quantico, Va. ■



First introduced in the mid-thirties, the Douglas DC-3 rapidly became the world's airliner. When this country began its major military aviation buildup after WW II had started in Europe, the DC-3 was picked as the major transport aircraft since it was ready to be produced in large quantities and newer designs required further development.

Thousands of DC-3s were built during WW II, mainly as C-47 cargo planes for the Army, from which came most of the Navy's R4Ds. Late in the war a few, including the very last delivered, were configured as airliners and delivered as C-117s.

After VJ Day, many of the surplus military DC-3s became airliners or cargo liners with airlines of all types and sizes, while larger and far more advanced transport planes were being engineered for the major airlines.

Looking at the situation, Douglas concluded that modernizing the DC-3 based on rebuilding existing airframes would be an attractive business. Most of the smaller airlines that were operating over shorter routes could not afford the new transports, but could trade in their DC-3s for a more efficient version. In the late forties, the Super DC-3 was born and, recognizing military C-47/R4D inventories, the Super C-47 and Super R4D were also proposed.

The first Super DC-3, converted from a surplus C-47, flew in June 1949. With new, higher powered Wright R-1820 Cyclone engines, lengthened fuselage, larger tail surfaces for low-speed controllability, new design outer wing panels, aerodynamically cleaner nacelles and strengthening of the rest of the airframe, it offered a considerable increase in cruising speed, range and payload.

While there was airline interest, the conversion cost was too high for the smaller airlines and only a few Super DC-3s were sold commercially. However, the Air Force was interested in the Super C-47 and purchased the prototype

C-117D

By Harold Andrews



modified with cargo door and cargo floor as the YC-129 for evaluation. It was subsequently redesignated YC-47F, recognizing its C-47 beginning, but the Air Force also turned to newer designs for its transport needs.

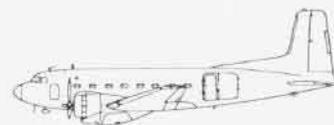
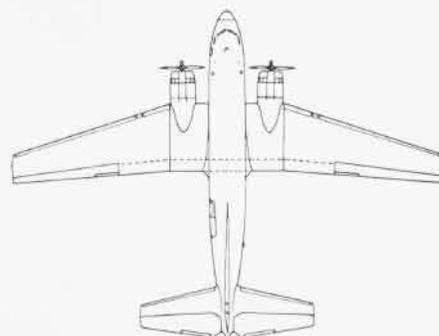
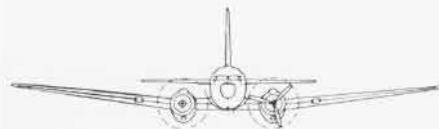
The prototype was transferred to the Navy, which became the single major customer for the Super DC-3, turning in 100 of its R4D fleet to become, along with the prototype, R4D-8s. While largely new, the 100 were procured as conversions and retained their WW II five-digit bureau numbers. Delivered starting in late 1951, the R4D-8s served the Navy worldwide in general transport duties with the Navy and Marines. Some saw action during the Korean War operations. Like the earlier R4Ds, the -8s were also assigned to special duties for which they were suitably modified. A handful received ski undercarriage and other necessary changes to serve in Antarctic operations as R4D-8Ls. Others became navigation trainers, R4D-8Ts, and a few executive transports as R4D-8Zs. In the early sixties, when Navy aircraft were redesignated into the standard DOD system, the basic differences between the R4D-8s and the earlier R4Ds resulted in the -8s becoming C-117Ds rather than part of the C-47 series — the prototype gaining its fourth military designation while remaining essentially the same configuration. In the late sixties, the LC-117Ds (R4D-8Ls) were withdrawn from Antarctic operations, while the basic models went to war again, in South-east Asia.

In the seventies, the C-117Ds began to be phased out, including the trainers (TC-117Ds) and executive transports (VC-117Ds). No longer in use in the naval service, the Navy's last C-117 was struck from the records on July 2, 1982. ■



C-117D

Length	67'9"
Height	18'3"
Span	90'
Gross weight	31,000 lbs.
Maximum speed	270 mph
Range	2,500 mi.
Engines	Two Wright R-1820-80
	1,475 hp
Crew	3



C-117B



OV-10 Combat

The OV-10 *Bronco* is a jack-of-all-trades kind of aircraft, incorporating aerial reconnaissance, light attack support and utility features into a single, unique plane. The first aircraft designed specifically for counter-insurgency operations, it offers mission flexibility tailored to the tactical requirements of the Marine air-ground team in close-quarter battlefield action, paradrop missions, gunfire spotting, helicopter escort, visual reconnaissance, light close air support and forward air control (airborne), and medical evacuation.

It is designed to fill the performance gap between jets, which are too

fast for some aspects of the modern battlefield and helos which may be too slow or vulnerable for some missions.

With its short takeoff and landing (STOL) capabilities, rough-field landing gear and low-support requirements, it can be based where the action is, for rapid support of ground units. The armament system permits a mix of various weapons, including a 20mm gun pod, four 7.62mm machine guns, rockets, miniguns, stores, and optional wing stations for AIM-9 missiles. The cargo bay can carry 3,200 pounds of cargo or four to five combat-equipped Marines — or two litter patients with an attendant.

The pilot and the aerial observer sit in tandem and have at their fingertips complete air-to-air and air-to-ground communications with strike aircraft, ground forces, tactical air control centers and direct air support centers.

The OV-10D Night Observation System (NOS), which became operational in 1979, is the latest version of the OV-10. This modification provides a 45-percent increase in engine horsepower, new tactical systems and wing store stations with external fuel tanks. Takeoff, climb and single-engine flight performance parameters are markedly improved with the updated engines.



Workhorse

The nose-mounted AN/AAS-37 forward looking infrared (FLIR) sensors, with the capability to locate, track and laser-mark targets in adverse battlefield visibility (smoke, haze, camouflage) and in night operations, add a new dimension to battlefield reconnaissance and attack missions.

The FLIR's main purposes are to extend visual reconnaissance at night in support of ground forces and to designate targets for laser-guided ordnance. FLIR picks up infrared radiation from objects and transforms it into electrical impulses which are displayed as distinguishable black and white images on the video screens in

the cockpit — a five-inch screen before the pilot and a nine-inch screen in front of the observer. With this system, enemy activity can be recorded on video tape during the blackest hours of the night. In fact, the blacker the night, the brighter the images that appear on the cockpit displays.

Provision for carrying extra fuel has increased the *Bronco's* maximum ferry range by 500 nautical miles to an unrefueled distance of 2,100 nautical miles for all OV-10s.

The pilot and aerial observer have in the *Bronco* an excellent platform to perform their mission. Its ability to lumber along flying low at 84 knots

over the scene of hostile action or deliver ordnance at 325 knots makes the OV-10 a menace to any enemy it may encounter.

The Marine Observation Squadrons flying the *Bronco* today are VMO-1, New River, N.C.; VMO-2, Camp Pendleton, Calif.; reserve squadron VMO-4, NAS Atlanta, Ga.; and a continuing detachment in Okinawa from VMO-1 and VMO-2.

The OV-10 first became opera-

Bronco coming down where the action is.



tional during the Vietnam conflict. Six twin-engine *Broncos* arrived at Marble Mountain Air Facility south of Da Nang in Vietnam on July 6, 1968, and were delivered to VMO-2, the first operational OV-10 squadron. The *Broncos* were mission ready and, within three hours after their arrival, launched to begin the job they were sent to do. It was the beginning of a career marked by versatility and highly diversified operations.

Broncos were also flown by VMO-6 in Vietnam. The squadron received the aircraft in November 1968 and flew them until it redeployed almost a year later. Eighteen *Broncos* were also acquired by the Navy from the Marine Corps and were flown by Light Attack Squadron Four (VAL-4) in support of riverine operations in the Mekong Delta.

VMO-5, which received the OV-10 in February 1968, was the Marine Corps training unit at Camp Pendleton, and VMOs 1, 4 and 8 flew the OV-10 in the States.

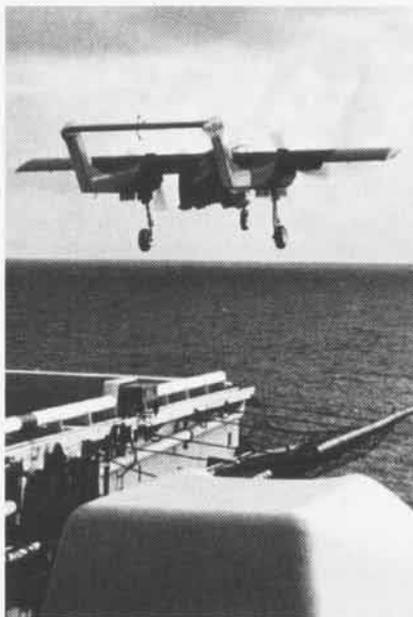
March 22, 1971, saw VMO-2's last combat flight in Vietnam as the squadron transferred to Camp Pendleton. Today, VMO-2 flies the OV-10A and D models on the West Coast, and has been developing new tactics using the night observation system.

VMO-1 is the East Coast OV-10 squadron, flying out of New River. It was the first squadron of its kind in the Marine Corps, activated as Marine Observation Squadron 155 in 1943 to conduct artillery air observation.

VMO-1 received its first *Bronco* on July 22, 1968, and was responsible for transitioning pilots into the multi-engine OV-10. The pilots not only had to be able to fly the OV-10 in combat but also control fixed-wing aircraft, coordinating them with the movement of helicopters and troops on the ground, while having to call in artillery fire as well as naval gunfire. Flying in the rear seat was the aerial observer whose experience with ground troops complemented the pilot's knowledge of the aircraft. The result was the true air-ground team effort.

VMO-1 today is still transitioning pilots and training aerial observers, in addition to taking part in other missions such as the Presidential Task Force war on drugs. Last April, VMO-1 personnel began flying out of Homestead Air Force Base in Miami

on drug surveillance sorties. Their job was to aid the U.S. Customs Air Support Branch in detecting, intercepting and tracking drug smugglers. Customs officials conducted the actual chases and made the apprehensions. During the 40-day assignment, VMO



PH3 Dan Kennedy

crews completed 90 sorties in the OV-10Ds. They assisted Customs officials in seizing over 6,000 pounds of marijuana, 832 pounds of cocaine with a street value of \$75 million, five suspect aircraft and two boats, and in making 13 arrests.

As its ongoing mission has expanded, the OV-10 has demonstrated its ability to meet the changing demands that have been made upon it.

During a NATO exercise in the North Atlantic in October 1980, four VMO-1 *Broncos* were placed aboard *Saipan* (LHA-2) and then launched from the 820-foot deck of the amphibious assault ship. They were the first OV-10s to take off from a naval ship smaller than an aircraft carrier. The operation went smoothly despite rough seas and the fact that this was another *Bronco* first.

Several months later, VMO-2 made the first West Coast launch, flying an OV-10A and an OV-10D from *Belleau Wood* (LHA-3). It was the first ship-board launch of an OV-10D.

Other demonstrations of *Bronco* capabilities followed. In May 1981, VMO-2 flew two OV-10Ds off *Okinawa* (LPH-3), a smaller amphibious



PH3 Richard D. Smith

At left, *Bronco* zooms off flight deck of *Nassau* and, above, touches down during feasibility tests. Below, OV-10s were previously craned aboard amphibious assault ships preparatory to launching.



Courtesy of North American Rockwell

assault ship with a flight deck a full 200 feet shorter than *Belleau Wood's*. Twelve minutes after launch, the planes were operating from a remote site, demonstrating their ability to be on station in minutes after receiving an alert.

While on a three-week deployment off Puerto Rico, about the same time as the *Okinawa* launch, VMO-1 personnel with two OV-10Ds proved the ability of the planes to laser-designate targets for ship-launched, laser-guided projectiles. The OV-10D's laser guidance system enhanced accuracy and first-round-hit capability.

In June 1982, six OV-10s of

VMO-2 were craned aboard *Belleau Wood*, where OV-10 deck launches were integrated with the launch cycles of helicopters and AV-8s during tactical evolutions. It was the first time the *Broncos* had performed search and patrol missions along with scouting and reconnaissance for naval ships, showing their ability to work well with an amphibious force.

Three months later, five OV-10s of VMO-1 launched from *Nassau* (LHA-4) during her North Atlantic cruise, as part of an operation to augment an Atlantic Fleet exercise.

Because of restricted flight deck space, launches were the only maneuvers performed by the *Broncos* aboard the amphibious assault ships until this summer when feasibility tests

were held, August 1-3, to determine the ability of the OV-10 to land aboard decks smaller than those of aircraft carriers. An OV-10A, flown by a Naval Air Test Center pilot, touched down on *Nassau*, marking the first time a *Bronco* had made a landing aboard an LHA. It was the first of 31 full-stop landings and 34 touch and go's, designed to test the feasibility of recovering OV-10s aboard LHAs.

A mobile visual landing aid system was placed on the starboard side of the ship so that the tests would not interfere with operations on the flight deck. One of the difficulties was the narrowness of the deck, since there is very little space between the superstructure on the starboard side and the edge of the ship on the port side.

Without the tailhook found on carrier aircraft, the *Bronco* had to depend solely on its STOL capability. Landings were made, using only brakes and reverse propeller thrust.

The success of the feasibility tests suggests an expanded role for the OV-10 aboard amphibious assault ships, since it has shown that it has what it takes to adapt to the changing amphibious mission. ■

Naval Aviation News wishes to thank the following sources for the information used in this article: VMO-1, VMO-2, USS *Nassau* and MCAS New River Public Affairs Office.

He Logged 1,100 Hours Last Year

By Jeanne Gray Hamlin

Lieutenant Dan Hartwell, from HT-18, NAS Whiting Field, Fla., received the Navy Helicopter Association's (NHA) 1982 Pilot of the Year Award last April at its 35th annual symposium in Norfolk. The award recognizes a rotary-wing pilot's sustained career performance and involvement in the civic community. The award was presented to Lt. Hartwell by a former Navy pilot, Paul M. Thayer, Deputy Secretary of Defense.

The award was based on Lt. Hartwell's record of 1,144 accident-free flight hours in the TH-1E/L *Huey* and flight syllabus completion rate of 98 percent. During the past year he completed 40 course hours at Troy State University, maintaining an "A" average and subsequently receiving his masters degree. In addition, he found time to become involved in the community by working with the Escam-

bia County Search and Rescue Team and competing in the Marine Corps marathon.

His excellence did not go unnoticed by the Training Command either. Lt. Hartwell was also chosen as Training



Air Wing Five's 1982 Instructor of the Year. Selection was based on two jobs that he held, assistant flight leader and operations/administration officer. Since coming to HT-18 in December 1980, Lt. Hartwell has logged 1,900 hours as a flight instructor.

Regarding the prestigious award, Lt. Hartwell was quick to point out that "being selected for this honor represents more than an instructor's accomplishment. It is also the combined efforts of maintenance personnel, ground support personnel, and even students and squadron mates that make the instructor of the year." Previously, Lt. Hartwell had received two Instructor of the Quarter Awards, for the second quarter of 1981 and the second quarter of 1982.

He is currently assigned to exchange duty with the Marine Corps at First Marine Brigade, Fleet Marine Force, Pacific, Hawaii.



The Ryan Twins Naval Aviation's Package Deal

Story and Photos by JOC Kirby Harrison



The change of command was in some ways a Ryan family affair. Included in the photo are (4th and 5th from left) father and mother, Norbert Sr. and Rose Ryan.

This is a story of John and Norbert Ryan, fraternal twins whose idea of "togetherness" is only slightly less than the idea of a man shaking hands with himself. After 37 years, they are still dressing alike. Only, now they dress in the uniform of a Naval Aviator. And, against all odds, both presently command nearly identical long-range patrol squadrons.

The tale begins in the small town of Mountainhome, in Pennsylvania's scenic Poconos, where the Ryans grew up as part of a close-knit family. Being athletic, they played on their high school basketball team and, like most twins, they shared much in common. After graduation, the point at which many twins part company, the Ryans stayed together.

"I guess we always thought of ourselves as a package deal," says John. After high school, the brothers had received several basketball scholarship offers and had considered going to Princeton. They went Navy instead.

"We liked the image projected by the Naval Academy," explains John, "and we were looking for a challenge and a good education. The Navy offered both, and we took 'em up on it. It wasn't a difficult decision."

Norbert agrees. In fact, aside from very competitive games of tennis or one-on-one basketball, they apparently seldom disagreed. At an interview, when one brother seemed at a loss for words, the other would take up the train of thought. In voice and physical mannerisms, they are easily mistaken for one another. When a reporter wondered aloud how to tell one from the other on his tape-recorded interview, John's solution was typical.

"We're interchangeable," he suggested. "It doesn't matter if Norb said it. I'd have said the same thing anyhow."

The Ryans recall their years at the Naval Academy with pleasure, especially plebe year and the guarded hazing that is part of the traditional initiation into military life. One favorite demand of upperclassmen is that the plebe return to his room, change into an entirely different uniform, and report back in an impossible amount of time. John remembers one upperclassman who, aware of twin brother Norbert, would make prior arrangements and then call another upperclassman over to witness the incredible speed with which this particular Ryan plebe could change uniforms and report back.

He would then order John or Norbert to return to his room, make a complete and complicated uniform change, and report back properly attired in an incredibly short time. "Norb or I, whichever he picked, would go running off and, just seconds later, the other would come casually trotting up in the right uniform. The

Backed by the national ensign, Cdr. Norbert Ryan addresses squadron and guests at the VP-5 change of command.

guy would just about fall over."

After graduation in 1967, it appeared that fate and the detailer had conspired to keep the pair together. Both completed flight training and both were assigned to VP-8 at NAS Brunswick for their first duty station.

It was during flight training that the Ryans had decided to go to the VP community, where they would fly the P-3 *Orion* as part of the Navy's most sophisticated aviation antisubmarine warfare (ASW) effort. It was just prior to an air show and a P-3 had arrived as part of a static display. "We both walked out to the plane at the same time," says Norbert. "We were struck by the fact that the guy who flew the plane was a lieutenant junior grade plane commander. Here was this big plane being flown by this young guy with two years in the Navy. We figured it couldn't be too bad if they were giving a young lieutenant junior grade all that responsibility."

The tour of duty with VP-8 was followed immediately by another identical set of orders, this time back to the Naval Academy for staff duty. It wasn't until they left that assignment that their paths finally parted. Norbert went to sea duty on the staff of Commander Carrier Group Six as aide and flag secretary to Rear Admiral John Dixon, and John was assigned sea duty as assistant navigator aboard the carrier *Nimitz*. "It was the first time in 28 years that we were really separated for any length of time," says John.

Asked if there is any truth to stories of psychic relationship between twins, both brothers deny ever experiencing such phenomena. They do admit to a closeness that perhaps transcends the usual family ties. But it is something they attribute simply to having spent the first 28 years of their lives together. According to John, when they are together, they don't really have to talk, since each seems to know instinctively what the other is thinking. "For example, I can tell you now that Norb is going to suggest that we go for a good run when we leave. I'll say that it's a good idea and we'll go for six or seven miles."

Smiling hugely, Norbert reaches behind his chair and brings out running

gear and shoes he had taken in to work before John's arrival at the interview. Both men broke into laughter at the verification of John's prediction.

Following the separate sea duty assignments, the twins were sent back to the patrol community, but this time to different squadrons. John went to VP-11 at Brunswick and Norbert to VP-5 at Jacksonville, both as executive officers of their respective units, and both slated for movement into command.

Selection as commanding officer of a patrol squadron is no small matter. With nearly 2,000 officers in a com-



Cdrs. Norbert (left) and John Ryan pose for photographers shortly after twin brother Norbert took over as skipper of VP-5 in ceremonies at NAS Jacksonville.

munity made up of 24 squadrons, odds are against any *one* individual being selected for command. The odds against twins commanding squadrons simultaneously are even greater. But the Ryans made it.

Despite being "not really interested in publicity on the Ryan twins," they are willing to submit to some questioning by a curious press and television media. "If it will help the Navy and the P-3 community, we're willing," explains Norbert.

The brothers are proud of being in the P-3 long-range patrol and ASW arena. They remember that when they started, "We were in the caveman age in terms of avionics and ASW gear."

"Now," says Norbert, "we've reached the point where we are the number one ASW force the U.S. has in going out long-range and finding submarines. In our minds nobody

can do the job better than the P-3 community."

It was John who was selected first for command of one of the P-3 squadrons and, according to him, it was the first time he was ever a step ahead of Norbert. "He always did everything first. He was even born 10 minutes before me. He got married first, and he always said he did things first so he could try it out and let me know if it was okay."

Norbert confirms this, adding that shortly after his own marriage, he had phoned John, telling him how much he enjoyed his new marital status. A short time later, he says, the "younger" brother called back to tell him he also had decided to get married.

Their wives, who also happen to bear an unusual physical resemblance to one another, are not exempt from the twins' sense of humor. According to Norbert, John will occasionally take advantage of the fact that their voices are so similar. "On flights down from Brunswick, he'll stop and call my wife, Judy, pretending to be me. He'll ask her what we're having for dinner. She'll tell him and it usually takes a few minutes before she realizes it isn't me."

The change of command ceremony in which Commander Norbert Ryan took over as skipper of VP-5 was, for the Ryans, a family affair. Not only were both twins present, along with their wives and children, but both their mother and father, two brothers and a sister were among the guests. The presence of their father, 61-year-old Norbert Sr., was especially gratifying. Just 17 days earlier he had undergone triple bypass heart surgery. "This was his goal, to be here," says Norbert. "That made it very special for all of us."

The pride Norbert Ryan, Sr., felt in his sons was obvious, reflected in the twinkle in his eyes and wide smile as the cake was cut at a reception following the ceremony. "I always told them to aim high," he told those around him in the cavernous hangar, filled with multimillion-dollar aircraft and hundreds of Naval Aviation officers and enlisted personnel.

"And they did," he added, looking around. "They sure did." ■



Commodore John H. Ruehlin

ASO Getting the Most for the Buck

By JO2 Timothy J. Christmann

It's the hub of Naval Aviation logistics support. With it, naval aircraft fly. Without it, naval aircraft wouldn't. The difference is that extreme.

The Aviation Supply Office (ASO) is the only aviation inventory control point (ICP) in the U.S. Navy. Based in Philadelphia, Pa., it is responsible for the identification, procurement, distribution and inventory management of all Naval Aviation materials.

"Our goal is to maintain the fleet in a posture of *day one readiness*," said Commodore John H. Ruehlin, ASO's commanding officer. "Ready today for action on a moment's notice."

It's a tough job, according to Robert P. Powelson, assistant operations officer. "Especially when you consider deploying and maintaining aircraft out in the far reaches of the Indian Ocean with long logistics pipelines. A lot of planning has to be done, and we have to make sure we have the right levels of support."

Besides supporting Naval Aviation, ASO supports other branches of the Armed Forces and also provides international logistics support for more than 1,700 aircraft in 35 countries.

In its ICP role, ASO manages 250,000 items (worth some \$7.5 billion) which are required as spare parts for the Navy's 5,500 aircraft.

Although its spacious red brick buildings look capable of holding thousands of aircraft spare parts, ASO doesn't physically handle them. Instead, new parts are purchased from manufacturers, and repairable components are repaired by Naval Aviation Rework Facilities (NARFs) or commercial vendors, then distributed to specific locations. The task of getting the right materials to the right squadron at the right time is ASO's

basic responsibility.

The Aviation Supply Office interacts directly and continuously in all echelons of the Naval Aviation community from the Chief of Naval Operations to the smallest LAMPS destroyer deployed at sea.

"We deal with systems commands, type commanders, air stations, MAGs, NARFs and many other activities to coordinate the diverse logistics function," said Como. Ruehlin. "We're in



a unique position of an *honest broker* in that we provide unbiased, non-parochial support to the fleet. Our large, experienced talent base gives us continuity in the logistics support effort."

ASO's biggest challenge is getting the most out of what it is buying with the dollars available, according to Lieutenant Commander William Maguire, ASO's SH-60 *Seahawk* program manager. "We have to make sure we're not only buying the right parts to insure that certain weapons systems achieve their operational availability goals, but that we're buying within our operating funding controls. The buying we do at ASO today will provide the support needed in the fleet tomorrow," he said.

In addition to funding, the forecasting of spare parts requirements is an equally challenging part of ASO's function.

"Forecasting reports drive the funding process," said Lieutenant Commander Robert M. Shephard, administrative assistant to the operations officer. "And at ASO we have to forecast what our spare parts requirements will be, up to two years in advance."

With the dynamics of the system changing so often, carrier deck loads, aircraft configuration changes, manufacturers going out of business, etc., trying to get the right mix of parts on the shelf or to a squadron can be difficult. From time to time there

are changes in carrier deck loading, i.e., an extra squadron may deploy with the ship. This increases the demand for parts, giving ASO only one to three months' lead time to procure them instead of the optimum 24 to 28 months.

"There are operational reasons for these changes, but ASO's supply and maintenance people have to react to them by making sure the particular parts find their way back to the carrier," Shephard said.

Since 1971, ASO has undergone several principal changes, specifically: ability to deal with more sophisticated equipment; deeper involvement in supporting maintenance plans; heavier emphasis on management of repairables vice consumables; and an orientation toward total weapons system support rather than commodity management.

As naval aircraft have become more complex, so have the spare components that ASO manages. Its equipment specialists have had to keep up with the Navy's technological advancements in order to perform their function and make the right logistics management decisions, according to Com. Ruehlin.

Ten years ago, ASO's inventory management branches were organized by commodity types (airframes, avionics, support equipment, etc.), and few people worried about total support of individual weapons systems. "Now our front line aircraft are

supported by dedicated organizations (within ASO) who oversee all ASO-related logistics elements," said Ruehlin. "They insure that ASO's primary focus is on achieving and maintaining readiness today." Added Powelson, "NavAir and NavSup are basically the watchdogs who monitor our performance of fleet requirements."

ASO increasingly puts much thought and effort into acquiring sufficient funds to support the fleet logistics requirement, said Ruehlin. "We are constantly faced with a need to maintain a credible and clear portrayal of funds required and what they will buy in the way of readiness," he added.

ASO is now heavily engaged in a maximum effort to increase the percentage of its procurement dollars which are awarded competitively among manufacturers in accordance with DoD goals. Because of this, ASO is planning on \$200 million in competitively procured material this fiscal year (almost double from 1982) and \$400 million in fiscal year 1984.

To help respond more quickly to the needs of the Navy, ASO is in the process of replacing its current computer hardware and software with more modern types. Currently, its 15-year-old Univac 494 computers, considered obsolete in today's technology, contain ASO's massive data load of stocked materials.

"The data itself, the number of requisitions, how many items they are for, etc., are all analyzed by the computer to permit us to do our billing and budgeting," said James Gaynor, acting division director for ASO's systems development. "You might say the computer is ASO in a certain sense."

This planned computer modification, which will extend into the 1990s, will relieve ASO of a lot of its present manual effort. It will also allow instant response capability on a real-time basis, and a more efficient method of servicing the fleet from day to day. ■



Left, Univac 494 computer holds ASO's massive data bank of stocked materials. It is scheduled to be replaced soon with a newer state-of-the-art system. Far left, ASO employees at work.

Seawars Can Save Lives

By Karen Frederick

Ejection at sea from a naval aircraft is no piece of cake. But, with proper training and state-of-the-art equipment, it saves lives. Nevertheless, too many naval aircrew members have been lost at sea following apparently successful overwater ejections.

According to Commander James A. Brady of the Naval Air Systems Command, Crew Systems Division, the failure or inability to manually inflate the life vest and release the parachute is included among the primary factors associated with these drownings. Brady says these failures were due to several reasons: "something during the ejection episode stunned the ejectee and impaired consciousness, the life preserver was not manually actuated; or there was parachute entanglement and drag." The FLU-8/P automatic life preserver inflation program and the seawater activated release system (Seawars) program for automatic parachute release are intended to address these problems.

The idea behind the FLU-8/P and Seawars concepts is almost 20 years old. In the mid-sixties, the Crew Systems Division began a program called Mansafe to develop a device that would automatically inflate a downed crewman's life vest and raft, while simultaneously releasing the parachute. Thomas Pavlik, head of the Crew System's Emergency Egress Branch, says, "The Mansafe program ran into several problems. The main drawback was the integration of three separate actions into a single system. The sensing mechanisms were all in the ejection seat and would have required different configurations for each seat type to accomplish the necessary actions." According to Pavlik, Mansafe was too complex and cost-prohibitive. As a result, the Mansafe program was terminated without significant results other than lessons learned.

The need still existed, however, and it was decided to work on the life vest and parachute problems separately. The life vest got a head start



Mounted on the Koch fitting, the Seawars device is designed to not interfere with manual release procedures.



During one of many tests, the pilot is freed from his parachute immediately as the Seawars device automatically releases his Koch fitting upon immersion in salt water.

with the FLU-8/P which has been in use in Navy life vests since 1980, and has proven successful. Now, after more than three years of use, it is estimated that 13 to 15 aircrew members are alive today because the FLU-8/P did its job.

Far more stringent fail-safe and reliability requirements existed for an automatic parachute divestment system than for the FLU-8/P, which can actuate in fresh water as well as seawater. The Seawars operational requirements were that it must not activate in any medium but seawater; must not interfere with manual Koch fitting (the harness release) operation; must weigh less than one pound; and must take less than 120 minutes to repair.

"There were many questions to be answered, such as 'What if someone touched it with sweaty palms or a pilot ejected while it was raining?' " says Pavlik. The Seawars device attaches to each of the two Koch fittings on the crewman's parachute and is designed to sense the electrical conductivity of water. When immersed in salt water (conductivity of 10,000 micromhos/cm or greater) a cartridge fires, freeing the ejectee from the parachute within two seconds. A thunderstorm, fresh water or a chlorine pool will not activate Seawars. Each Seawars unit (left or right) operates independently of the other.

"It is intended to be used as backup only," says Stephanie Lorge, the Seawars project engineer, "and will not interfere with the Koch fittings' manual operation. Manual operation of the Koch fittings by the aircrew member will still be the primary method of parachute divestment."

Service release testing was done at the Navy Ordnance Station at Indian Head, Md. Don Burtchette, a branch head and chief engineer for the technical testing, says, "In our testing, we made it a point to make sure we were over-testing in particular areas. We wanted to make sure there was no possibility of a single point failure or a set of environmental conditions which could cause inadvertent operation."

Of the many important and stringent tests, Burtchette feels the environmental tests were the most impressive of all. Most were under such adverse conditions that the settings were more than realistic. For example, the temperature-humidity-altitude cycle was a 28-day test incurring various temperature, relative humidity and altitude extremes within test chambers. The salt fog test, which lasted for seven days, included a series of highly concentrated sulfur dioxide gas injections, resulting in a very corrosive atmosphere. In the rain test, heavy rain was simulated (mixed brine salt water) with a conductivity of 1,000 micromhos/cm for a 2-hour cycle, ranging between 5 and 12 inches per hour, with 40-mph winds. (About 1/2 to 1 inch per hour is considered the *norm* for *real world* rainfall.)

After Seawars successfully passed all the technical tests, 22 open-ocean parachute jumps were conducted by experienced test parachutists from the Naval Weapons Center in China Lake, Calif. Some of the jumpers were skeptical at first, but by the end of the test jumps, all were firm believers in Seawars. Seawars completed operational test and evaluation (OpEval) late last summer, and it is planned to outfit deploying carrier air wings in the spring of 1984. Seawars should be installed on all Navy ejection seats by early 1987.

Commander E.P. Vollmer, director of the Crew Systems Division, stresses, "Seawars has been designed and rigorously tested to avoid single point

failures. Reliability requirements from day one have been extremely stringent. Seawars as a backup mode to manual parachute release should significantly increase aircrew survivability by dramatically reducing the chances of inadvertent parachute entanglement. Aircrews must realize, however,

that Seawars will not totally eliminate parachute entanglement."

This is just one of the many projects under way in Vollmer's division which is responsible for the engineering development and in-service support of all aviation life support systems and equipment within the Navy. ■

1000 TRAPS

The following is a list of those Naval Aviators who have made 1,000 or more carrier arrested landings. Ranks may have changed. If we have missed listing you or someone else who is qualified for membership on this exclusive roster, please let us know.

Capt. H. D. Alexander
 Capt. John E. Allen
 Cdr. Edward K. Andrews
 Capt. Robert B. Arnold
 Capt. Stanley R. Arthur
 Cdr. Ronald N. Artim
 Cdr. Fred Baldwin
 RAdm. Joseph J. Barth, Jr.
 Cdr. R. P. Boenninghausen
 Cdr. Hugh C. Bowles
 Cdr. Wilton D. Bradshaw
 Capt. John S. Brickner
 Cdr. Edward F. Bronson
 Cdr. Emory Worth Brown, Jr.
 RAdm. Thomas F. Brown
 Cdr. Daniel C. Bunting
 Capt. Norman D. Campbell
 Capt. Guy Cane
 Cdr. Roy Cash, Jr.
 Cdr. Austin E. Chapman
 Capt. W. Lewis Chatham
 Capt. Douglas L. Clarke
 RAdm. Bryan W. Compton, Jr.
 Cdr. Charles A. Cook
 Cdr. Lewis W. Dunton III
 Como. Leon A. "Bud" Edney
 Capt. David R. Edwards
 Cdr. Lawrence L. Elmore
 Cdr. Richard S. "Fox" Farrell
 Capt. John L. Finley
 Cdr. James H. Finney
 RAdm. James H. Flatley III
 Cdr. Roger P. Flower
 Capt. Samuel C. Flynn, Jr.
 Cdr. John P. Gay
 Cdr. George Gedney III
 Cdr. Robert W. Geeding
 Cdr. Franklin H. Gerwe, Jr.
 Cdr. R. W. Hamon
 Cdr. Robert W. Hepworth
 Capt. David W. Hoffman

Cdr. Marshall A. Howard
 Capt. Richard L. Kiehl
 Capt. Robert L. Kiem
 Cdr. J. E. Killian
 Cdr. Henry M. Kleemann
 Capt. H. P. Kober, Jr.
 Cdr. James A. Lair
 Cdr. Thomas V. LaMay
 Capt. Bobby C. Lee
 Cdr. Fred L. Lewis
 Capt. P. H. "Bud" Lineberger
 Capt. R. E. Loux
 Cdr. John M. Luecke
 Cdr. Robert A. Maier
 Capt. Roger A. Massey
 Capt. James T. Matheny
 Cdr. Donald L. McCrory
 Cdr. John L. McWhinney
 Cdr. Hugh "Tony" Merrill
 Cdr. Frederick P. Meyers
 Cdr. Eugene F. Mitchell
 Cdr. Tom R. Mitchell III
 Capt. Thomas G. Moore
 Cdr. J. A. Moriarty
 Capt. Melvin D. Munsinger
 RAdm. L. R. "Moose" Myers
 Capt. W. R. "Buzz" Needham
 Capt. A. J. Nemoff
 Cdr. Michael B. Nordeen
 Cdr. Jerry Palmer
 Cdr. J. P. Park
 Cdr. J. W. Partington
 Cdr. Richard K. Pottratz
 Cdr. Lawrence H. Price
 Capt. W. V. Roeser
 Capt. David N. Rogers
 Cdr. Philip J. Rooney
 Cdr. Dan H. Ryder
 Cdr. Raymond C. Schroeder, Jr.
 Capt. James M. Seely
 Capt. Tom E. Shanahan

RAdm. William G. Sizemore
 Capt. Bernard J. Smith
 Capt. Leighton W. "Snuffy" Smith
 Cdr. Robert E. Smith
 Capt. William F. Span
 Capt. Haywood G. Sprouse
 Cdr. Gary L. Starbird
 Capt. Paul D. Stephenson
 Cdr. Raymond F. Sullivan
 Cdr. John M. Sumnick
 Cdr. T. R. Swartz
 Capt. Jeremy "Bear" Taylor
 Cdr. John M. Taylor IV
 Capt. Robert C. Taylor, Jr.
 Capt. Bert D. Terry
 Cdr. Frank Lee "Raider" Tillotson
 Cdr. Dwight D. Timm
 Capt. Charles L. Tinker
 RAdm. Ernest Eugene Tissot
 Capt. R. E. "Gene" Tucker, Jr.
 RAdm. Jerry O. Tuttle
 Cdr. John E. Vomastic
 Capt. John M. Waples
 Capt. George Watkins
 Cdr. George J. Webb, Jr.
 Capt. D. R. Weichman
 Cdr. William W. West
 Capt. W. R. Westerman
 Capt. Gary F. Wheatley
 Capt. John R. Wilson, Jr.
 Cdr. Richard A. Wilson
 Cdr. Rexford E. Wolf
 Cdr. T. W. Wright
 Cdr. John P. Wrynn

Established

A new squadron augment unit (SAU) training program is being established which will allow naval reservists to train in current aircraft at fleet readiness squadrons (FRSs). They will fly and maintain the type of aircraft they would be expected to operate in the event of mobilization — such as F-14s, A-6Es and E-2Cs. The schedule calls for 25 crews in five FRSs during FY 1984, expanding to 73 crews in eight squadrons the following fiscal year.

A new reserve unit has been established in Jacksonville which will support the Navy's P-3 *Orions* in remote areas of the world in times of crisis. The unit, Naval Reserve Fleet Maritime Patrol-Mobile Maintenance Facility 0174, is commanded by Capt. Ward J. O'Brien.

Rescues

Three selected reservists, Lt.Cdr. Dan Thornhill and Jo Ellen Oslund, HC-194, and aircrewman AMH1 Jack Watson, HC-9, were on a routine training mission when they received a distress call from a downed A-4 of VMA-134, NAS Miramar, in waters off Del Mar, Calif. Within 14 minutes, the reservists were hovering over the A-4 and five minutes later the pilot Maj. John Berry was safely on board the helicopter.

Last June, a helicopter crew of HC-1, Det 2, embarked aboard *Midway* (CV-41), rescued a VF-161 radar intercept officer who had ejected from his F-4S *Phantom* when it went out of control during a night recovery. A protracted search during the evening and following day failed to locate the pilot.

Records

The following squadrons accrued accident-free flight time in years: HSL-31 and VA-203, 10; and HC-3, 9.

Other squadrons recorded their accident-free flight time in hours: HMT-301, 70,000; VP-91, 55,555; VP-62, 20,000; VA-75, 16,000; HC-9, 15,000; HM-14 and HMM-262, 10,000; VMGR-152, 5,177; and VF-154, 4,000.

Carl Vinson marked her 14,000th arrested landing since her commissioning in March 1982, when Lt. M. Cassick, VAW-114, landed an E-2C *Hawkeye* during flight operations in the Indian Ocean last July.

VQ-3: Lt.Cdr. R. Horner, Lt.Cdr. C. Fitchett and RMC R. Fox have each recently passed their 5,000th flight hour in the EC-130.

VF-84: Lt. G. Nelson surpassed his 1,000-hour mark in the F-14 recently while deployed aboard *Nimitz* in the Mediterranean.

VA-34, *America*: Lt.Cdr. R. Ponton marked his 900th carrier arrested landing and a total of 3,000 hours in the A-6 *Intruder*, one of the top records achieved by a Naval Flight Officer.

Awards

ABH1 Michael L. Herman, assigned to *Tripoli* (LPH-10) and ABE1 Elwood G. Eppard, *Saratoga* (CV-60), have been selected the Pacific and Atlantic Fleet Aviation Boat-swains Mates of the Year for 1983.



Lt.Cdr. S. E. Hart, CVW-5 aboard *Midway*, was recently named Com-NavAirPac Operational Flight Surgeon of the Year.

Naval Air Systems Command's LAMPS MK III program manager, Capt. J. M. Purtell, is the recipient of the Navy Helicopter Association's Bendix Award for Lifelong Service to Navy Helicopter Aviation.

The following Marine reservists with HMM-764, MCAS El Toro, received the Aviation Safety Award in recognition of accident-free flight hours: Lt.Cols. C. J. Pardoe and G. J. O'Connell, 3,000 accident-free-flight hours; Maj. J. K. Edwards and B. J. McGuire and Capt. T. A. Walliser, 1,000.

HML-167, MAG-29, MCAS(H) New River, personnel who were presented the Aviation Safety Award were: Maj. L. B. Nutt and J. A. Byrtus, Jr., and Capt. G. A. Mattes, 2,000; Capt. M. J. Jinnett, Maj. D. J. Lee and GySgt. R. G. Schied, 1,000.

Honing the Edge

VA-75 recently returned from six weeks of training aboard *Kennedy*.

Participating in *Readex* 1-83, they flew their A-6 *Intruders* in exercises involving mobile sea range, numerous close-air-support missions and multi-platform coordinated *Harpoon* missile firing. VA-75 scored direct hits with laser-guided and free-fall bombs, as well as *Shrike* and air-to-air *Side-winder* missiles.

Recently VA-196 set a new squadron record of 116 consecutive sorties launched aboard *Coral Sea* (CV-43). The carrier is deployed on World Cruise '83.

VF-301 recently deployed eight F-4S aircraft to NS Roosevelt Roads, Puerto Rico, to test short-notice mobilization orders. The *Devil's Disciples* simulated air-to-surface threats in an operational test and evaluation of the Aegis surface-to-air weapons system aboard *Ticonderoga*.

Naval reservists are training with the Navy's newest aircraft, the F/A-18 *Hornet*, in preparation for activation of the Naval Air Reserve's first strike fighter squadron at NAS Lemoore in January 1984. The squadron, to be designated VFA-303, will be formed by transitioning reserve squadron VA-303, currently located at NAS Alameda. The first aircraft are scheduled to arrive in April. Additional Naval Air Reserve squadrons will transition throughout the production cycle of the F/A-18.

Anniversaries

Naval Air Rework Facility Jacksonville 0474 celebrated its 25th anniversary in June. It was established June 14, 1958, as part of NARTU Jacksonville, with the mission of providing technical and engineering assistance to the naval air reserve.

NAS Patuxent River's 40th anniversary air show was held last August. Fighter and trainer planes from the early 1940s when the air station was established were featured, with many of today's aircraft.

NAS Moffett Field, which was the hub and main training center for patrol operations that reach halfway around the earth to the west and from the Arctic to the southern seas, celebrated its golden anniversary during the July 4 weekend.

Last

When Lt.Col. "Cap" Pinney, C.O. of VMA-134, set down his A-4F *Skyhawk II* at MCAS El Toro in July,

for the last time, it marked the departure of the *Skyhawks* from the MAG-46 flight line. Attending the farewell ceremony was Ed Heine-mann who designed the A-4 while he was chief engineer at Douglas, El Segundo. VMA-134 is transitioning to F-4 *Phantoms*.

Et cetera

NATC Patuxent River: A new project called "AH-1S Helicopter Evasive Maneuvering Flight Tests" is currently under way to develop new weapons systems for helicopters and to train pilots in evasive maneuvering, i.e., air-to-air tactics that elude or destroy enemy helicopters. This study will document the helicopter's flying qualities, performance and structural conditions during critical maneuvers. The Test Pilot School project focused on the AH-1S *Huey Cobra*, using the Bell OH-58 *Kiowa* as a bogey.

Nimitz (CVN-68), which entered the fleet in 1975, is undergoing extensive overhaul and alterations at Newport News Shipbuilding. *Nimitz* is the Navy's second nuclear-powered carrier.

In July, a Marine Corps CH-53E *Super Stallion* flew coast to coast in a nonstop 15-hour flight from Patuxent River, Md., to MCAS Tustin, Calif. The CH-53E was refueled four times en route. A Navy RH-53D from HM-12 made the first nonstop coast-to-coast flight several years ago in 18.6 hours from NAS Norfolk to San Diego.



The first fully qualified female flight deck aircraft director aboard *Lexington* is Airman Tammy Symonds, who has the responsibility for directing aircraft from their landing position on the flight deck to the launch area for their catapult shots back into the flight pattern.

The gold Naval Aviator Wings of Ens. Cary Jones, who was the first woman Navy pilot killed in the line of duty, were flown into space aboard the shuttle *Challenger*, commanded by Navy Captain Robert Crippen. He later presented the wings to her parents. Jones, who had hoped to become an astronaut, was killed in a training flight last year.

Change of Command

ComFitAEWWingPac: RAdm. T. J. Cassidy, Jr., relieved RAdm. G. M. Furlong, Jr.

ComNavAirLant: VAdm. C. C. Smith, Jr., relieved VAdm. T. J. Kilcline.

ComPatWingsLant: Como. W. T. Pendley relieved RAdm. E. A. Wilkinson.

ComTacSupWing-1: Capt. T. R. Ryan III relieved Capt. K. A. MacGillivray.

ComTacWingsLant: RAdm. T. C. Steele relieved RAdm. J. H. Fetterman, Jr.

CVWR-20: Cdr. M. M. Kemple, Jr., relieved Cdr. J. E. Gill.

FASOTraGruLantDet: Cdr. R. G. Pearson relieved Lt.Cdr. C. E. Dehnert.

H&HS, MCAS(H) Tustin: Maj. W. W. North relieved Maj. C. T. Dunstan.

H&HS-38: Maj. C. L. Lott relieved Maj. W. R. Wyser III.

HM-14: Cdr. C. F. Harrison relieved Cdr. M. G. Steen, Jr.

H&MS-10: Maj. R. V. Weidner relieved Maj. J. L. Whitson.

H&MS-13: Lt.Col. R. P. Toettcher relieved Lt.Col. R. E. Donaghy.

H&MS-15: Lt.Col. S. E. Sheaffer relieved Lt.Col. N. R. Ford.

HMH-362: Maj. N. L. McCall relieved Lt.Col. T. M. Fine III.

HMH-363: Maj. R. Slack relieved Lt.Col. A. Picone.

HMM-161: Lt.Col. G. Albin relieved Lt.Col. F. Lee.

HMM-365: Lt.Col. J. J. Barrett relieved Lt.Col. J. J. Foley.

HMT-301: Lt.Col. M. J. Williams relieved Lt.Col. W. R. Gage.

HS-5: Cdr. R. T. Scott, Jr., relieved Cdr. J. M. Drager.

MABS-11: Maj. J. F. Dalton relieved Maj. H. E. Jensen III.

MABS-13: Maj. C. E. White relieved Maj. K. A. Solum.

MACS-5: Maj. J. W. Schwab, Jr., relieved Lt.Col. J. W. Robben.

MACS-7: Lt.Col. R. N. O'Leary relieved Lt.Col. J. W. Mohr.

MAG-13: Col. C. F. DeFries relieved Col. D. E. Baker.

MAG-15: Col. C. M. Lacroix relieved Col. W. D. Bauer.

MAG-31: Col. F. A. Huey relieved Col. J. B. Hammond.

MAG-39: Col. R. L. Phillips relieved Col. D. E. P. Miller.

MCAS Beaufort: Col. P. J. Jones relieved Col. W. J. Cooper.

MCAS New River: Col. D. A. Hodgen relieved Col. J. W. Marvel.

MWSG-37: Col. E. F. Baulch relieved Col. H. M. Whitfield.

NAS Bermuda: Capt. D. G. Gentry relieved Capt. S. F. Loftus.

NAS Memphis: Capt. B. A. Spoford relieved Capt. B. B. Woodworth.

NAS North Island: Capt. R. N. Blatt relieved Capt. R. B. Watts.

NAS Oceana: Capt. R. M. Vance relieved Capt. R. H. Byng.

Naval Test Pilot School: Cdr. R. Parkinson relieved Cdr. A. Coward IV.

TraWing-6: Capt. C. E. Ward relieved Capt. E. J. Thaubald.

USS *Guam*: Capt. J. M. Quarterman, Jr., relieved Capt. R. H. Jesberg.

USS *Midway*: Cdr. B. Canepa relieved Cdr. L. J. Vernon.

USS *Ranger*: Capt. A. H. Fredrickson relieved Capt. A. A. Less.

VA-72: Cdr. C. A. Cook relieved Capt. R. L. Kiem.

VA-86: Cdr. R. J. Castor relieved Cdr. C. S. Abbot.

VA-127: Cdr. P. J. Valovich relieved Capt. W. P. DeCarli.

VA-303: Cdr. R. Banks relieved Cdr. H. Shorr.

VAQ-33: Cdr. J. P. Vambell relieved Cdr. T. E. Dixon.

VAQ-137: Cdr. J. E. Eckhart relieved Cdr. T. J. Williams.

VAW-110: Cdr. W. T. Hood, Jr., relieved Capt. W. J. Mooberry.

VF-111: Cdr. D. G. Bjerke relieved Cdr. L. O. Milam.

VMA-121: Lt.Col. S. Day relieved Lt. Col. J. Rippy.

VMA-211: Lt.Col. J. McAnally relieved Lt.Col. N. Marshall.

VMFP-3: Lt.Col. J. E. French relieved Lt.Col. J. G. Thomas.

VP-16: Cdr. J. L. Harford relieved Cdr. J. E. Muttly.

VP-26: Cdr. D. F. Rahn relieved Cdr. D. A. Crump.

VP-45: Cdr. J. F. Phelan relieved Cdr. R. H. Phelan.

VP-48: Cdr. J. S. Falls relieved Cdr. R. S. Parodi.

VP-49: Cdr. J. A. Dvorak relieved Cdr. J. L. Minderlein.

VP-90: Cdr. C. R. Karlsson relieved Capt. J. E. Langland.

VQ-2: Cdr. J. J. Draper relieved Cdr. D. C. East.

VQ-4: Cdr. P. R. Fletcher relieved Cdr. C. J. Osier.

VS-32: Cdr. J. E. Potter II relieved Cdr. S. C. Wood.

VS-33: Cdr. T. C. Sexton relieved Cdr. A. T. McGuffey, Jr.

VT-3: Cdr. M. Karlich relieved Lt.Col. D. I. Habermacher, Jr.

VT-6: Cdr. J. C. Woodard, Jr., relieved Cdr. R. C. Keenan, Jr.

VT-26: Cdr. W. R. Bowers relieved Cdr. K. M. Carlton.

VT-28: Cdr. B. Neal relieved Cdr. R. Kosakoski.

VT-31: Cdr. R. Keiser relieved Cdr. R. Magalis.

awards

Distinguished Flying Cross



SAR helo Angel Three, piloted by Lt.Cdr. Ellison, flies over the high Sierras where Donnie Priest's rescue took place.

Lt.Cdr. Daniel A. Ellison was awarded the Navy's Distinguished Flying Cross for the rescue of a young boy who spent five days in the wreck of a small aircraft in the Sierra Nevada Mountains. The helicopter pilot received his medal during a recent ceremony at NAS Barbers Point, Hawaii, where he is assigned to HSL-37.

On January 3, 1982, 11-year-old Donnie Priest was flying home to Orinda, Calif., with his parents when their small craft ran into a snowstorm and crashed at the 11,100-foot level of the high Sierras. His parents were killed. Donnie was unharmed and crawled to the rear of the fuselage where he huddled in a sleeping bag. Three days later, a search and rescue team from NAS Lemoore, Calif., joined in the ongoing search for survivors. On January 8, Chief Jerry Balderson in the SAR helo saw the brown and white airplane partially covered by snow. Lt.Cdr. Ellison piloted the helo away from the scene, picked up two Park Service rangers and landed them about 200 yards from the wreck. The rangers skied to the wreckage, dug through the snow and entered the plane through a hole in the fuselage. Learning that there was a survivor, Ellison hovered the helo over the crash site while Chief Balderson was lowered to assist. The boy was placed in a harness and raised into the SAR helo for the flight to Yosemite Valley Medical Center. The 60-degrees-below-zero temperature that Donnie was subjected to caused severe frostbite and both feet had to be amputated, but he survived.

National Aviation Hall of Fame

The U.S. Navy's only ace during WW I, David S. Ingalls, was one of four aviation and space pioneers enshrined in the National Aviation Hall of Fame last July 23 in Dayton, Ohio. He was honored for being the youngest in any service during WW I; for service as Assistant Secretary of the Navy for Aeronautics during which he promoted carrier aviation; his role with Pan American Air Ferries in developing the air supply line to the Allies; his service as a naval officer during WW II in the Naval Air Transport Service (NATS); and his postwar role as a newspaper editor in supporting the development of safer commercial aviation.

The other enshrinees were A. Scott Crossfield, the first man to fly at Mach 2 (in the Navy Douglas D-558-2 *Skyrocket*) and 3; Theodore von Karman, known as the "father of the supersonic age;" and Thornton A. Wilson, chairman of The Boeing Company, one of the nation's largest aerospace corporations.

Clifton Award

The 1982 Admiral Joseph Clifton Award was presented to VF-1, the *Wolfpack*, NAS Miramar, Calif., as the most outstanding fighter squadron in the Navy. Named in honor of the famous WW II fighter pilot, the award is presented annually to recognize excellence in operational performance and safety, administrative excellence and effective aircraft maintenance.

Isbell Trophy

The 1982 Captain Arnold Jay Isbell Trophy for excellence in air antisubmarine warfare has been awarded to HSL-34, HS-11, VS-33 and VP-5 in the Atlantic Fleet; and HSL-37, HS-6, VS-37 and VP-9 in the Pacific Fleet.

Sponsored by Lockheed-California Company, the award is named for the distinguished antisubmarine warfare commander, under whose leadership planes and escort carriers operating in the Atlantic during WW II developed into a powerful combat force. Capt. Isbell was killed in action in 1945 while serving aboard USS *Franklin*.

The trophy was established in 1958 to motivate superior performance of ASW capabilities and to present tangible awards to those squadrons judged to be the best during each 12-month competitive cycle.

McClusky Award

VA-196, NAS Whidbey Island, Wash., was named winner of the 1982 RAdm. Clarence Wade McClusky Award by the Chief of Naval Operations as the best attack squadron in the Navy. The competition among over 40 A-6 and A-7 squadrons is based on maintenance, operational, safety and administrative excellence. The Vought Corporation-sponsored award is in memory of the air group commander who led his men to victory over four carriers of the Japanese fleet during the WW II Battle of Midway.



A VA-196 Intruder shows winning form as it drops 16 Mk 82 bombs on target.

T. E. McCabe

NAS Banana River

Several former NAS Banana River, Fla., personnel wish to plan a reunion and would like to locate then C.O. Lt.Cdr. Waldo Tulsen and X.O. Lt. John B. Huhn, who served at the air station from 1940 to 1942. If anyone knows their whereabouts, please contact Bob Grier, Rt. 2, Box 31, Seale, AL 36875.

P-3 Orion

My brother and I have an extensive slide collection of the P-3 *Orion* and wish to obtain slides (preferred) or photographs of all models and variants of the aircraft. We are willing to trade or purchase any slide or negative that we can use. Perhaps some of *NANews'* readers can fill the gaps, particularly in the early and mid-sixties, that exist in our collection.

Bruce D. Stewart
1860 N. Camino de la Cienega
Tucson, AZ 85715

HAL-3

I am preparing a unit history of Helicopter Attack (Light) Squadron Three (HAL-3) during its service in Vietnam. I would like to contact any former members of this unit, or its predecessor HC-1, Det 29, who are willing to share their experiences with me.

James D. Sprinkle
920 Timber View Dr.
Bedford, TX 76021

Correction: The Black Aces of VF-41, NAS Oceana, Va., won the Admiral Joseph P. Clifton Trophy for 1981 vice 1982, as stated in *NANews*, March-April 1983.

Another Viewpoint

Regarding the letter from Adm. Thomas H. Moorer, USN(Ret.), on the *Harpoon* as an air-to-surface weapon (*NANews*, July-August 1983), this weapon requirement arose out of a joint meeting of the ASW Forces of the Atlantic and Pacific in 1964. It was not originally pointed at surface ships. If a P-3 discovered by radar a surfaced *Echo*-class submarine, capable of launching surface-to-surface missiles, it had no weapon but a Mk 46 torpedo. By the time the aircraft arrived, the sub was long gone!

The late Charlie Weakley, Charlie Martel, Pete Aurand and Eli Reich contributed to writing this requirement. The range of 60 miles was decided by the range capability of the aircraft radar against a surfaced *Echo*-class sub. The weight of the missile was dictated by the on-station time of the aircraft and was thus restricted. I have a copy of the joint letter by myself and Charlie Weakley that was sent to CinCPacFlt and CinCLantFlt with the recommendation for the *Harpoon*. This same conference came forth with the requirement to replace the obsolete S2F *Tracker*, and finally resulted in the S-3A's coming into being.
VAdm. John T. Hayward, USN(Ret.)
3 Barclay Square
Newport, RI 02840

(Ed's note: VAdm. Hayward was president of the Naval War College, 1966-68.)

Reunions, Boards, etc.

Selection boards: Captain aviation command screening, November 14-15; aviation major command screening, November 14-25; LDO aviator, November 28-December 2; and major project manager, December 12-14.

Anyone Associated with PBMs Anywhere, Anytime reunion, May 10, 1984, Town and Country Hotel, San Diego, Calif., in conjunction with the Association of Naval Aviation's symposium. Respond by January 15, 1984. Contact Dick Gingrich, 468 E. Baltimore, Greencastle, PA 17225, (717) 597-8250.

Aircrew reunion for former Eagles of VF-3, VF-3B, VF-3S, VF-5 and VF-51, November 1983, NAS Miramar, San Diego, Calif. Those interested should contact Lt. William Schlichter, VF-51, FPO San Francisco, CA 96601.

USS Shangri-La (CV-38) reunion planned for 1984. Contact Bob Ketenheim, 26 Magnolia Circle, Shrewsbury, PA 17361, (717) 235-7847.

USS Hancock (CV/CVA-19) reunion and dedication of the Hancock Museum Room at Patriots Point, S.C., planned. For details, contact Charles F. Boyst, 1801 W. Bend Ct., Clemmons, NC 27012.

USS Block Island (CVEs 21/106) reunion, May 26-28, 1984, Boston, Mass. For information, write Weber Rego Torres, 118 E. Morgan St., Fairhaven, MA 02719.

VA-35 Black Panthers reunion, June 29-July 1, 1984, NAS Oceana, Va. For further information, contact PAO, VA-35, NAS Oceana, VA 23460, autovon 274-2211, ext. 404, or commercial (804) 425-2211, ext. 404.

VPB-203 reunion in Norfolk, Va., May 10-13, 1984. Write Ray Jones, 123 Moonlight Dr., Plano, TX 75074.

Davis-Monthan

I am writing a book on the Military Aircraft Storage and Disposition Center (MASDC) at Davis-Monthan AFB, Ariz., and am researching the years 1965-73. I would like to contact any reader who visited or worked at the Center, especially anyone involved in the move of 500 Navy aircraft to MASDC from Litchfield Park in 1965. I will answer all letters.

Philip D. Chinnery
70 Carnarvon Drive
Hayes, Middlesex UB3 1PX, England

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naval aviation news