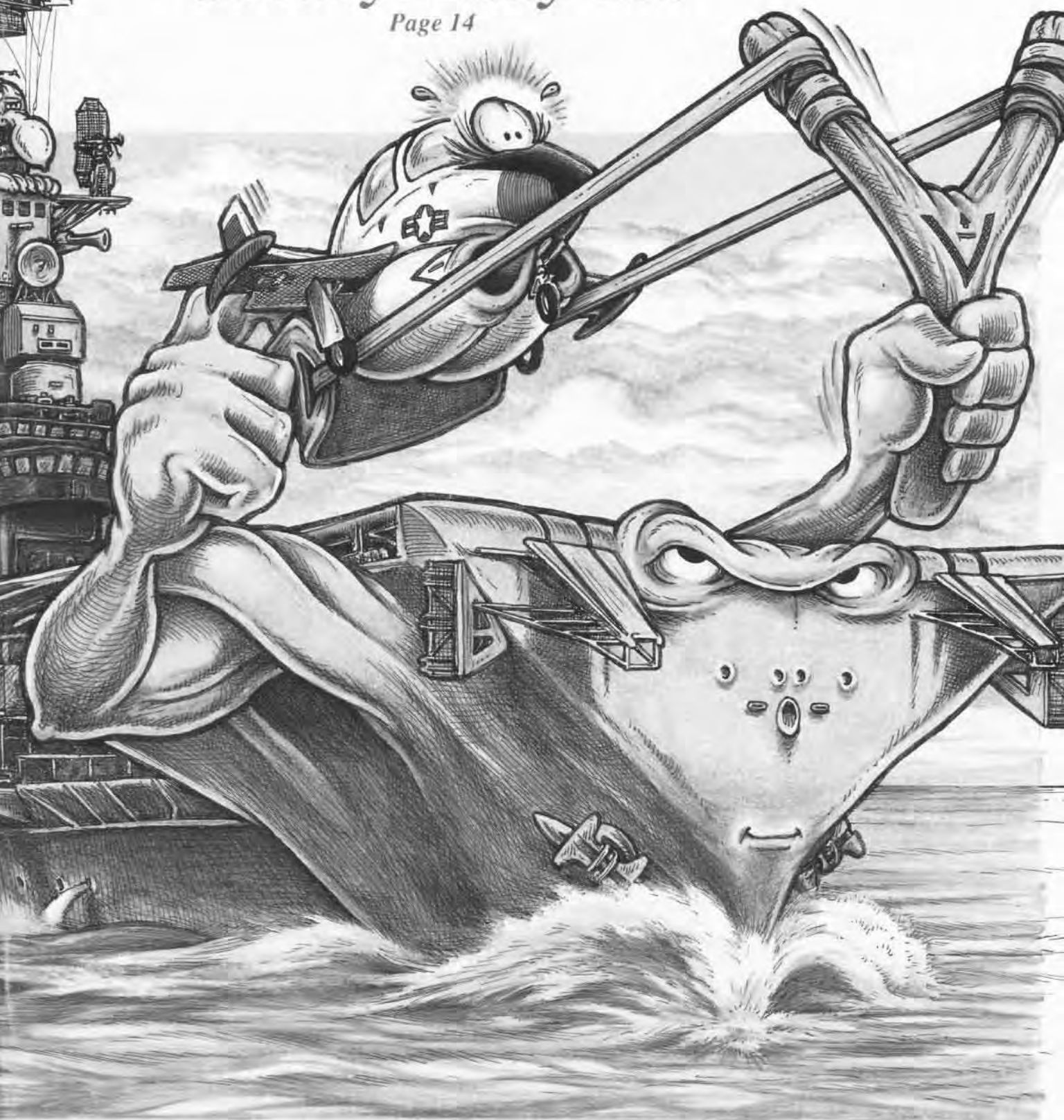


NAVAL AVIATION NEWS

January-February 1992

Goodbye Lady Lex

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NAVAL AVIATION NEWS

Flagship Publication of Naval Aviation

Oldest U.S. Navy Periodical, Volume 74, No. 2



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COVER – Artist Hank Caruso caricaturizes the essence of Naval Aviation in this salute to training carrier USS Lexington (AVT-16) as she retires from naval service. Illustration © Hank Caruso.

Vice Admiral Richard M. Dunleavy

Assistant Chief of Naval Operations (Air Warfare)

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By VAdm. Dick Dunleavy, ACNO (Air Warfare)

Shifting Paradigms

Looking into the future, the impact of declining defense budgets hits Naval Aviation square in the face, not only in terms of dollar amounts but proportional share as well. The picture isn't pretty, particularly in terms of aircraft procurement.

More than ever before, affordability has become the primary criterion for our requirements. Therein lies the commitment, for example, to press ahead with an increased buy of FA-18C/D strike fighters, funding for development of the FA-18E/F and AX, funding for upgrades to existing F-14s and termination of further F-14D procurement. Necking-down the number of aircraft types in inventory is the best way to go, given the fiscal realities. "Wish lists" are no longer achievable, but we can stay mission capable by thinking in broader terms and operating smarter. There is no room for parochialism.

Secretary Garrett has challenged the Navy to re-baseline its thinking about the way to do business. We will be looking at every aspect of Naval Aviation: our missions, capabilities, forces, infrastructure, operating patterns, and potential adversaries in a post-cold war world. Old assumptions, many of them "sacred cows," will likely be slain as we fashion a forward-

looking plan that spans the next two decades.

Staying ahead of the power curve, shifting focus with the shifting paradigms, is paramount if Naval Aviation is to remain the force of choice. Incremental adjustments may need to give way to bold, sweeping changes. New thinking in our planning must be evident to the Congress and the Commander in Chief if we expect to control our own destiny.

The Fiscal Year 92 defense budget signed by the president in November demonstrated the strong support in the Congress and among the American people for Naval Aviation. A key element in cementing that support is the new thinking that crafted the budget. We showed that we looked far into the future realistically, mindful of severe budget constraints and changing requirements, and made the hard choices that will keep Naval Aviation as the tip of the nation's spear.

We will keep our stewardship if we continue to exercise it smartly with fresh thinking. If we don't, there are plenty of outsiders who will do our thinking for us. We know our business better than anyone else. It's up to every man and woman in Naval Aviation to keep it that way. Keep strokin'.



SH-60Bs from HSL-46 fly past the Farallioni Rocks near Capri.

Angelo Romano

Wheels of Fortune

The pilot of an AV-8B reported at the initial point for landing on the north runway at a West Coast air station. He was cleared to land following an FA-18 on final. The tower asked the *Harrier* to check wheels down. There was no acknowledgment to this. A short time later, the pilot requested a conventional touch and go. The tower then canceled the *Harrier's* landing clearance and instructed the pilot to continue the approach.

A moment later, a C-2 *Greyhound*, holding short at the approach end of the north runway, checked in on tower frequency.

The tower cleared the AV-8B for a touch and go. The pilot still did not report any landing gear status. Both the pilot and copilot of the *Greyhound* observed the *Harrier* rolling into the groove with gear up and speed brake extended. They discussed this between themselves on the intercom but made no transmission outside the cockpit.

In the *Harrier*, the landing gear warning system is activated when altitude is below 6,000 feet, air speed is less than 180 knots, and sink rate exceeds 250 feet per minute. When those conditions are met, a warning voice declares, "Landing gear, landing gear." The pilot did not hear any warning during the approach. He continued and flared the aircraft to a touchdown. He heard an unfamiliar noise, added full power, and took off.

Once airborne, he requested that his wingman visually inspect the aircraft. The wingman saw some damage to the speed brake and noted all four landing gear down. The pilot did not recall when he lowered the gear handle. The pilot next executed an uneventful landing on the *Harrier* pad.

The *Harrier* had touched down gear up, about 3,000 feet from the approach end of the runway, and skidded about 1,000 feet before becoming airborne. The C-2 pilots at the



hold-short point confirmed that the AV-8B landed gear up, speed brake extended.



Grampaw Pettibone says:

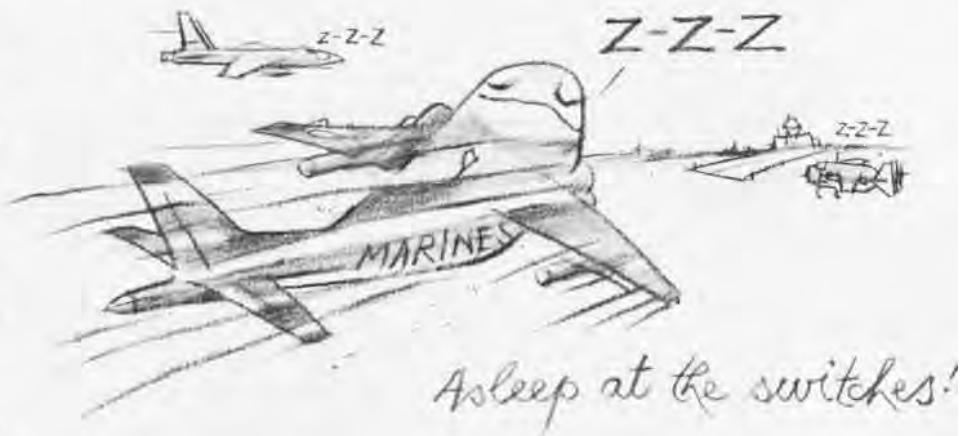
When Ole Gramps started out, we never made gear-up landings 'cause the gear never came up.

They were always stuck out in the breeze whether we were flyin' or sittin' in a cow pasture. But we wanted to go faster so we made the wheels "retractable." And ever since, an aviator here and there pancakes in like this chap.

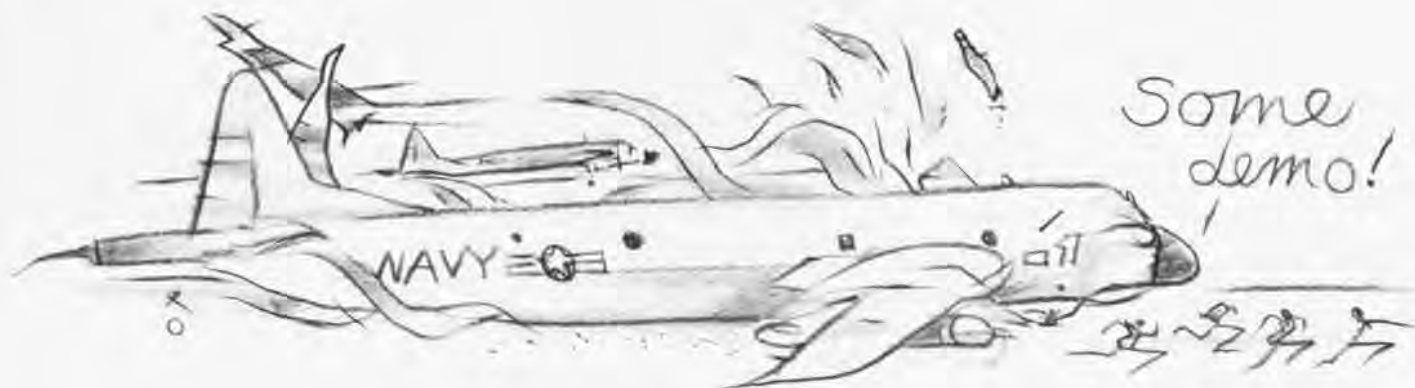
He wanted to make a touch and go and mighta got distracted by the tower's cancelation of his first request for landing and then the tower's call to continue. This pilot never did report his gear down, which shoulda made somebody perk up. Since it appears he probably was faster than 180 knots, that little voice in the black box kept silent and he got no warning that the wheels were in the wrong place at the wrong time.

How 'bout the C-2 folks? Given, they weren't familiar with the *Harrier* and weren't sure what the AV-8B's intentions were. But sometimes, if you have an inklin' somethin's wrong, it won't hurt to speak up and tell somebody about it.

Anyway, nobody got hurt and the bird was fixed. But the advice is: When the tower asks you to check your wheels down, you better do just that and report same. The procedure is designed to prevent exactly what happened here.



Asleep at the switches!



Orion Ordeal

A designated P-3 *Orion* flight demonstration crew, consisting of pilot, copilot, flight engineer, and observer, launched to practice maneuvers at an outlying field for a forthcoming official demo at an air station. After a full-stop landing, the crew executed a high-performance takeoff. They followed this with three high-speed passes over the airfield at 300 feet, 360 knots. The P-3 then made a full stop and observed another demo team in a P-3 go through a similar routine. After that, the first *Orion* took off, made an immediate left 45-degree turn, then performed a 2.0 G pop-up maneuver to 2,000 feet. Another high-speed pass over the runway followed, then two more passes at 1,000 feet, 260 knots, conducting simultaneous shutdown and subsequent restart of the number one and number four engines in the process.

The *Orion* then did a MAD (magnetic anomaly detection) trapping maneuver over the runway at 700 feet. Next, the P-3 proceeded to a left 180-degree position from the runway at 7,000 feet for a short field landing. The other *Orion* had landed and observed the first P-3 from an alternate runway.

With gear down, the pilot lowered flaps to the land position at the 135-degree point. At 500 feet in the turn, the P-3 was at 130 knots. The *Orion* arrived on final, one and a half miles from touchdown at 500 feet, and was cleared to land by the tower.

The pilot lowered the nose to point at the runway numbers and at 300 feet, the aircraft was at 126 knots. The *Orion* crossed the threshold at 128

knots, 100 feet, with a pitch attitude estimated by witness of 10-25 degrees nose down.

The pilot recognized the excessive sink rate after descending through 100 feet. He increased pitch attitude to cushion the landing. None of the crew called for a waveoff.

The P-3 impacted the strip at just under 110 knots. The landing gear bottomed out and the propellers began to strike the runway surface. Fuel spewed from the port side and flames engulfed the *Orion* aft of the props. The pilot was not immediately aware of the fire. The aircraft's flight controls moved randomly as the *Orion* slid down the runway.

The fuselage drifted left of centerline as the left wing separated from the fuselage. It struck the horizontal stabilizer and passed behind the aircraft. The number one prop separated from the engine as the *Orion* departed the runway, ultimately coming to a stop.

The observer saw the flames in the aft fuselage area and immediately opened the flight station auxiliary emergency exit. The number three engine was still running but the engineer quickly feathered it. The crash crew was on the scene within 30 seconds. The flight engineer exited, followed by the copilot, the observer, and the pilot. Except for some contusions, there were no serious injuries.



Grampaw Pettibone says:

That old saw, "Any landing you walk away from is a good one,"

belongs to the biplane days of yesteryear when we were just learnin' the flyin' game. It don't mean a pine needle in the high-tech 1990s of Naval Aviation.

It takes an 18.5 feet-per-second rate of descent to bottom out the landing gear in an Orion. The bird was simply comin' down too fast and the crew didn't notice the error in time.

Turns out the pilot was the Senior NATOPS (Naval Air Training and Operating Procedures Standardization) Evaluator in the P-3 for that command area. But he hadn't flown as a pilot at the controls in 48 days and had made only four landings in the last three months. His instrument qualification was not current. Neither was his night flying qual. He'd had a cross-evaluation flight but he didn't take the NATOPS open and closed book exams. Plus, he didn't demonstrate proficiency in landings during his evaluation flight earlier in the year.

There were some other problems – insufficient brief on flight demo procedures, among 'em. Bottom line: He sure didn't seem ready for the hop, and if he wasn't, neither was the crew.

Ole Gramps is happy they got out OK. But he's still fumin' about the loss of that beautiful bird. Poor show all the way 'round. Don't let it happen in your command.

CNO Approves VP Base Plan

The Chief of Naval Operations recently approved a plan to base 18 active patrol (VP) squadrons at three sites, with the numbers of squadrons split evenly between the three bases. The decision, announced November 13, 1991, was made in light of the planned closure of the fourth VP base, NAS Moffett Field, Calif.

Of the 20 active VP squadrons currently on strength, two will be disestablished during FY 92 as part of force-level reductions. With the remaining 18, the plan will locate six active VP squadrons each at NAS Barbers Point, Hawaii; NAS Brunswick, Maine; and NAS Jacksonville, Fla. (Presently there five at each base.)

This plan will involve relocation or disestablishment of the five active squadrons at Moffett Field (VPs 9, 40, 46, 47, and 50). However, the selection of which squadrons to move and which to disestablish has not yet been announced and potentially could include squadrons at the other bases. The decisions rest on a number of factors, such as the desirability to have all squadrons at a base operate the same version of the P-3C. The cost of moving compared to the cost of transition to a different version, the impact on deployment cycles, and the required timing of the moves will also affect the selection.

The approved plan results in 12 squadrons administratively assigned to the Atlantic Fleet and 6 to the Pacific Fleet. However, as the realignment is executed, the Atlantic and Pacific fleets will meet deployment schedules from either coast as required to equalize impact on squadrons and personnel.

Plans affecting the reserve

force squadron (VP-91) and the fleet readiness squadron (VP-31) at Moffett Field have not yet been announced.

Coast Guard Ends Hawkeye Ops

The Coast Guard recently ended almost five years of drug interdiction operations using several Grumman E-2C *Hawkeye* early warning radar aircraft. The remaining Coast Guard E-2Cs have been returned to the Navy and their former base, CGAS St. Augustine, Fla., has terminated operations.

The Coast Guard initially acquired two E-2Cs in January 1987 on loan from the Navy as the war on drug smugglers expanded greatly. In August 1989, operations moved from the Coast Guard Air Facility at NAS Norfolk, Va., to a new Coast Guard Air Station at St. Augustine. Two *Hawkeyes* loaned to the U.S. Customs Service were later transferred to the Coast Guard, which eventually operated nine different E-2Cs over the period of service (see table). One was lost in a mishap at NS Roosevelt Roads, P.R., on August 24, 1990.

Introduction of the E-2C into the Coast Guard resulted in the creation of the first Coast Guard Flight Officers; until

Coast Guard E-2Cs

CG Serial	Navy BuNo
3501*	160698
3502**	159497
3503**	159112
3504	160011
3505	159502
3506	161342
3507	158641
3508**	160415
3509**	160419

*Lost in mishap August 24, 1990

**The last four in USCG service

then, aviators were the only officers to regularly crew Coast Guard aircraft. Some E-2C Flight Officers are being transferred to CGAS Clearwater, Fla., to operate the APS-125 radar (the same as on the E-2C) aboard the new EC-130V *Hercules* (see *NANews*, Nov-Dec 91, p.8).

The last four *Hawkeyes* in Coast Guard service were flown to NAS Norfolk on October 23, 1991, for return to the Navy. CGAS St. Augustine was disestablished on November 18.

Naval Air Aids Oakland Firefighters

Naval Aviation units based in the San Francisco Bay area provided extensive assistance to the firefighting efforts during

the October 1991 blaze that ravaged more than 1,800 acres of Oakland, Calif., residential hillside and caused billions of dollars worth of damage and some loss of life.

NAS Alameda and NAS Moffett Field, along with NS Treasure Island, provided fire trucks, firefighters, volunteers, box lunches, utility trucks, and portable lighting to the firefighting effort. Two reserve squadrons at Alameda, Helicopter Antisubmarine Squadron (HS) 85 and Helicopter Mine Countermeasures Squadron 19, were placed on alert. HS-85 launched one SH-3H helicopter on a casualty removal mission, which was unsuccessful because of raging fire and exploding trees. Later, HS-85 flew the Oakland fire chief over the stricken area to survey the damage.

"New" T-39N Replaces T-47A

A major evolution in Naval Flight Officer (NFO) training began on September 30, 1991, with the return service entry of the *Sabreliner* aircraft to Training Wing 6 at NAS Pensacola, Fla. Designated T-39N, the aircraft have replaced the Cessna T-47A in NFO training.

Rockwell T-39Ds, equipped with the APS-94 radar, served as trainers for radar and airways navigation and radar interception from 1963 to 1982. In 1982, Cessna Aircraft Corporation provided a military version of its *Citation II* corporate jet, the T-47A equipped with the APG-167 radar used in the Northrop F-5E fighter. This began a new era in NFO training with contractor-supplied and supported aircraft.

Sabreliner Corporation won an interim contract during the controversial renewal competition and is providing 17 *Sabreliners* upgraded with





Cold War Victors – P3A Orions, retired in recent years from service tracking foreign submarines, now silently guard bases from which their more modern P-3C successors operate. NAS Brunswick, Maine, C.O. Capt. Mike Wilson dedicated P-3A BuNo 152156 (left) in a ceremony held August 16, 1991. Another P-3A (BuNo 152160), painted in VP-66 markings, stands as a monument at NAS Bermuda (below).

David Reade

deicing boots, vortex generators, thrust reversers, additional air conditioning, and more modern avionics, including the APS-66NT version of the intercept radar used in the F-16 fighter. The first T-39N rolled out on June 14, 1991, and the first two arrived at NAS Pensacola on June 28. The first student training flights began on September 30. The last four T-47As departed Pensacola that day in a diamond formation.

The T-39Ns are used by Training Squadrons 10 and 86 for basic and advanced NFO training, respectively. Pilots under contract to Sabreliner Corporation fly the aircraft, while student instruction is accomplished by Navy and Marine Corps NFOs.

The T-39N's career may be short lived, however. Flight International, a company based in Newport News, Va., which prevailed in a contract dispute with Sabreliner, is scheduled to take over the training in 1993, possibly using Lear 35A jets.

CNATRA Praises T-45A

The T-45A *Goshawk*, soon to be training the Navy's student strike aviators, was introduced by the Chief of Naval Air Training (CNATRA), RAdm. William McGowen, at a September 1991 press conference at NAS Kingsville, Texas. RAdm. McGowen called the T-45 the "ultimate pilot trainer."

Training Wing 2 at NAS Kingsville is scheduled to receive its first operational T-

45A in January 1992, and 12 more by January 1993. Training Squadron 21 is tapped to be the first squadron to train student aviators with the new aircraft.

Unlike the T-2C and TA-4J it is replacing, the T-45 Training System is "a combined training systems package. It combines computer-based academic programs, contract logistics support, instrument simulators, and state-of-the-art cockpit display," McGowen said. "Training could be reduced by as much as five weeks. This will save the Navy and taxpayers money and cut down on maintenance costs."

Nimitz Quals Super Tomcats

Fighter Squadron (VF) 124, the West Coast F-14 fleet readiness squadron, sent four of its new F-14D *Super Tomcats* to *Nimitz* (CVN-68) on



October 2 for the F-14D's first fleet carrier qualifications. The four crews, led by VF-124 C.O. Capt. George Moe, each completed 10 day and 6 night "traps."

The VF-124 crews praised the carrier suitability of the F-14D, including the increased power response of the

McDonnell Douglas



The first FA-18 built for the Kuwaiti Air Force takes off on its first flight in September 1991. Officially rolled out during an October 8 ceremony at McDonnell Douglas' St. Louis, Mo., plant, the two-seat FA-18D (Serial 441) is the first aircraft to be powered by the new higher-thrust General Electric F404-GE-402 Enhanced Performance Engine. The new engine will power all new FA-18s for the Navy and Marine Corps starting in 1992. Kuwait has purchased 32 single-seat FA-18C and eight FA-18D versions.

General Electric F110 engines, the Modified Direct Lift Control (MOD DLC), and the heads-up display (HUD). The MOD DLC allowed the pilots to make more precise corrections for glideslope errors while "flying the ball." According to VF-124 landing signal officer Lt. Tom Marotta, the F-14D is "a much more stable platform to bring aboard the boat. The 'D' doesn't look like a turkey flapping its wings in the groove when the pilot uses the MOD DLC."

The HUD gives the pilot information on his windscreen and frees him to keep his eyes on his intended point of landing. The HUD provides altitude, airspeed, glideslope, azimuth, vertical speed, angle of attack, and throttle position with respect to the rate of descent. With the pilot able to make corrections during an approach without having to look inside the cockpit, landings are easier and the carrier environment becomes safer.

Lockheed Aeronautical Systems Company delivered the first of two KC-130T-30 stretched Hercules tankers to the Marine Corps Reserve on October 29, 1991. The aircraft (BuNo 164597), delivered to Marine Aerial Refueler Squadron 452 based at Stewart International Airport, N.Y., is the first stretched version ever ordered by the U.S. government, which has purchased over 1,200 standard-length versions over the past 35 years. With a 100-inch fuselage section forward of the wing and an 80-inch section aft of the wing, the KC-130T-30 has 30 percent more volume and 40 percent more troop-carrying capacity than a standard C-130.

Lockheed/John Rossino

NATMSACT Established

A November 12 ceremony at NAS Corpus Christi, Texas, marked the establishment in September of the Naval Air Training Maintenance Support Activity (NATMSACT). Capt. David Timmons is the first C.O.

The establishment of NATMSACT is the culmination of a trend over the last 15 years toward maintaining training aircraft with contract civilians in place of military personnel. As the Naval Air Training Command acquired TH-57, T-44, T-34C, and T-47 aircraft, many of which were "off-the-shelf" civilian designs and limited to the training command, it took advantage of established civilian maintenance programs as cost saving in terms of training, manpower, and stability. This concept was also inspired by the need to shift manpower to the expanding fleet of the 1980s.

NATMSACT provides contract administration and

cost/procurement analysis for the training command and conducts manpower evaluations and other logistic support services. It also maintains a detachment with each of the six training wings and with a strike detachment at NAF El Centro, Calif. Contract maintenance is used to maintain all of the Naval Air Training Command's 900 aircraft.

For the Record...

- A fifth industry team joined the AX competition in October, 1991, when **Rockwell** teamed with Lockheed's "Skunk Works" to submit a design proposal. (See *NA News*, Sep-Oct 91, p.5.)
- The Bell/Boeing **V-22 Osprey** returned to flight status on September 10 after grounding following the June 11, 1991, crash of the fifth prototype.
- An FA-18C successfully launched on October 18, 1991 an improved version of the McDonnell Douglas **Standoff Land Attack Missile (SLAM)** used with effect

during Operation *Desert Storm*. The improved SLAM includes software upgrades that increase the allowable altitude and ambient temperature for SLAM flights and make target designation and missile launch significantly easier.

- **Abraham Lincoln** (CVN-72), with CVW-11 aboard, returned to NAS Alameda, Calif., on November 28 from its maiden deployment. The Navy's newest carrier, which cruised from Alameda on May 28, 1991, evacuated personnel from Subic Bay during the Mount Pinatubo eruption, and operated in the Persian Gulf, maintaining close surveillance of Iraq in support of the U.S. Central Command.

- **Kitty Hawk** (CV-63) departed Norfolk, Va., on October 18, 1991, for a two-month transit around Cape Horn to its home port of NAS North Island, Calif., arriving December 11. Having completed the Service Life Extension Program at Philadelphia Naval Shipyard, the "Hawk," with about 50 aircraft of CVW-15 embarked,





Two SH-2G Seasprites from the Naval Air Test Center's Rotary Wing Aircraft Test Directorate, Patuxent River, Md., approach Arleigh Burke (DDG-51) during a detachment to the Atlantic Undersea Test and Evaluation Center at Andros Island in the Bahamas. The SH-2G is undergoing testing at NATC.

conducted port calls in South America and exercises with South American naval and air forces.

- **Helicopter Sea Control Wing 3**, the functional wing for light helicopter antisubmarine squadrons based at NAS Mayport, Fla., has been redesignated **Helicopter Antisubmarine Light Wing 1**.

- **HS-8** commenced transition to the **SH-60F Seahawk** in September 1991, the fourth NAS North Island, Calif.-based deploying squadron to operate the new antisubmarine helicopter. HS-8 will also operate the HH-60H strike version when deployed.

- **VFA-113** received its first Lot 14 version of the **night-at-**

tack FA-18C Hornet on October 18, 1991. The **Stingers** and **VFA-25**, based at NAS Lemoore, Calif., are both transitioning to the upgraded version, which features night-vision goggles, an onboard oxygen generating system, a ring-laser inertial navigation system, and the Navy Aircrew Common Ejection Seat.

- **Toppun gets Tomcats** – The Navy Fighter Weapons School at NAS Miramar, Calif., acquired in August 1991 the first of four F-14As to be assigned to the school. The **Tomcats** are being used by instructors to fly wing on students to coach them and

amplify their learning. The **Tomcats** are also being used by instructors to teach future adversary pilots how to fly against the **Tomcat**.

- **VMAQ-4** returned to NAS Whidbey Island, Wash., on November 14, 1991, from MCAS Iwakuni, Japan, its first operational deployment site. The reserve squadron was activated and replaced its

EA-6As with EA-6Bs, deploying in June to replace a VMAQ-2 detachment that was extended at Iwakuni because of Operation *Desert Storm*.

- **HML-771** returned to NAS South Weymouth, Mass., on October 4, 1991, from an eight-month deployment to MCAS Futenma, Okinawa, Japan. Mobilized on January 22, its first activation ever, the reserve squadron deployed to Okinawa on March 20 when, along with NAS New Orleans-based **HML-767**, it filled a gap in regular units caused by Operation *Desert Storm*.

- **VMA-513** returned to MCAS Yuma, Ariz., on October 24, 1991, after a 10.5-month deployment to MCAS Iwakuni, Japan. The

John F. Kennedy (CV-67) departs Norfolk Naval Shipyard, Portsmouth, Va., on October 1, 1991, after completing four months of upkeep, repairs, and modification. With the FA-18 avionics repair capability installed in the ship's Aviation Intermediate Maintenance Department, the carrier, which last launched A-7E Corsairs into combat during Operation *Desert Storm*, is now capable of supporting Hornets. With the cancellation of the carrier Service Life Extension Program, Kennedy will eventually receive instead a complex overhaul at the Philadelphia Naval Shipyard beginning in September 1993.

squadron's normal six-month tour was extended because of Operation *Desert Storm*, in which a detachment of the squadron served. VMA-513 was replaced at Iwakuni by **VMA-214**, taking the **night-attack** version of the **AV-8B Harrier II** on its first deployment.

- General Electric Aircraft Engines was awarded a \$44-million contract by the Navy to reopen the production line for the **T700-GE-401** engine, which is used to power **AH-1W** and **SH-2G** helicopters.

- The ninth production **F-14A** (BuNo 157988) has been restored and added to the collection of Navy aircraft on display at the **NAS Oceana**, Va., main gate.

- **VP-0919** was disestablished at NAS Point Mugu, Calif., in October 1991. The reserve squadron augmentation unit was established in April 1982 to provide additional personnel to regular patrol squadrons in event of mobilization.

- **VA-0689** was disestablished at NAS Whidbey Island, Wash., on September 30, 1991. The reserve squadron augmentation unit was established on October 1, 1983, to provide additional personnel to regular A-6 attack squadrons in event of mobilization.

- The **National Air and Space Museum** in Washington, D.C., opened a new WW I exhibit on November 12, 1991. The exhibit, "Legend, Memory, and the Great War in the Air," includes a small section on Naval Aviation's contribution to victory.



PH3 George J. Stuckert

VX-4: The Best Kept Secret in the Fighter Community – Almost

By LCdr. Bob Frantz, USNR

Maybe it's the 'X' in 'VX' that puts people off. Air Test and Evaluation Squadron (VX) 4 sounds very clandestine, very secretive, like some kind of research laboratory – not like a place with much action. Or perhaps the reason we get so little publicity and so few folks know who we are or what we do is our frequent 'Can't comment, can't say anything about that' response to questions about our role in *Desert Shield/Desert Storm* or other sensitive projects," speculated Captain Tom Perkins, VX-4's Commanding Officer.

He added, "We attract for duty here literally the number one or number two performer in each Navy and Marine Corps fighter and strike fighter squadron. For a guy to come here, pilot or RIO [radar intercept officer], along with the proven track record, he must have a solid reputation in his community and have a strong endorsement from his skipper. We get inputs from people in the fighter business and VX-4 alumni, but as we look at a guy, our admin boss, Commander Fighter Airborne Early Warning Wing, Pacific, [NAS Miramar, Calif.], and our op boss, Commander, Operational Test and Evaluation Force (COMOP-TEVFOR) [Norfolk, Va.], along with the Bureau of Military Personnel folks, arbitrate the final selection.

"The guy must not only be an outstanding tactical aviator, but must have excellent speaking and writing

ability," Perkins went on. "He must have organizational and time management skills and work well independently. As an Operational Test Director (OTD), he will be justifying his evaluation in test reports. He will also frequently be called upon to explain or defend his position in front of the heavies. Very importantly, he will need to disseminate [and exchange] information to [with] the fleet through his writing in various publications and in face-to-face briefings."

Known officially as the *Evaluators*, VX-4 is based at NAS Point Mugu, Calif., about 45 miles north of Los Angeles. Beyond the air station and Pacific Missile Test Center (PMTTC) gates and the squadron's cipher-locked doors is a command comprised of an average of 39 officers, including three Marines and one USAF exchange officer, and 281 enlisted personnel. Five civilian employees, including one Center for Naval Analyses representative for analytical support,

are also aboard. The current inventory includes seven F-14A/B *Tomcats*, two F-14D *Super Tomcats*, and a seven-plane FA-18A/C/D *Hornet* mix.

Although the squadron's primary focus concerns the Navy and Marine Corps fighter and strike fighter mission, there is nothing in the name "Air Test and Evaluation Squadron 4" to indicate that. However, unofficial inroads to identify VX-4 with its fighter mission have been made. Decals and ball caps that say "Navy Fighter Test Squadron" proliferate around VX-4.

The VX-4 statement of command responsibility states: "To conduct tests, evaluations, and investigations in the operational environment of aircraft weapons systems, support systems, equipment, and materials; to develop tactics and doctrine for their

A VX-4 F-14 Tomcat maneuvers at low altitude.



use as directed; and to maintain maximum combat effectiveness commensurate with assigned research, development, test and evaluation, and other assigned tasks."

Commander (Select) Tom Hejl, Operations Officer, put it in more basic terms, "We test it, rock it, roll it, slam it, jam it, beat it, drop it, and ram it aboard the boat! We put flight time on it and put it under high Gs. We see if average fleet-qualified crews can use it effectively and if average fleet-qualified sailors can maintain it and fix it in a reasonable amount of time after we break it. We do everything we can to put it in the environment of its intended use – combat." Prior to receipt by VX-4, fighter weapons have already undergone technical and developmental tests, overseen by the Naval Air



VX-4 FA-18 Hornets form up over California.



A VX-4 F-14A over Key West, Fla.

Systems Command, primarily at the Naval Air Test Center, Patuxent River, Md. Missiles receive those kind of tests down the street at PMTC.

A strike fighter pilot who said, "I'm peddling as fast as I can to get up to speed with the fighter guys in terms of missiles and Opeval [operational evaluation]," Hejl sought VX-4 duty. "I wanted to stay in the cockpit, which meant my options were the fleet readiness squadron, an adversary squadron tour, or Training Command duty. I wanted to stay in the community and remain in a place that thinks tactically. Being able to drop the two cents opinion as to whether we

buy or employ a fighter program is very appealing. In the fleet, you relish the opportunity to say, 'Admiral, I can't use this weapon or this needs to be fixed or let's buy a million of these.'

"VX-4 has a great mission with lots of tactical flying," Hejl added. "And the Point Mugu area, with its proximity to big cities and small towns, southern and central California weather, and nearby recreation, is another benefit."

The experienced *Hornet* pilot with 1,200 of his 2,800 hours in the FA-18 has strong feelings as to where Navy tactical aviation is going. "The future is fighter/attack," he said. "We must do both well with the same platform. We

can't afford single-mission aircraft anymore.

Operations Officer in any squadron is a busy job, but supporting the OTDs places an added burden on VX-4 ops. Cdr. Hejl goes nowhere without his day timer which he consults religiously. Although short cuts are frequently exercised, the OTD typically goes to the Chief Operational Test Director (COTD) who interfaces with ops for the required tactical assets. Hejl explained, "The needs are varied. The OTD may need someone to fight [one versus one], or he may need a multi-plane scenario, or he may need a radar bogey or an electronic jammer, or he may need a drone to fire a missile at, and so on.

"We use in-house assets first – our F-14s and FA-18s," he went on. "Then we can draw on folks from places like Topgun; the fleet adversaries, Fighter Squadrons (VFs) 126, 43 and 45 and Strike Fighter Squadron 127; our USAF counterpart, the 422nd Test and Evaluation Squadron at Nellis [AFB, Las Vegas, Nev.]; the Marines; the Fresno [Calif.] Air Guard; and various other USAF tactical fighter squadrons. We also use airborne assets and ranges here at the Pacific Missile Test Center. The working arrangements are both formal and informal. We also deploy detachments for short periods – perhaps 10 days aboard ship or to places like NAS Fallon, Nev., and Nellis AFB in support of our mission."

Chief Operational Test Director is one of the squadron's key jobs. Operational and project commitments made it impossible for the current COTD to participate in this article. However, C.O. Capt. Perkins held that job from June 1983 to March 1986. A 4,000-hour aviator (with 2,000-plus in the F-14 and 1,000-plus in the FA-18), Perkins is one of the very few aviators with over 1,000 hours in two current tactical types. He also picked up 700 hours as an F-8 *Crusader* pilot in VF-191. He still considers among his significant career accomplishments surviving two F-8 cruises aboard a 27 Charlie (small deck *Essex*-class carrier) – in this case, *Oriskany*.

The former COTD calls it the "squadron traffic cop. The COTD has to keep the hard-charging, highly motivated OTDs from bumping into each other. Those guys are turned on by the highly sensitive projects they manage. The visibility by senior commanders is very high. It's only natural for the OTD to want max assets for his own project, but the COTD must ensure that overall asset utilization is maximized."

An Assistant COTD billet is staffed to help alleviate the COTD's administrative burden. Lieutenant Randall Gross describes his job as "the COTD's X.O. I handle the admin side of testing and track the project flow."

The former VF-84 *Jolly Roger* RIO calls VX-4 "the final broker in the acquisition process." The Topgun graduate explained, "Although there may be a great deal of momentum in the system for the purchase, by the time we get the product, the final buy decision isn't made until the completion of Opeval. Congress and Department of Defense directives require that the decision maker see a weapon or system's operational capability in its intended environment against representative threats. A five-member civilian board, the Directorate of Test and Evaluation (DOT&E), exercises oversight of the military acquisition process, makes recommendations, and serves as a Congressional consultant prior to the funding decision."

Lt. Gross was also OTD for the F-14D Infrared Search and Track system, a passive sensor used to locate and track targets. It has significantly longer range than earlier models and the ability to filter out clutter.

Recent and current projects and activities include evaluation of the F-14D, F-14 strike fighter, ALR-67 Radar Warning Receiver, F-14A/B software, Naval Aircrew Common Ejection Seat, Advanced Medium Range Air to Air Missile, and, of course, VX-4 support during *Desert Shield/Desert Storm*.

In addition to Operational Test and Evaluation of new Navy fighter weapons and associated equipment, VX-4 continues to evaluate existing equipment tactics against new threats through Follow-on Test and Evaluation (FOT&E). FOT&E examples include tactical evaluation of the F-14A/B, FA-18A/C and D aircraft, and AIM-54C Phoenix, AIM-7M Sparrow and AIM-9M Sidewinder air-to-air missiles. Tactics for the F-14 and FA-18 in night-fighter scenarios have also been investigated and developed. This included mixed use of these aircraft in maritime air superiority and outer air battle missions. During 1990, at the Chief of Naval Operations's request, VX-4 supervised the initial Opeval of the T-45 trainer aircraft – the first such evaluation to be performed on a major training system.

Lieutenant Carl Lee knew little about VX-4 in the fleet. The Topgun graduate and F-14A/B software OTD explained, "Down at Miramar, VX-4's mission was not well known. However, I did hear that [the squadron] had a direct impact and was partly responsible for influencing the acquisition of fighter weapons and the development of tactics. I had a shot at a RIO billet at Topgun or an instructor job at VF-124 [F-14 fleet readiness squadron], but my skipper at VF-24 convinced me this would be career enhancing and I

would have a chance to directly impact the F-14 community."

Lt. Lee has testing responsibility for F-14A/B software. He explained the OTD's evaluation process once the master plan, the broad view document issued with substantial VX-4 input, has been published: "First, we develop a detailed test plan – all the what, where, when, and how steps. Then we negotiate the budget required for the plan, execute the plan, and generate the final report. Missions are tailored to see how the weapons control system performs in a tactical environment. The end result, and the final report, is to recommend for or against fleet introduction and to identify any required fixes. The report goes from the OTD to the C.O. for his review and feedback or input. Next, it flows to OPTEVFOR and then passes through DOT&E on its way to the Chief of Naval Operations."

Regarding F-14 software, Lee commented, "In today's aircraft, software is what runs the weapons system. Software changes have an impact on the system's capability. Every display in the F-14 is software driven. Every software revision must be operationally evaluated to see how it affects other systems within the aircraft and total mission capability."

In addition to *Tomcat* software responsibility, Lt. Lee is the F-14A/B NATOPS (Naval Air Training and Operating Procedures Standardization) and TACMAN (Tactical Manual) Model Manager. The NATOPS manual is like an owner's manual. It gives a detailed description of the hardware and software and how it works. The TACMAN is the user's



guide; it explains how the weapon is best employed. VX-4 solicits and collects numerous inputs and is responsible for consolidating them and ensuring the publications are current and changes or revisions are disseminated in a timely manner. The VX-4 Newsletter also serves as an excellent source for timely inputs.

Perhaps consistent with Cdr. Hejl's comments regarding the future of Navy tactical air being in multimission strike fighter aircraft, VX-4 is currently evaluating F-14 strike fighter hardware, software, and tactics. Technically known as F-14 air-to-ground integration, the new mission is more readily identified in the squadron and community as a transition of the F-14 *Tomcat* to the F-14 "Bombcat."

One of the OTDs on the Bombcat project is Lieutenant Commander Doug Whitener. Coming up on 3,000 hours, 1,500 in the F-14, the fighter pilot offered this insight, "The F-14 was originally designed to have both capabilities. It's been an off-and-on project since 1983. Right now, we're in Phase 1 of the project which certifies the F-14 as a visual bomber capable of delivering Mk 80-series unguided weapons. VFs 21 and 154 in the Pacific and VFs 142 and 143 in the Atlantic are among the first to be equipped with the hardware and to have the capability to carry out this mission."

He continued, "In Phase 2, we will test the F-14 with cluster weapons, laser-guided bombs, and tactical air launch decoys used to defend against surface-to-air missiles. During Phase

"Vandy One," carrying on VX-4's flagship tradition, is an F-14A with a gloss black paint scheme.



3, we will evaluate the use of smart weapons, including the High Speed Anti-Radiation Missile and Stand-off Land Attack Missile." Whitener is convinced that "the F-14D is an excellent air-to-ground platform and could be every bit as capable, because of its digital weapon system, as the USAF F-15E *Strike Eagle*."

Numerous advantages for duty at VX-4 have been identified by the OTDs. Among them are the opportunity to be on the leading edge of technology and to influence the acquisition of aircraft and associated systems and weapons, contribute to the development of tactics, do tactical flying, shoot missiles, be qualified in two tactical aircraft (F-14 and FA-18), and work with a great deal of freedom and independence. The opportunity to work with high-quality peers, visibility in the tactical aviation community and by senior officers, and the opportunity to live in a pleasant area are also frequently articulated advantages.

The events that began to unfold in midsummer 1990 and culminated in the most furious and aggressive air campaign and ground attack since WW II did not go without VX-4's direct participation. Lieutenant John Richard Hatten, VX-4's FA-18 department head, was one of the three OTDs in theater briefing Navy and Marine Corps units primarily on specific threat tactics, aircraft, and electronic warfare.

A 1,500-hour *Hornet* pilot and Topgun graduate, Hatten received tremendous satisfaction as a result of his contribution in making the ALR-67 Radar Warning Receiver combat capable in time for *Desert Storm*. The OTD commented, "Crews were turning the box off. It was ineffective in combat. It could not detect and identify current surface-to-air missile or fighter threats. By working with the engineers and technicians, we were able to conceive, implement, and test software changes that made the [ALR-67] a combat-capable device." For his work on the project, Hatten was recognized as the 1990 COMOPTEVFOR Operational Test Director of the Year.

Although Opeval implies that there is a tangible product to test in an operational environment, VX-4 stresses the benefit of getting involved in the acquisition process as early as possible. Hatten explained, "The idea is to give an operational perspective early on. Direct liaison with the contractor during the design phase allows the ultimate user to influence the acquisition. With early operational inputs, the

weapon or product is less likely to fail when it reaches Opeval."

Executive Officer Commander Greg Ingles, who began his career as a Marine F-4 pilot, remarked, "The project load is more intense than ever before, but the people and flying [*Hornets* and *Tomcats*] make the job terrific." He also pointed out that the same perk of being qualified in two tactical types also accrues to the enlisted maintenance personnel. "They get the opportunity to have dual [Naval Enlisted Classifications]. It is career enhancing, makes them more competitive and more valuable to the Navy. It also gives them more geographic options in where they can go upon completion of their tours here."

Comparing his present exposure to his COTD tour, C.O. Capt. Perkins commented on what makes VX-4 what it is: "the extraordinary people. It's like they were cut from the same mold. Their calibre, professionalism, and work ethic is like a religion. It never changes except for the magnitude and intensity of projects. A concern I have is that the project load is such today that it cuts down on our opportunity to carry our message to, and solicit inputs from, fleet squadrons.

"Some of the best ideas for tactics and hardware originate with the guys who are closest to the threat and fly everyday in the fleet," he went on. "We have to ensure the communications channel among the so-called Desert Six [VX-4, VX-5, Navy Fighter Weapons School (Topgun), Navy Strike Warfare Center (Strike U), Carrier Airborne Early Warning School, and Marine Aviation Weapons and Tactics Squadron] participants and with the fleet stays open and is easy to use. Whether the input is to the VX-4 Newsletter, Topgun Journal or through a variety of other methods, we have to be determined to get valid information to and from the people who benefit from it most "the fleet user - as quickly as possible."

The controversy surrounding the Navy's decision to cancel further procurement of the F-14D and to fund new variant FA-18s has not escaped the OTDs. The test directors are aware of the potential political ramifications of much of what they do. Capt. Perkins has a bottom line on the controversy: "Our job at VX-4 is as it has always been - to ensure that support for the fighter role is maintained and fighter capability is maximized. Whatever the vehicle, it should be incidental to that." ■

"Full of Glorious Achievement":

A History of USS Lexington (CV/CVA/CVS/CVT/AVT-16), 1943-1991

By Robert J. Cressman



With the United States an uneasy onlooker to the conflict in Europe, Congress, on July 19, 1940, in the "Two Ocean Navy Act," authorized the building of over a million tons of ships for the Navy to ready it to meet the challenges presaged by the war clouds gathering ominously over the Far East and Europe. Included in that tonnage were several aircraft carriers, one of which, CV-16, was designated at the outset simply by its alphanumeric hull number. On December 28, 1940, in keeping with the then-current practice of naming carriers for famous former ships, President Franklin D. Roosevelt chose the name *Cabot* — one of the first six warships of the Continental Navy — for the unnamed CV-16, whose keel was laid at Quincy, Mass., by Bethlehem Steel Company's Fore River yard on July 15, 1941.

Less than five months later, however, the Japanese attack on Pearl

Harbor swept the U.S. into WW II. In May 1942, planes from *Lexington* (CV-2) and *Yorktown* (CV-5) turned back a Japanese thrust toward Port Moresby, in the Battle of the Coral Sea. "Lady Lex," though, had suffered severe damage at the hands of the enemy, and had to be sunk by friendly forces when fires raged unchecked onboard.

Many of the workers at Bethlehem's Fore River yard, who had built *Lexington* (CV-2), still labored there. Such was the shared depth of feeling that they cabled Secretary of the Navy Frank Knox en masse urging him to reassign the name *Lexington* to CV-16. Knox did so on June 16, 1942.

Lexington slid down the ways on September 26, 1942, a bottle of Great Western champagne smashed on her bow by Mrs. Theodore Douglas Robinson, who had christened her immediate predecessor and who, like the shipyard workers, mourned the loss of "Lady Lex." Rear Admiral

Lexington launches a North American FJ-4B Fury from her port bow "cat" on April 11, 1961.

Frederick C. Sherman, who had commanded *Lexington* (CV-2) at Coral Sea, addressed the assembled guests, declaring that the new ship was destined for a "great future," stating: "Today, the new *Lexington* takes up where the old left off." Desiring that her career would "be full of glorious achievement," he predicted that she would "play her part" in carrying the war to the enemy. "She will help carry out our pledge," he concluded in Lincolnian fashion, "that freedom shall not perish from the earth."

The fifth ship of the U.S. Navy to bear the proud name *Lexington* was commissioned at the South Boston Navy Yard on February 17, 1943, Captain Felix B. Stump in command. After fitting out, *Lexington* — the fourth *Essex*-class carrier to enter service —

sailed on April 13, 1943, for Chesapeake Bay, where, at 1745 on April 23, Commander Bennett W. Wright, the ship's air officer, made the first takeoff from her deck in a North American SNJ-4C (BuNo 27071). He made the first arrested landing six minutes later. Soon thereafter, she embarked Air Group 16 - equipped initially with Grumman F4F-4s (later replaced by Grumman F6Fs), Grumman TBF-1s, and Douglas SBD-5s.

Following her shakedown out of Trinidad and post-shakedown repairs and alterations at Boston, *Lexington* - nicknamed "The Blue Ghost" because of her initial camouflage scheme - sailed on Independence Day 1943. Transiting the Panama Canal for the first time on July 26-27, the new carrier reached Pearl Harbor on August 9 to commence an intense period of training, punctuated with upkeep at Pearl, that would last into September.

Lexington sailed for the war zones on September 11, 1943, accompanied by the small fleet carriers *Belleau Wood* (CVL-24) and *Princeton* (CVL-23). On September 18, "The Blue Ghost" launched her first air operations against an enemy objective when she hurled strikes against Tarawa in the Gilbert Islands as a prelude to the landings that eventually wrested that atoll from the Japanese. Her planes hit Wake on October 5 and 6.

However, it was not until the strikes against Mille atoll, also in the Gilberts (November 19-24), that *Lexington* planes drew first blood in air-to-air combat. Interestingly, it was a radio-gunner - not a fighter pilot - who performed the feat, when ARM3c William J. Hisler shot down a snooping "Betty" on November 20, 1943, with a well-directed burst into its cockpit after two SBDs on a search mission chased the bomber for over 20 minutes.



Making her way through the ice in Boston harbor on February 17, 1943, the day she was commissioned.

"The Blue Ghost" raided Kwajalein on December 4, but that night a "Betty" put a torpedo into her port quarter, knocking out her steering gear. *Lexington* reached Pearl on December 9 en route to the Puget Sound Navy Yard, where she arrived three days before Christmas 1943.

Emerging from the yard on February 20, 1944, *Lexington*, with Air Group 19 embarked for the trip, steamed via San Francisco and Pearl Harbor (where she exchanged Air Group 19 for Air Group 16) to Majuro, where she broke Vice Admiral Marc A. Mitscher's flag as Commander, Task Force (TF) 58. Following a strike against Mille (March 18) en route, *Lexington* hurled strikes against Hollandia between April 21 and 26, supporting Army landings in Dutch New Guinea. Her planes then hit Truk, long regarded as the toughest target in the Japanese empire, on April 29 and 30.

Her planes swept in over Saipan on June 11 and virtually destroyed Japanese capability to launch aircraft from the fields on that island. On June 15, she underwent her second torpedo attack but emerged unscathed. *Lexington* then played a role in the Battle of the Philippine Sea (June 19-20) as American Naval Aviators virtually destroyed Japanese naval air capability. The strikes on Guam which followed (June 25-July 5) proved to be the last to be carried out by Air Group 16, for Air Group 19 relieved it on July 9, 1944.

Lexington and her TF-58 consorts then pounded Guam (July 18-21), the Palaus (July 25-27), and the Bonins (August 4-5) before replenishing at Eniwetok in the Marshalls. *Lex*' planes paid a return call on targets in the Palau in support of the invasion of Peleliu (September 6-8) before she and her pilots moved on to Mindanao (September 9-10), the Visayan Islands (September 12-14), and the Manila area (September 21-22), operating against targets along the west coast of Luzon in preparation for the reconquest of the Philippines. She hit the Visayan Islands again (September 23-24) before she retired to the fleet base at Ulithi in the western Carolines.

Steaming forth from Ulithi on October 6, *Lexington* and other fast carriers hurled their planes against targets on Okinawa on October 10, and then against Formosa (October 12-14). Covering the landings in Leyte Gulf subsequently, *Lexington* planes joined in sinking the Japanese battleship *Musashi* and scoring hits on a trio of cruisers on October 24. *Lexington's* planes then teamed with

those from sister ship *Essex* (CV-9) to sink the carrier *Chitose* and, alone, scored damage that led to the loss of the carrier *Zuikaku*. They also helped destroy the carrier *Zuiho* in the same action.

On October 31, VAdm. Mitscher and his staff departed the ship, but *Lexington* resumed her relentless pounding of enemy ships soon thereafter, sinking the heavy cruiser *Nachi* off the coast of Luzon on November 5. The same day, the hot breath of the "Divine Wind" blew malevolently toward *Lexington* when a kamikaze crashed the carrier's secondary conning station. Within 20 minutes, however, her damage controlmen had restrained the flames while her gunners knocked down a suicider bent on crashing nearby sister ship *Ticonderoga* (CV-14). *Lex* carried out strikes the next day before retiring to Ulithi.

Following battle damage repairs, *Lexington*, with Air Group 20 embarked, sailed for the war zone on December 11, 1944. Soon, she and her consorts pounded Luzon, supporting the Mindoro landings (December 14-16). She then weathered a typhoon en route back to Ulithi, which she reached on December 23.

Under way again on December 30, *Lexington*, during the first nine days of 1945, hurled strikes against Japanese positions on Formosa and Luzon before the fast carriers scourged Japanese shipping and airfields in and along the South China Sea. Enemy targets at Saigon, Camranh Bay, Hong Kong, the Pescadores, and Formosa all felt *Lexington's* lethal sting. Leaving the Yellow Sea behind them on January 20, *Lexington* pilots paid a return call to Formosa on the 21st and to Okinawa on the 22nd.

Replenishing at the fleet's base at Ulithi, *Lexington* - with Air Group 9 embarked in place of Air Group 20 - sailed on February 10 for Japanese home waters, and on February 16 and 17, her planes blasted Japanese airfields near Tokyo. *Lexington* then provided close air support for the Iwo Jima landings between February 19 and 22 before her pilots paid a return call to Tokyo targets (February 25) and carried out a strike and photographic mission against Amami Gunto, in the Nansei Shoto chain, on March 1.

Arriving back at Ulithi on March 4, *Lexington* disembarked Air Group 9 on the 6th and embarked Air Group 3 and passengers the same day for the voyage to Bremerton, Wash. She sailed on the 7th. After touching at

80-G-35657

Lexington is launched at the Bethlehem yard at Fore River on September 29, 1942.

80-G-K-13954



Pearl Harbor en route (March 17-20), she reached the Puget Sound Naval Shipyard for repairs and alterations on the last day of March 1945.

The refitted *Lexington* emerged from the yard on May 22, 1945. Proceeding thence via Alameda, Calif., and Pearl Harbor, she joined Rear Admiral Thomas L. Sprague's task force at San Pedro Bay, Leyte. She sortied on July 1, 1945, and over the ensuing weeks her planes took the war to the enemy's doorstep, blasting its airfields on Hokkaido and Honshu, attacking the remnants of its fleet in its battered lairs at Yokosuka and Kure, and bombing its factories in the Tokyo area.

With the cessation of hostilities on August 15, *Lexington* planes flew patrols over Japan and air-dropped supplies to prisoner of war (POW) camps on northern Honshu before providing cover for the occupation of the erstwhile enemy's homeland. During that early postwar period, on August 18, 1945, *Lexington* became flagship for Vice Admiral Frederick C. Sherman, Commander, First Carrier Task Force, Pacific. On the day the surrender accords were signed on-board the battleship *Missouri* (BB-63) in Tokyo Bay (September 2, 1945), *Lexington* was at sea, her planes patrolling over the Nagoya-Hamamat-

su area. She entered Tokyo Bay on September 5, dropping anchor for the first time since July 11

After further operations in Japanese waters – more patrols and supply drops to POW camps on northern Honshu – *Lexington* ultimately departed Tokyo Bay on December 3, 1945, and reached San Francisco on the 15th.

Following a stint of operations conducted between San Diego and Pearl Harbor, *Lexington* departed San Francisco on May 27, 1946, and reached Port Townsend, Wash., three days later. Placed in "mothballs" at the Puget Sound Naval Shipyard, she was decommissioned on April 22, 1947, having earned the Presidential Unit Citation and 11 battle stars for her WW II service.

The Korean War-prompted expansion of the fleet meant a return to service for *Lexington*. Reclassified as an attack aircraft carrier, CVA-16, on October 1, 1952, she entered Puget Sound Naval Shipyard to commence modernization on September 1, 1953. Recommissioned on August 15, 1955, Captain Alexander S. Heyward, Jr., commanding, *Lexington* departed her conversion yard on November 2 and reached her new home port, San Diego, four days later. Then, following post-shakedown repairs and alterations, *Lexington* returned to San Diego, whence she proceeded to Pearl Harbor on her maiden voyage to the Western Pacific (WestPac) since recommissioning, ultimately reaching Yokosuka on June 25, 1956.

Over the next three months, *Lexington* operated out of Yokosuka, Kobe, Buckner Bay, Iwakuni, and Sasebo, punctuating the training with a recreation visit to the British Crown Colony of Hong Kong. *Lexington* returned to San Diego on October 18, via Pearl Harbor, and then shifted to Bremerton, arriving on November 7 to commence post-deployment repairs and alterations. That deployment set the pattern for cruises over the next five years, which were marked by international crises. As an instrument of national policy, *Lexington*, alternating her WestPac deployments with rota-

tion home to San Diego and voyage repairs there or at Puget Sound, showed the flag abroad for almost a half decade.

The crisis in Lebanon in July 1958 curtailed her refresher training and resulted in her deploying to WestPac waters, where she joined the Seventh Fleet on August 7. A little over two weeks later, on August 24, Red Chinese artillery began shelling the Nationalist Chinese islands of Quemoy and Matsu, prompting *Lexington's* deployment among the ships of the Seventh Fleet to the Taiwan Straits at various times during the next four months. When the crisis abated, after the Soviet Union threatened to withhold support from Mao Tse Tung's regime if the Communist Chinese leader did not renounce his goal of recovering Quemoy, *Lexington* returned to San Diego on December 19, 1958.

Lexington again deployed WestPacward on April 26, 1959. She resumed operations concerning the security of embattled Quemoy and Matsu in June, July, and October, and, in between those periods of contingency operations, steamed on alert in the South China Sea as the U.S. deployed naval forces to safeguard its national interests during the Laotian crisis in August and September of 1959. She returned to San Diego on December 2, 1959. Unrest in Laos the following year again saw *Lexington* carrying out contingency operations with the Seventh Fleet during December 1960 and into January 1961. Upon the conclusion of those operations, *Lexington*, slated to relieve *Antietam* (CVS-36) as training carrier at NAS Pensacola, Fla., returned to the West Coast, whence she proceeded, via Cape Horn, to New York Naval Shipyard.

Reclassified as an antisubmarine warfare carrier, CVS-16, on October 1, 1962, *Lexington* briefly resumed the role of an attack carrier as tension developed between the United States and the Soviet Union over the presence of the latter's missiles in Cuba. Ultimately, however, in the wake of the diffusion of the crisis situation, *Lexington* – which had operated off Jacksonville during a portion of that tense time – relieved *Antietam* on December 20, 1962.

Reclassified as CVT-16 on January 1, 1969, and subsequently as AVT-16 in 1978, *Lexington* performed that important task with distinction, operating out of Pensacola for the next 27 years training Naval Aviators in their demanding and dangerous profession. ■



USN 1169252

The training aircraft carrier USS Lexington (CVT-16), pierside at NAS Pensacola, Fla., January 1977.

Farewell, Lady Lex

Story and Photos by Cdr. Stephen R. Silverio

It seemed as if nothing could ever stop her. She survived everything from the indignities inflicted upon her by the enemy during WW II to the attempts by student Naval Aviators to carrier qualify on her flight deck. "Blue Ghost" became her nickname after repeated reports of her sinking proved time after time to be premature. This spectral image is appropriate because she was commissioned with the name and the fighting spirit of her predecessor, USS *Lexington* (CV-2) lost in the Battle of Coral Sea. She has been called "Lady Lex" because of her pride, her dignity, and her tenacity.

What takes 40,000 tons of cold metal and transforms it into living being worthy of our admiration and respect? The answer is simple: the crew. Nothing could be more evident than the affection of her present and former crew members at the decommissioning ceremony held at NAS Pensacola, Fla., on the cold, windy, overcast morning of November 8, 1991. It would have taken more than a little weather to keep them away. Whether celebrated hero or nameless sailor, each was well represented by the members of the Blue Ghost Association and former members of Air Groups 16 and 19. But the faces that betrayed the torment of watching as *Lexington's* commissioning pennant was struck belonged to the 13 former commanding officers who were present for this last naval ceremony of

her long career.

Captain William (Bill) Kennedy, *Lex's* last skipper, presided over the decommissioning ceremony. Participants included Chief of Naval Operations Admiral Frank B. Kelso II, the principal speaker; and Assistant Chief of Naval Operations (Air Warfare) Vice Admiral Dick Dunleavy, who read the decommissioning directive. Also on the platform with brief remarks were Vice Admiral John Fetterman, Chief of Naval Education and Training; the Honorable Earl Hutto, Congressman from Panama City, Fla.; Jerry L. Maygarden, Mayor of Pensacola; and Rear Admiral William R. McGowen, Chief of Naval Air Training.

With the orders "March off the crew, haul down division colors, secure the watch" came the end of an era. *Lexington's* officers, chief petty officers, and sailors began to march down the gangway. A T-2 painted in the training command's colors of white and orange flew by. Taps played as the commissioning pennant was lowered. It was presented to the Commanding Officer by the Command Master Chief. The ship's log and spyglass were also presented to the C.O.

In memory and tribute to the bravery and sacrifice of those crew members who lost their lives in defense of our nation came the fly-by of an F4F-3 *Wildcat*, a group of SNJ



Capt. Kennedy, C.O. of *Lexington*, the last to leave his ship.



Lexington sailors man the rails.

Texans, and the *Blue Angels*.

If you are a Naval Aviator currently serving, you probably got your first traps and cats on "Lady Lex." She may have been the first aircraft carrier you had ever seen up close and personal — most likely during an early morning run as a "poopie" in Aviation Officer Candidate School or holding overhead in your T-28C *Trojan* or T-2 *Buckeye*. The spirit of the "Blue Ghost" will live on in Naval Aviation. At this time, we don't know where her final berth will be. But she will be available for all of us to visit, to remember, and to feel the pride. ■



Dignitaries attending the ceremony salute the flag.

VC-5 and Mount Pinatubo

By Lt. Michael C. Heavey

The *Checkertails* of Fleet Composite Squadron (VC) 5, based at NAS Cubi Point, R.P., provide an impressive list of services throughout the western Pacific, including a wide variety of threat simulation such as dissimilar air combat training, war-at-sea exercises, and target services. The squadron also provides VIP transportation, drone recovery, insertion of U.S. Marine Corps "Fire Teams," opposed search and rescue (SAR) exercises, and SEAL (sea-air-land) team spie rigging and fast roping. VC-5's Douglas A-4 *Skyhawks* furnish adversary service for Seventh Fleet and Allied forces throughout the western Pacific, while its Sikorsky SH-3G *Sea Kings* provide the primary SAR and medical evacuation (medevac) functions for Subic Bay.

Coup attempts, earthquakes, monsoons, strikes, typhoons, restrictions.... VC-5 has seen it all.

That was until June 1991 when the *Checkertails* faced the ultimate challenge. What started as small vents in Mount Pinatubo's peak proved to be one of the largest volcanic eruptions of this century. Just at the southern edge of the Crow Valley target range, Mount Pinatubo is only 20 miles north of the Subic naval complex and 45 miles northwest of Manila, the Philippine capital.

When the steam vents appeared in early April, they became a routine sight for VC-5 aircraft to fly over, photograph, and marvel at as a spectacle of nature. As seismic activity increased at a rapid pace, members of the U.S. Geological Survey team knew a major eruption was imminent.

On the morning of June 12, Mount Pinatubo awoke after a 600-year slumber with a giant mushroom cloud topping 60,000 feet. Luckily, Subic and Cubi Point had no ash fallout thanks to favorable winds out of the southwest, blowing the ash over the South China Sea.

Due to the probability of continued volcanic activity, 10 of 13 A-4's evacuated Cubi and a detachment was set up in Misawa, and later At-

sugi, Japan, to provide adversary training for Carrier Air Wing 5. This was in addition to a detachment already in Osan, Korea. The numerous widely dispersed detachments posed an incredible manning and logistics problems for the squadron, but the real test was to come.

The volcano coughed up more ash on June 13 and 14; this time the winds were not favorable. The winds were predominantly out of the north and the naval complex was sprinkled with an inch of ash. Mount Pinatubo was quickly gaining respect, and what was once a photographic sight now loomed overhead as a terrifying power.

On June 15, now dubbed "Black Saturday" by those who lived through the disaster, the sun never shined at Subic Bay. Thirty-six hours of nature's unleashed fury: a black blizzard of rain mixed with ash and quarter-size rocks, volcanic thunder, brilliant lightning, and the earth shaking for nearly six hours – nonstop! All of this coupled with a typhoon.

When the sun finally rose on June 16, the naval complex looked like a nuclear wasteland. Mount Pinatubo had dumped 8 to 10 inches of ash on the base. Two hundred forty buildings had been severely damaged. The thick green jungle was now a collection of gray pickup sticks. The mixture of water and ash proved to be devastating, stripping the trees of their branches and leaves. The eruptions threw no less than four cubic kilometers of ash and rock into the air and blew a two-mile crater out of Mount Pinatubo's peak.

On June 13, VC-5 had been tasked with flying a passenger transfer from Baguio City, approximately 125 miles north of Subic Bay, to the American Embassy in Manila. While Checker 42 was en route to Manila the volcano erupted, spewing ash into Cubi's airspace. The ash fallout forced the SH-3G to remain overnight at the embassy and subsequently for "Black Saturday." The first aircraft to fly after the disaster was Checker 42. Commander Jeff Stine, VC-5 commanding



Officer, and Lieutenant Millard Porter manned Checker 42 on the morning of June 16, unaware of the extent of the disaster that had befallen Subic Bay.

"As we approached Corregidor Island, I realized the power of the eruption," said Porter. "It looked like it had actually snowed in the Philippines."

"Getting closer to Cubi, the ash cover increased; it looked like a moonscape," Cdr. Stine stated. "It really didn't look that bad, but then I saw a DC-10 with its nose wheel off the ground, caused by the heavy ash on the tail. I saw the rest of the base...then I realized the magnitude of the destruction." The DC-10 belonged to Hawaiian Airlines, which makes weekly flights from Los Angeles to NAS Cubi Point, transporting military members and their dependents. A U.S. Air Force C-141 jet transport had also suffered a similar fate; its ash-covered tail section forced its nose 10 feet off the ground.

The NAS Cubi Point tower had limited capability and Checker 42 landed at the lower carrier pier, which is a mile across the airport from the VC-5 hangar. The helicopter's wheels sank in the ash one to two inches and could not be towed uphill to the hangar, so it was flown across the field to be parked.

On June 17, the first order of business was to survey the damage. Cdr. Stine noted, "Nobody had taken off or landed prior to VC-5, but we quickly



Lt. Lance Patterson

A VC-5 TA-4J evacuates NAS Cubi Point during one of Mount Pinatubo's early eruptions.

could and wrote the book where needed.

As the ground soaked up the rains brought by Typhoon Yunya, blowing ash storms were common, creating a challenging environment in which to land an aircraft. Lieutenant (jg) Brian Snell explained, "Landings were a challenge. There was a fine layer of ash everywhere. Normal hover landings could not be made, so all landings were no hover." The no-hover approaches were flown to avoid the complete gray-out caused by the dust cloud generated by rotor downwash – creating instant instrument flight rules (IFR) conditions and possibly flaming out the engines. When IFR conditions exist, the pilot lacks all ground references and must fly only on instruments. Flying on instruments within close proximity of the ground requires precision airmanship.

After the first few days of flight operations, the engine blades were looking shiny new because the ash acted like sandpaper on them; the engine blades developed only a slight increase in exterior corrosion. Amazingly, the aircraft had no problems with the ash operations due to the meticulous inspections by maintenance personnel who worked overtime to keep the aircraft flying.

An undermanned maintenance department worked in poor conditions without electricity or running water in the squadron. This dedicated effort enabled the squadron to maintain 100-percent sortie completion rate.

Only a few days after the eruptions, the *Checkertails* were tasked with flying the U.S. Geological Survey teams to the volcano so they could lay new seismic sensing equipment; the old equipment was ash covered or destroyed by the fierce eruptions.

VC-5 was once again blazing new trails. To fly the geologists and their equipment to the volcano required precision flying around an active crater capable of erupting at any time. Skilled airmanship was necessary. The different drop zones where the geologists needed to place their equipment were not readily accessible, even by helicopter. The rock and ash-covered mountain had few flat areas in which to land.

The aircrews often made precarious one-wheel landings to allow the volcanologists to get out and set up their equipment. Due to the high gross

weight of the helicopter, coupled with the mushy, ash-covered terrain, the aircraft tended to sink into the ground. This required the pilot to hold power to prevent the helo from settling in the ash.

Snell said, "Basically, we were hovering with one wheel stuck in the ash as the geologists unloaded their equipment. It was quite a challenge to provide a steady platform for them to work."

Lieutenant (jg) T. J. Sutherlin recalled an interesting mission, "On one hop we found a nice flat area to land so the geologists could set up their sensing equipment. We dropped them off to do their work. When we came back to pick them up, we could see they had set up an antenna in the middle of the area so we couldn't land. We hoisted them up in the horse collar instead. That's just an example of the changing situation we were always dealing with."

The volcano flights are in addition to the already high level of support missions required in the Subic area. Due to the shutdown of Clark Air Base, VC-5 helicopters provide the only SAR/medevac services in the Philippines. The squadron also supported Operation *Fiery Vigil* (evacuation of dependents from Subic) and damage assessment flights over U.S. bases

As of October 1991, VC-5 had flown over 70 missions to Mount Pinatubo since the major eruptions. The squadron continues missions on a daily basis, and aircrews are gaining tremendous experience working in such adverse conditions. These operations in and around the volcano have become routine in nature – that is, as routine as things can be when you fly around the mouth of an active volcano. ■

AMH3 Edward Perlick



Mount Pinatubo erupts in the background as a VC-5 SH-3G picks up members of the U.S. Geological Survey team.

realized we had the ability to fly after the eruptions."

Lieutenants Mark Watson and Cliff Keeney flew to Manila to pick up Ambassador Nicholas Platt, U.S. Ambassador to the Philippines, and take him to view the damage at Subic. Ambassador Platt was anxious to see firsthand what had happened to the Navy's largest overseas facility. There was a low ceiling, light rain, and the volcano was acting up again. "Our biggest concern," said Watson, "was how to avoid the ash. We couldn't fly in the clouds because we didn't know where the ash was."

Being the only squadron flying in the Philippines created an incredible demand for support: flying government and military officials from Manila to Subic and Clark, medevac missions, flying food and supplies to security forces at San Miguel Communications Station, and reconnaissance of the damaged areas.

VC-5's SH-3Gs soon became the primary platform to view the volcano and keep base commanders informed of Mount Pinatubo's activity.

Every day posed new problems for flight operations; there was no source of information on volcano operations. The Naval Air Training and Operating Procedures Standardization program does not address "ash ops" nor had any squadron pilots ever encountered anything like Mount Pinatubo. Essential missions had to be flown, so the *Checkertails* researched the best they

F2Y Sea Dart

By Hal Andrews

With the advent of its first two real carriers, *Lexington* and *Saratoga*, the Navy gave up on seaplane fighters with their ungainly floats. Early in WW II there was a brief resurgence of interest, but the answer was the same. The Japanese navy did find them of some use at remote locations, but only against nonfighter opponents.

In the late 1940s, the picture changed. Continuing Navy efforts to find solutions to hydrodynamic deficiencies of flying boats led to new hull forms and successful exploration of hydroskis. Hydroskis could even allow landplanes to take off and land on water, operating from a smooth sloped beach. Alternatively, they would provide the hydrodynamic lift at higher speeds so that flying boat hull designs only needed to consider lower water speeds and aerodynamic drag in flight. Jet engines also promised a solution to the propeller problem in flying boats – keeping them out of the damaging spray from the hull during takeoffs and landings.

With increased interest in applying the new technology to jet fighters, both the Navy and Convair pursued potential transonic fighter configurations using either blended-hull or twin-hydroski configurations. Convair, as the subsequent winner of a competition for a directed research and fighter design program, extended its efforts with radio-controlled models in addition to the more usual experimental techniques. By 1950, utilizing the thin section delta wing design that would become a Convair supersonic jet airplane trademark, the potential of a water-based supersonic fighter using twin retractable hydroskis was such that performance exceeding that of carrier-based fighters then in development could be expected. Locating the jet intakes on top of the fuselage/hull, over the wings, could eliminate the jet engine inlet water ingestion problems. With many questions to answer, the program focused on a research aircraft, designed to confirm both the hydrodynamic and flight performance potential. With go-ahead in January 1951, a contract was signed in June for two aircraft, carrying the Navy research designation Y2-2 – the Y for

Convair followed by the company model number.

Designed for two afterburner-equipped, 6,000-pound thrust Westinghouse J46 jet engines, earlier lower-thrust J34s without afterburners would be installed until the new engines were flight qualified. A tailless delta, the 60° wing was midmounted on the hull, with the engines side by side above the wing and a single large half-delta vertical tail well aft. Inlets were in the shoulder position just aft of the wing root leading edge, with the cockpit and its V shape windowed clamshell canopy well forward. The two forward-mounted hydroskis retracted into wells in the hull bottom, providing uninterrupted fairing in flight. Flight controls, including wing trailing edge elevons for pitch and roll, were powered. Split surfaces at the aft end of the hull opened symmetrically in flight as speed brakes or individually as water rudders when taxiing. With the lower hull and wings watertight, all servicing, including engine removal, was from above.

While design and construction of the two aircraft were proceeding, interest in their potential, using various sheltered water shipboard basing concepts, increased to the extent that a production program was planned. In August, they were redesignated XF2Y-1 and a contract for an initial 12 production F2Y-1s was signed – a typical initial order for a Navy production program in that era. Equipped with fire control systems, including radar, they would be armed with extendable multiple rocket packs or four 20mm guns. These, plus the complete redesign for production, were extensive enough to result in a new company model 12,

though the external appearance was little different.

Ground testing and land and water taxi tests of the completed first XF2Y-1 began in December. With the extensive changes in the production *Sea Darts*, as the F2Ys had been named, work was concentrated on them and the second XF2Y-1 put on hold – eventually to be canceled.

The skis were mounted on oleo struts; they had small wheels at the aft end, with a swiveling tail wheel under an aft fuselage ventral fin. With the skis in either the extended or intermediate position, the *Sea Dart* could taxi on the apron and on the ramp into

XF2Y-1



or out of the water. Afloat, the trailing edge of the wing was on the water surface, providing lateral buoyancy.

The early water trials soon showed the wisdom of the research approach: high-speed runs caused excessive vibration. Oleo strut and structural response frequencies were involved, and changes to the struts gave some improvement. Continuing high-speed tests, including a liftoff in January 1953 which caused vibratory loads sufficient to fail the flight test nose boom,



YF2Y-1

resulted in further changes. These included changes to the skis as well, and improvement was adequate for a successful first flight in April.

Testing continued through 1953, aimed at contributing to the F2Y-1

early November for the first Navy evaluation, but the next day the YF2Y-1 was destroyed in a spectacular and disastrous crash due to pilot-induced oscillation overstressing the airplane during a high-speed press demonstration flyby.

With continuing interest in the water-based concept, though not in the *Sea Dart* itself, the second YF2Y-1 was completed in early 1955 and joined the test program in March to complete the twin-ski hydrodynamic test program. Two RATO (rocket-assisted takeoff) bottles were installed under each wing to decrease the takeoff run. These tests were completed in April with open-sea landings and takeoffs, and the airplane was taken off flight status.

Initial tests of the single ski in December 1954 had revealed new problems along with the old recurring. However, development work through 1955 proved more rewarding. A Navy evaluation in May dictated further work; a recheck in November indicated vertical accelerations at cockpit were still too high with choppy water. Final modifications, including variable damping in the ski strut oleos, gave significant improvement, and the final open-sea landings and takeoffs were done by Convair's test pilot in April 1956 – with the pilot still experiencing high peak loads on his last takeoff in the large waves – ending the basic *Sea Dart* program.

The last two YF2Y-1s were accepted, complete except for engine and other equipment installations, and all three Ys stored. With interest in a newly developed small single-ski configuration, the YF2Y-1 tested this in high-speed taxi tests using a fixed installation, with unsatisfactory results in April 1957. That fall a half-sized version was similarly tested – with similar results.

The XF2Y-1 then joined the other three *Sea Darts*. Unusual is the fact that all four aircraft are still in existence, having been displayed in one location or another over the years – some showing signs of their itinerant existence. Even more unusual was the assignment of the YF-7A designation to the F2Ys in the 1962 Department of Defense redesignations, years after they had been retired. Apparently strike action hadn't been taken on two of the YF2Y-1s until 1962, and they were administratively redesignated as part of the Navy's aircraft inventory. ■

YF2Y-1



Span	33'8"
Length	51'7"
Height	20'9" (on extended skis)
Engines:	2 Westinghouse J46-WE-12, 5,725-lb. thrust each with A/B
Maximum speed	575 kn (.99 Mach No.) at 35,500'
Service ceiling	54,000' (est.)
Range	513 m
Armament	Planned, not installed: 2 extendable 22 pack 2.75" rockets or 4 20mm guns



XF2Y-1

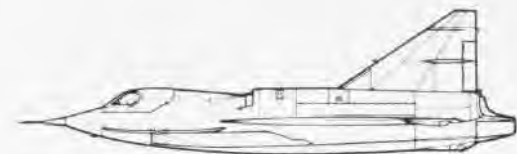
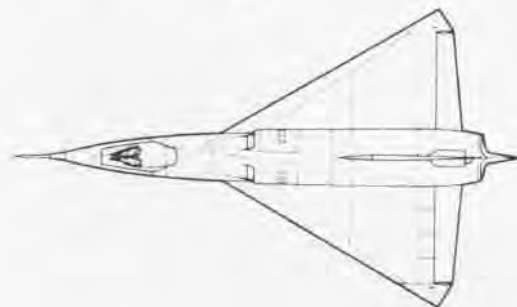
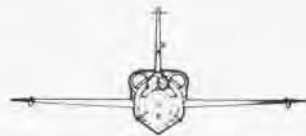
design and development and including installation of J46 engines. Five more F2Y-1s were added to the Navy order. Unfortunately, the promise of the F2Y-1 in terms of flight performance was shattered, as was that of Convair's Air Force delta fighter, the YF-102, as new aerodynamic and flight test data confirmed that the supersonic drag would be far greater than predicted and the airplanes would not achieve supersonic speed in level flight. With shortfalls in the J46 as well, and the



XF2Y-1 Fixed single ski

continuing development problems, the F2Y-1 production order was cut back. By the time the first F2Y-1 joined the test program in early 1954, the production program was canceled and the four production airplanes to be completed were redesignated YF2Y-1, for operational concept evaluation.

The YF2Y-1 was used mainly for flight envelope expansion testing during 1954, while the XF2Y-1 was rebuilt to incorporate a large single ski. This was not fully retractable since the airplane would be used only for hydrodynamic testing from this time on. In August 1954, the YF2Y-1 was flown supersonic in a shallow dive. A Naval Air Test Center team arrived in



Aviation Ordnanceman School

Story and Photos by PH2 J. A. Espy

HARM (High-Speed Anti-Radiation Missile): An air-to-surface missile used by the U.S. Navy, Marine Corps, and Air Force to destroy enemy radar installations by homing on electronic transmissions.

As important as HARM's technology is, the most important part of this missile is the specialist who maintains it, puts it on the aircraft, and makes sure that it goes when – and where – it should.

The Aviation Ordnanceman (AO) School, Naval Air Technical Training Center, Millington, Tenn., is where these technicians learn about the missiles, bombs, rockets, guns, and electrical equipment that they will work with in the fleet. Approximately 280 students go through the courses during each 10-week-long class.

Students learn about ordnance, electricity, and types of ammunition, including what it is used for and how it is used. Also studied are the different methods used in lifting weapons and launchers onto the aircraft wings and into bomb bays.

The first phase of instruction includes basic and advanced electricity courses that teach students about the assemblies used with weapons and how to test them. Simulators are employed to troubleshoot circuits from the cockpit to the launchers and rockets.

Phase two contains technical publications (TECHPUBS) and corrosion control. In TECHPUBS, students learn how to research specifics on problems, including how to fix – and prevent – them.

Aviation Ordnanceman First Class Jesus Cortinas, an instructor at AO School, said, "Students are not taught everything there is to know. Much of the information does not apply to every duty station. TECHPUBS is taught so that all the information will be accessible to the ordnanceman."

A major part of ordnance care is cor-



After installing the fusing pin, a student tightens the band and retainer nut on a bomb stabilizing unit fin for a bomb dummy unit.

rosion control. If a piece of ordnance is not properly maintained, a malfunction could result, ending in disaster. While studying corrosion control, sailors and Marines learn what is necessary to maintain the equipment.

Safety is stressed in all courses. Although cranial and ear protection is used on most jobs, the best safety equipment is another set of eyes. "Safety is always a first in the Navy," stated Cortinas. "We use the buddy system. While you're working on a problem, your buddy watches to make sure you're okay."

The AO rating came into existence on March 2, 1926, and many "ordys" think of this date as their birthday. The first AO School was in Norman, Okla., before moving to Memphis, Tenn., and Jacksonville, Fla. It made Memphis its permanent home in 1973. Bombs, munitions, fire control, and turret

mechanics were the first courses taught. With changing technology, rockets and their associated electronics were added in 1943; missiles were included in 1956.

The Aviation Ordnanceman Museum was opened in the schoolhouse in March 1990 to honor the AO rating. The museum's artifacts date to the school's beginning and include old school material, newspaper clippings, and "safed" ordnance. AO1 Debra Newton is one of two petty officers in charge of the museum. "Anything we need to know about the school is here. Books were donated by former students and various types of ordnance were donated from all over the world," she said.

Newton also has the distinction of being the first female Navy instructor at the school. "It was a little difficult the first few days," she remembered. "The guys just didn't know where I was going to fit in. After a short while, everyone thought I fit in just fine." The second woman to ever graduate from AO School, Newton enjoys being back at the school. "I get a chance to do more in my rating," she explained. "An added plus is that I get to teach others what I do and know."

Newton emphasizes fellowship and teamwork in classes. "AOs must learn here that getting along in the fleet is important," she said. "All sailors and Marines... should be there for each other, but AOs have to go that extra distance. If you're watching each other in school and on liberty, you know someone will be watching when it really counts – on the job." ■



AO students load six simulated 500-pound bombs.

A Successful North Star '91



Above, the USS America battle group is joined by some allied vessels as they steam through the chill of the North Atlantic Ocean. Left top, a Royal Navy Harrier from HMS Invincible lands aboard America (CV-66). Left bottom, a Soviet Il-38 Mayday aircraft escorted by a VF-33 F-14 Tomcat during North Star '91.

By JO2 David E. Smith

With fog slowly creeping across the bows of each ship, approximately 55 haze gray vessels, in various formations, smoothly cut through the choppy waters and chilly atmosphere of the North Atlantic Ocean.

The scene resembled a Hollywood depiction of a mystic adventure into the unknown. After 10 days of maneuvering and training, roughly 17,000 men within the vessels gained valuable maritime interoperability knowledge that molded them into a single unit of precision. Two years in preparation, the NATO exercise *North Star '91*, held September 10-19, 1991, combined vessels and personnel from Canada, the Federal Republic of Germany, the Netherlands, Norway, the United Kingdom, the U.S., and one ship each from Spain and Portugal.

Ten ships made up the U.S. carrier battle group: *America* (CV-66) with Carrier Air Wing 1 embarked, *Normandy* (CG-60), *Monterey* (CG-61), *Scott* (DDG-996), *John Hancock* (DD-981), *Thorn* (DD-980), *Seattle* (AOE-3), *Mount Whitney* (LCC-20), *Boone* (FFG-28), and *Simpson* (FFG-56).

"The *America* carrier battle group's principal mission is power projection," said battle group commander Rear Admiral Frederick L. Lewis. "And it is our function [during *North Star*] to act with the NATO allies to exercise those maritime procedures that we would perhaps have to use in any area of the world."

Lewis added that one of the high-

lights of the Gulf War was that the U.S. and her allies worked well together. "One of the reasons was that we had trained together in exercises like *North Star '91* and learned one another's capabilities and limitations." This being his fourth NATO exercise, the admiral said that there is always something to be learned.

In contrast, the exercise was a first for *America's* C.O., Captain Kent W. Ewing. "I gained a lot of experience from it," he said. "One was operating in a strange part of the world's waters — off the coast of Norway and the fjords [narrow inlets of the sea between cliffs or steep slopes], and another as the first carrier to operate in the Frohavet [Norway's southernmost fjord]. It was small," said Ewing, "but we found it fairly comfortable and we knew we could do it."

During the exercise, the *America* battle group teamed with various allied units to fight off simulated attacks from designated enemy units, submarines, small patrol boats, and aircraft. Overhead, Soviet long-range reconnaissance aircraft kept a watchful eye.

"We knew they [the Soviets] would probably be interested in what we were doing," said RAdm. Lewis, "because it's been two-and-a-half years since we've had a NATO exercise in which the U.S. participated."

According to Lieutenant Commander Mark Yonchak, *America's* assistant intelligence officer, the

Soviets remain one of the most active governments in collecting information on foreign military activities. "The fighter bombers from the *America* and [British carrier, HMS] *Invincible* carrier battle groups launched to intercept and escort them throughout the exercise area." Yonchak added that exercises like *North Star* carry much publicity because they feature a country's "premiere showcase fighting platforms," such as *America* and *Invincible*.

"The reconnaissance activity was a lot more frequent than I expected," RAdm. Lewis stated. "Even though it's not written into exercise play, it's become essentially part of the exercise itself."

According to Capt. Ewing, the frequent surveillance had a small impact on some planned missions during the exercise. "We lost a few of our planned air raid sorties where the Norwegians come out and pretend they're attacking us while we defend the ship, but it wasn't a severe impact," he said. "We conducted our missions as well as surveillance of Soviet aircraft."

Both the battle group commander and *America's* C.O. credited the success of *North Star '91* to hard work. "Across the spectrum of naval warfare," RAdm. Lewis said, "the *America* carrier battle group performed absolutely superbly, and exceeded my highest expectations. I'm very, very proud of their performance." ■

Arizona's Silent Sentinels

Story and Photos by Joan A. Frasher

The hot Arizona sun glares down unforgettingly on the rows of resting aircraft – more than 3,000 from the Navy, Air Force, Army, Marine Corps, and Coast Guard. In the shadows of Pueblo ruins, row after row of silent sentinels stand at parade rest, each with a story complete in itself yet waiting patiently for the correct time to be called back into service – some wait for a call they may never receive.

Immediately after WW II, the Army's San Antonio Air Technical Service Command established and maintained a storage facility for B-29 and C-47 aircraft at Davis-Monthan AFB, Ariz. Today, this facility is known as the Aerospace Maintenance and Regeneration Center (AMARC). This fleet of aircraft provides a unique



A recent aerial view of Davis-Monthan AFB storage area and the AMARC facility.

Jerry Fugere

savings account from which military units throughout the world may withdraw parts and aircraft. Some

aircraft are eventually sold to foreign governments or commercial firms, generating income for the U.S. government.

The chief reasons for selecting Davis-Monthan as the site for this storage center were Tucson's meager rainfall, low humidity, and alkaline soil. These conditions make it feasible to store aircraft indefinitely with a minimum of deterioration and corrosion. A hard soil layer, called caliche, makes it possible to park aircraft in the desert without having to build concrete or steel parking ramps.

AMARC adheres to a 60-day schedule from the time the aircraft is received to final placement on the desert after the preservation process. Before an aircraft is parked, AMARC workers remove guns, ejection seat charges, classified equipment, and pilferable items. They then drain the aircraft's fuel system and pump it full of a lightweight oil, which is drained again, leaving an oil film that protects the fuel system.

Next, the workers cover engine intakes, exhausts, and any gaps or



An open view of the maintenance hangar where the preparation of the aircraft takes place. The cover of the facility is painted white to help dissipate the desert heat.

cracks in the upper portion of the airframe with paper and tape. They spray the covered areas and other easily damaged surfaces – such as fiberglass radomes, fabric control surfaces, and canopies – with a vinyl plastic compound called "Spraylat." However, to prevent condensation within the aircraft, the underside remains unsealed to allow some circulation of air. Black Spraylat, applied with a spray gun, keeps out dust and water and prevents occasional dust storms from sandblasting windows and canopies, while white Kool Kote paint (formerly known as Spraylat), applied over the black layer, provides temperature control. In the summer, temperatures inside unprotected aircraft can reach 200 degrees F, causing damage to rubber, plastic, fabric, and delicate electronic components. With the white covering, the internal temperature of the aircraft is within 10-15 degrees of the outside temperature.

AMARC has now started using large plastic bags on some of its

“... Even though they're just planes, every one is different and that makes it even better. You're constantly learning how to tear them down and what's inside them. It's always an experience!”

aircraft to prevent even further deterioration. These plastic bags are more expensive than the Spraylat and Kool Kote coverings, but their life expectancy is greater. Spraylat costs \$1,440 per application, installation takes over 25.1 hours to complete, and lasts for four years, or one cycle. The plastic bags cost \$6,000 per aircraft, require four to five hours to apply, and last four cycles. Although the long-term cost of plastic bags is slightly higher than the spray process, savings are generated when repeated removal of the bags is required to obtain parts. Removal of the bags is a minimal cost, whereas removal of the spray paint process incurs the entire cost of \$1,440 to restore the aircraft.

One worker commented on what he enjoys about working at AMARC, "It's good experience and you make good friends," said Bill Amparano. When asked if he enjoys working on various vintage aircraft, he replied, "I love it. Even though they're just planes, every one is different and that makes it even better. You're constantly learning how to tear them down and what's inside them. It's always an experience!" Many of the workers are retired military technicians who feel at home with the old aircraft.

Jerry Fugere, Production Manager for AMARC, said: "Forty to fifty percent

of the stored inventory will return to the skies, while the remaining 50 percent will not fly again but will become a source for parts."

Since production lines for certain aircraft have closed, many parts can be found only at AMARC. For example, the last B-52 came off the assembly line in 1962, and the aircraft could remain in service well into the 1990s. Because of the extended service life of the B-52s, parts have become difficult to find. A case in point is an alligator clamp peculiar to the B-52. A supplier estimated that production of such a clamp would cost \$100,000 and take a year and a half to create. AMARC, however, had such clamps in abundance. The cost: \$580. For every dollar spent in FY 90, AMARC was able to return to the government \$18. That makes this Department of Defense (DoD) facility unique in that it actually makes money. During FY 90, the value of all returns to DoD inventories from AMARC was \$582.3 million.

This facility should not be considered just a parts store, though, because half of the aircraft stored here will go back to work – some return to military service and some are sold to foreign governments or donated to state and local governments or federal agencies. An example is the Army's OV-1 *Mohawk* which is now used for border patrol by the U.S. Customs Ser-



Guide TSgt. Ronnie J. Woods poses in front of an F-4.

A Superguppy rests majestically on Celebrity Row — a row which contains many different ages and types of aircraft.





Jerry Plunkett, an AMARC employee, applying the last layer of white Kool Kote.

Storm/Desert Shield.

With the end of the cold war and the ongoing standdown of many military aviation squadrons, AMARC's workload is increasing as more and more aircraft are retired to the desert. While AMARC is a quiet desert oasis for aircraft, an underground current of energy seems to be always present. "They also serve who only stand and wait." [John Milton] ■

Many thanks to TSgt. Ronnie J. Woods of the 836th AD/Public Affairs Office at Davis-Monthan AFB for the personal escort and interview.



An A-7 and an F-4 undergoing various processes in the preservation hangar.

and AK1 Guy Bevins. They manage the Navy inventory at AMARC, which includes various versions of the A-3, A-4, A-6, A-7, AV-8, C-1, C-2, C-118, C-130, C-131, E-2, F-4, F-8, F-9, F-14, H-1, H-3, H-34, H-53, H-57, P-2, P-3, S-2, T-2, T-28, T-33, T-34, and T-39.

During wartime and contingencies, AMARC supports the armed forces by regenerating aircraft for flyaway or by packing, crating, and shipping aircraft to the service. AMARC supports all services routinely by providing parts from stored aircraft to keep active aircraft flying. As of March 5, 1991, AMARC had shipped 1,501 parts to support Operation *Desert*



Several TA-4J Skyhawks await their turn in the preservation hangar.

vice. AMARC also donated numerous ex-Navy S-2 *Trackers* to California's Division of Forestry, while the West Virginia Drug and Law Enforcement Department now uses an Army U-8G which came from the storage facility. As a rule, all tax-supported organizations, including schools, are eligible for aircraft donations from AMARC. In addition, an increasing number of AMARC's aircraft, especially F-4 *Phantom IIs*, find service as drones and targets for the Air Force and Navy.

AMARC employs approximately 630 people, four of which comprise the Naval Air Systems Command Field Service Office. Clay Cowgill is the director of the field office while Bill Erdman is in charge of Materials Engineering Technology. Two Navy enlisted men complete the Navy side of AMARC – AMCS Mike Chicvara

One of the plastic shrouds or bags being used on an F-4 Phantom II.



A Navy E-2B from VAW 115, Midway, prepped and waiting for visitors in the desert.



ANA Bimonthly Photo Competition

Right, Capt. Bernard Krueger, HMM-163C, won the fifth bimonthly ANA Photo Contest with a dizzying shot of rotor blades. Below, this VMFA-112 F-4S was captured on the last Marine Corps/Navy F-4 ordnance drop on the Chocolate Mountains range in May 1991 by Lt. Col. W. H. Bowers of Houston, Texas. Snake eye fins open to retard the speed of the 500-pound bombs.



The Association of Naval Aviation Photo Contest

The Association of Naval Aviation and its magazine, *Wings of Gold*, is continuing its annual photo contest which began in 1989. Everyone is eligible except the staffs of *Wings of Gold* and *Naval Aviation News*. The ONLY requirement is that the subject matter pertain to Naval Aviation. Submissions can be in black and white or color, slides or prints of any dimension. Please include the photographer's complete name and address, and **PHOTO CAPTION**.

Cash Awards: Bimonthly – \$100; Annual – First, \$500; Second, \$350; Third, \$250.

For deadline and submission details, call (703) 998-7733. Mail photographs to: Association of Naval Aviation Photo Contest, 5205 Leesburg Pike, Suite 200, Falls Church, VA 22041.

Wake Island

A Gallant Defense

By John M. Elliott

Left, the aircraft graveyard at Wake Island photographed by the Japanese after the island was captured. Below, one of the last VMF-211 Grumman fighters which crashed on landing and was left by the runway as a decoy.



The defense of Wake Island under the command of Commander Winfield Scott Cunningham, USN, is a story of tenacity, ingenuity, and raw courage by a few in the defense of their country imposed upon them through shortsightedness, budgetary restraints, and our isolationism policy since WW I. The results of this policy and lack of military preparation was forcefully brought to the attention of the U.S. public on December 7, 1941. Our pitifully small and weak defensive capabilities were evident in the gallant defense of Wake Island by 449 Marines of all ranks. In addition, there were 69 Navy, 5 Army Air Force, and 1,200 civilian workers, all without weapons.

After the Washington Naval Treaty of 1922 expired, the building of aircraft and warships accelerated. However, base defenses lagged. The general public first became aware of Wake Island in 1935 when Pan American Airways made it one of the stops on its new flying boat route to the Orient. Finally, in 1940, work commenced on building a naval air station to support flying boat operations and a short airstrip. There was no military defense construction accomplished by this civilian contractor. It was not until early 1941 that work began on building up the defenses of our island outposts in the Pacific.

The advance detail of the 1st Marine Defense Battalion, commanded by Major James P. S.



Devereux and composed of 5 officers and 173 Marines and sailors, arrived August 19, 1941. They found the three islands which make up the atoll called Wake Island – Wake, Wilkes, and Peale – to be very different from the normal atolls of the central Pacific. These islands were covered with stubby trees and thick undergrowth interspersed with large boulders. The 1,200 civilian workmen had hacked out a 5,000-by-200-foot airstrip and

most of the proposed road net. The Marines had to construct the emplacements for the 3-inch and 5-inch coastal batteries by hand. They also were tasked with hand refueling the Army Air Force B-17s being flown to the Philippines in a frantic effort to bolster its defenses. Unfortunately, these aircraft which cost Wake so many hours of vital defensive preparations were themselves trapped on the ground and largely destroyed by the in-

itial Japanese attacks on Clark and Nichols fields in the Philippines.

The first evidence of air defense was the arrival of *Wright* (AV-1) on November 29 (November 28, Hawaii time) with 2 officers and 47 enlisted men from Marine Aircraft Group (MAG) 21 at Ewa Mooring Mast (later MCAS Ewa), Hawaii. Major Walter L. J. Baylor was a communications expert, while Second Lieutenant Robert J. Conderman, a Naval Aviator, was to



One of the surviving aircraft over Wake Island.

Naval Aviation in WW II

supervise the construction of the aviation camp.

At the time these people departed Hawaii it had not been determined which squadron would be sent to Wake Island. Consequently, the personnel deployed to Wake were drawn from all squadrons of MAG-21 (Headquarters & Service Squadron, VMF-211 with F4F-3s, VMSB-231 with SB2U-3s, and VMSB-232 with SBD-1s). In fact, it was not until supplies were actually being off-loaded at Wake that the decision was made to deploy VMF-211. This necessitated the backloading of scouting squadron supplies. In addition, all but two of the personnel were ordnancemen. It was anticipated that mechanics would fly in the rear seat of the scout bombers.

VMF-211 had been flying Grumman F3F biplanes since 1937 and had just received the F4F-3s commencing on October 9, 1941. The squadron pilots had become carrier qualified but had never fired the guns nor dropped bombs in the new aircraft prior to departure for Wake Island. Because of this, some of the items aboard *Wright* were 100-pound, sand and water-filled practice bombs.

On November 27, 12 pilots of VMF-211 (10 officers and 2 Naval Aviation Pilots) were alerted to go to Maui the following day, taking only what would be needed for an overnight trip. The morning of the 28th they took off and were advised by Major Paul Putnam, squadron commanding officer, that they would land at Ford Island where he was to attend a special briefing. Upon returning from the briefing, Maj. Putnam said, "We are going to rendezvous with the *Enterprise* [CV-6] that is now leaving the harbor with two deck-loaded P-40s. We are to observe them try to take off from the deck of the carrier." He further advised them that anyone who couldn't start his F4F was to be flown aboard in a waiting aircraft. This was the first indication that something other than the overnight trip was programmed.

After watching the P-40s launch, the squadron was given the blinker signal to land on *Enterprise*. Eleven squadron F4F-3s landed with Second Lieutenant Holden being flown aboard in a TBD torpedo bomber. After landing, they were all shunted down to the

hangar deck where they heard War Order Number One over the loud speaker system. This advised that the ship was now en route to Wake Island to deliver VMF-211 and that its scouting planes would sink any Japanese ships sighted and shoot down any aircraft encountered.

Of the eleven aircraft brought aboard, five did not have guns installed and none had gunsights. The pilots had the clothes they were wearing. Vice Admiral W. F. Halsey, Commander, Carrier Division 2/Aircraft, Battle Force, ordered his fighter squadron, VF-6, to give VMF-211 one of its aircraft in addition to the necessary guns and sights. They also painted the aircraft in the new paint scheme of blue and gray with black side numbers from 1 to 12.

On the morning of December 4, 1941, while approximately 200 miles northeast of Wake, Maj. Putnam and his 11 pilots took off from the carrier. They were guided by a PBY from a 12-plane squadron which flew patrols out of Wake on December 4 and 5 to cover the approach and delivery of VMF-211. Arriving at Wake Island, they found the air strip was long enough but too narrow to permit more than one plane to take off at a time. There were no shelters for the aircraft and fueling had to be done by hand. Parking areas were rough and unfinished. A plane could be damaged when it was being taxied or even pushed off the strip to permit another to land. Investigating the munitions available, they found Army 100-pound bombs. This was prior to the introduction of Army-Navy standards, and the Army bombs with two suspension lugs would not fit the Navy single-suspension bomb racks on the F4F. The first of many examples of ingenuity solved this problem. The sheet metal suspension bands were removed from practice bombs and fitted to the 100-pound General Purpose bombs. Two bombs were dropped successfully on December 7 for practice. Sleeves were on hand and gunnery in the F4F-

3 was to start the following day. It did, but not for practice!

The 1st Defense Battalion was in equally bad shape. It had no radar, either fire control or early warning. Some antiaircraft batteries did not have all of their fire control equipment, such as height finders. Approximately one-third of the battalion personnel were on the island, resulting in some gun batteries being unmanned.



Original memorial at Wake Island built from the propeller and engine cowl of the aircraft believed to have been flown by Capt. Elrod. The components are now in the Marine Corps Air/Ground Museum at Quantico, Va.

Combat Air Patrols were established and one was out on the morning of December 8 (December 7, Hawaii time), when word was received of the Japanese attack on Pearl Harbor. When this first patrol landed, a second – consisting of Captain Henry Talmage Elrod, Second Lieutenants Carl R. Davidson and John F. Kinney, and Technical Sergeant William Hamilton in aircraft numbers 9, 10, 11, and 12 – took off. While this patrol was above the clouds and on the north side of the island, the Japanese attacked. Thirty-six Mitsubishi G3M *Nell* twin-engine bombers, based at Roi 720 miles south in the Kwajalein Atoll, slipped in under a rain squall. When the bombing and strafing ceased, seven of the eight

aircraft on the ground were burned and blasted into uselessness, including the only two with self-sealing fuel tanks.

The Pan American Clipper had been called back from its flight to Guam upon word of the Pearl Harbor attack. It was requested that the Clipper make a scouting flight around Wake out to about 100 miles. The two F4Fs which were to provide an escort were hit. One of the pilots was killed, the other died the following day. Though the Clipper received numerous bullet holes, it was able to take off and make its way to Midway Island and Pearl Harbor. This was the most devastating raid, with 3 pilots and 17 enlisted men killed. Six more

were to die from their wounds the following day.

The squadron suffered 60-percent casualties and throughout the campaign was to suffer more casualties than any other unit. These were not all of the problems. The air-ground radio was badly damaged and the two 12,500-gallon aviation gas tanks were afire, as were numerous gasoline drums, making the VMF-211 area a sea of flames. Most of the oxygen supply was destroyed, the aviation spares and tools were riddled and destroyed. To cap it off, one of the two master sergeants, an aviation mechanic, was killed and the remaining one was an ordnanceman trained in SBD-1s. While taxiing after landing, Capt. Elrod was unable to miss a mass of bomb debris and damaged the propeller and engine in the number 9 aircraft.

2nd Lt. Kinney was assigned the task of keeping the remaining F4Fs in the air with the assistance of TSgt. Hamilton. Through herculean efforts, there was always at least one fighter in the air every day to meet the attacks. Burned-out aircraft were scavenged for parts, the aircraft revetments were completed, gun battery positions were further camouflaged and sandbagged, more foxholes were dug, and major communication trunk lines were buried as the island prepared for the following attack they knew was coming.

By the morning of the 9th, aircraft numbers 8, 10, 11, and 12 were available for the dawn patrol. Number 9 was still being repaired. The morning raid that day lost one aircraft to the fighters while anti-aircraft artillery (AA) accounted for another. According to a Japanese report, 14 were damaged by AA. The civilian contractor's hospital was burned out and the civilian and Navy barracks, garage and blacksmith shop, advance base storehouse, and machine shop in Camp 2 were all destroyed. The incomplete naval air station on Peale Island took destructive hits on the aerological building, hangar, and radio station. Five Marines and 55 civilians were killed. Ammunition was removed from two of the reinforced concrete and steel magazines and placed in the open to make room for two 21-bed underground wards. Both were in operation by nightfall. A revetment was dug down and covered with tarps and timbers to make a light-proof shelter so work could be continued through the night. Twenty-six bombers hit the island on the 10th. Capt. Elrod shot down two, but a cache of 125 tons of



Naval Aviation in WW II

dynamite on Wilkes Island was hit, which in turn set off all the 3 and 5-inch ready ammunition on that island.

The Japanese expected to find 1,000 troops and 600 laborers at Wake. They figured, almost correctly, that after two days of bombing, there were five aircraft remaining. They only allotted 450 assault troops and anticipated that it might be necessary to employ some of the destroyer crewmen. The invasion force consisted of 3 light cruisers, 6 destroyers, 2 patrol boats, 2 medium transports, and 2 submarines.

This force arrived before daybreak of December 11. Holding their fire until the flagship *Yubari* was 4,500 yards offshore, the nearest battery on Wake Island commenced firing. *Yubari* turned and was smoking heavily as she disappeared over the horizon having been hit four times. Three destroyers, two cruisers, and two transports approached Wilkes Island. The lead destroyer, *Hayate*, was hit by the third salvo, exploded violently, and broke in two. She sank within two minutes – the first Japanese surface warship sunk by the U.S. naval forces in WW II. The destroyers *Oite* and *Yayoi*, a medium transport and a light cruiser, were hit and retreated. During this 45-minute shore-battery action, VMF-211's four senior pilots (Maj. Putnam and Capt. Elrod, Freuler, and Tharin) had been airborne, each carrying 100-pound bombs. Their purpose had been to intercept any aircraft which might come to the aid of the invasion force. With it in retreat, they bombed and strafed the ships relentlessly.

Both light cruisers were hit as was the *Kongo Maru*, one of the medium transports. The biggest prize was the destroyer *Kisaragi* which blew up in a mighty explosion. Most sources credit this to a bomb dropped by Capt. Elrod. As each fighter expended its two bombs, the pilot would return to Wake, rearm, and fly out again. During this operation, 20 bombs and 20,000 rounds of .50-caliber ammunition were expended. Antiaircraft artillery fire from the ships cut the main fuel line in Elrod's aircraft, which was totally destroyed as he made a beach landing just short of the airstrip. Bullets pierced the oil cooler and a cylinder of Freuler's aircraft, rendering the engine a complete loss.

Just four hours after the landing attempt, 30 bombers attacked. 2nd Lt.

Davidson and Kinney sailed into the fight with the two remaining serviceable *Wildcats*. Davidson shot down two while Kinney sent the third one home smoking. Despite WW I ammunition, the AA guns sent one more down in flames and left three trailing smoke.

An early morning raid on the 12th by two four-engine Kawanishi flying boats dropped bombs around the airstrip but one was shot down by Capt. Tharin. Working miracles, 2nd Lt. Kinney patched up another F4F to flying condition. There was no noon raid and none at all on the 13th, but one aircraft had engine problems at the end of the day so they were back to two. Capt. Freuler, who had been attempting since the war began to devise some means of transferring welder's oxygen to augment the dwindling supply for the aircraft, was finally able to improvise a means of transferring the gas from commercial cylinders to the oxygen bottles of the Grumman aircraft. This dangerous job provided the sole supply to keep the squadron in effective fighting condition.

There was an early morning raid by the flying boats and a noon raid on the 14th. Two more VMF-211 Marines were killed and one wounded. Worst of all, though, was a direct hit on one of the two serviceable aircraft. With the aft section in flames, 2nd Lt. Kinney, TSgt. Hamilton, and Aviation Machinist's Mate First Class James F. Hesson from the naval air station removed its engine and dragged it free to bring another aircraft back to life two days later. The 3-inch antiaircraft guns destroyed two more aircraft.

There was no raid on the 15th. On December 16, Lt. Kinney and Kliewer spotted the incoming attacking aircraft and were able to radio the correct altitude to the AA gunners. Although the fighters had no success, the antiaircraft guns shot down one and four more were smoking heavily as they limped away.

On December 17, one aircraft could not be started. But through the unceasing effort of Lt. Kinney and his crew, it was again operational the next day. One Japanese aircraft was downed by AA fire.

The 18th was an uneventful day but on the 19th again only one aircraft was reported in commission for the morning patrol, with the second still suffering engine starting problems. Four bombers were hit by the antiaircraft guns, with one crashing in the lagoon.

When the Japanese attacked Pearl Harbor, *Saratoga* (CV-3) was at San Diego with 18 Brewster F2A *Buffalo* fighters of VMF-221 on board. Within 24 hours, the aircraft carrier was on its way to Pearl where it was to pick up other ships as a relief force to Wake Island. Three heavy cruisers, nine destroyers, the seaplane tender *Tanager* with the ground crews of VMF-221, and a fleet oiler completed Task Force 14. Additional troops from the 4th Defense Battalion, along with ammunition and equipment, were embarked. Due to numerous delays, the force did not depart Pearl Harbor until late in the afternoon of December 15 (December 16, Wake time).

Every day Wake was attacked there was always at least one fighter in the air to oppose the enemy. On the 20th, a Navy PBV *Catalina* landed in the lagoon, the first friendly contact with the outside world, with word of the relief expedition which was en route. Major Baylor departed the following day on this aircraft and gained a certain amount of fame as "the last man off Wake Island."

The morning raid of the 21st brought a new element to the fray when 29 Nakajima B5N *Kate* dive-bombers and 18 Mitsubishi A6M *Zero* fighters attacked. These were not the regular aircraft from Roi but from the carriers *Soryu* and *Hiryu*, which had been diverted from their homeward trip after the Pearl Harbor raid. This was followed three hours later by 33 bombers from Roi. When they departed, the island's AA defenses were reduced to four 3-inch guns of the 12 in place on December 8. VMF-211 still had two aircraft operational.

Capt. Freuler and Lt. Davidson were on patrol the morning of December 22 when attacked by 33 bombers and 6 fighters from the Japanese carriers. Freuler shot down one *Kate* but the flames and fragments damaged his controls. As he tried to maneuver his own plane to the airstrip, he looked for Lt. Davidson. A *Zero* was on his tail and Davidson was not seen again. Freuler was shot through the shoulder by another *Zero* and crashed his aircraft on the strip. Wake was without air defense! The surviving members of VMF-211 – by now less than 20 alive and unwounded – prepared to take their place as infantrymen. Recent research indicates that the *Kate* shot down by Freuler was flown by Petty Of-

ficer Noboru Kani, the *Soryu* pilot credited with sinking *Arizona* (BB-39) at Pearl Harbor.

This time, the Japanese took no chances. The invasion force in addition to the 2 carriers, had 9 cruisers, 2 destroyers, 2 patrol boats, 1,000 men of the Maizuru 2d Special Naval Landing Force from Saipan, plus a reserve of 500 more in ships' landing parties.

The decision was made during the night of December 22-23 for the relief expedition to turn back and let the island defenders fend for themselves. At 0800, December 23, the time Cdr. Cunningham was ordering the surrender of Wake, the relief force was but 425 miles away. Reactions varied from astonishment to shame and anger with some even counseling Rear Admiral F. J. Fletcher, Commander, Cruiser Division 6, to disregard the orders and make a dash for the island. Difficult as it was, it was the right decision. The force was not large enough nor was there the pipeline behind it to have made a significant difference to the outcome.

During early morning darkness on December 23, the Japanese landing commenced. Lieutenant Hanna turned his 3-inch AA gun – now serving as an antiboat gun – against Patrol Boat 33, which was being run aground on the beach, hitting it at least 14 times and breaking its back. However, the Special Naval Landing Force got ashore without significant casualties. The nearest Marines, except some from one of Hanna's .50-caliber positions, were the remnants of VMF-211 who took up positions to cover the 3-inch gun against infiltrating attack by Lieutenant Uchida's unit. Before daylight, the VMF-211 position was surrounded, and every man of the one-time squadron was killed or wounded except six.

Capt. Elrod was killed by a Japanese who played dead under a pile of casualties. Among the dead were 10 civilians who had joined the fight. Casualties in Lt. Uchida's unit against the position numbered at least 62, including Lt. Uchida. At 0700, the island commander, Cdr. Cunningham, determined that further resistance was useless and ordered the surrender. It took six hours to get the word to all the pockets of resistance. It was only when Maj. Devereux reached Wilkes Island that he found the Marines there had managed to exterminate or take prisoner all of the Japanese who had landed on their island. Upon reaching the VMF-211 position, he found Capt. Tharin still directing the defense at

0930. Of 10 survivors, nine had been wounded, but all who remained alive were still fighting. VMF-211's final positions, taken up six hours earlier, were still held.

All American prisoners were rounded up and shown little compassion. The military personnel and all but 100 civilians were evacuated to the Empire aboard the *Nita Maru*.

Two Marines of VMF-211 and three sailors were executed by beheading while aboard the ship in retaliation for their defense and defeat of the first landing attempt. The 100 civilians retained on the island to maintain the island facilities were ordered executed by the island commander, Rear Admiral Sakaibara, following the carrier strikes and heavy bombardment of Wake on October 6-7, 1943. The admiral was tried as a war criminal and executed on June 19, 1947. Four of those involved in wielding the swords aboard the *Nita Maru* were tried and sentenced to life imprisonment at hard labor. The fifth was acquitted. Lieutenant Saito, officer in charge, escaped and was never recaptured. Saito's second in command told the War Crimes Commission that a request had been made before the *Nita Maru* arrived at Wake to take the prisoners off, to allow the prisoner guard to use drastic measures on the prisoners.

Back at Ewa they began to pick up the pieces. The remaining F4Fs were turned over to the Navy to help fill carrier decks. VMF-211 was reconstituted and issued F2A *Buffaloes*. It later received new F4Fs and was sent to Palmyra along with the 1st Defense Battalion. Once again we had the same composition, but without the disastrous results.

In 1942, the squadron combined its old Diving Lion insignia with the outline of Wake Island which formed a "V" for victory. This design was approved and is still used by the squadron as its motto, "Wake Island Avengers."

With the conclusion of WW II, it was only fitting that the Japanese surrender of Wake Island aboard *Levy* (DD-162) on September 4, 1945, was accepted by Brigadier General L. H. M. Sanderson, USMC. Then-Capt. Sanderson was the first commanding officer of VMF-211 when it was activated in January 1937 as VF-4M. It was at this time the Diving Lion insignia was adopted. Then-Colonel Baylor, "the last man off Wake Island," was also the first American to set foot on the island after the war.

While it is true that the numbers involved were small, their contribution

was great, especially at a time when morale in the U.S. was at a low point. In their 16 days of heroic action, the defenders of Wake Island produced the following firsts:

First to defeat a Japanese landing attempt.

First to sink a Japanese surface warship by aircraft.

First to sink a Japanese warship by shore-battery fire.

First joint air-ground defense operation.

First two-engine and four-engine aircraft shot down.

First Naval Aviator to earn the Medal of Honor in WW II, Captain Henry T. Elrod, USMC.

First units to be awarded the newly established Presidential Unit Citation. ■

50 Years Ago — WW II

January 2: The first organized lighter-than-air units of WW II, Airship Patrol Group 1, Cdr. George H. Mills commanding, and Airship Squadron 12, LCdr. Raymond F. Tyler commanding, were established at NAS Lakehurst, N.J.

January 5: A change in regulations covering display of National Insignia on aircraft returned the star to the upper right and lower left wing surfaces and revised rudder striping to 13 red and white horizontal stripes.

January 7: Expansion of Naval Aviation to 27,500 useful planes was approved by the president.

January 11: *Saratoga* (CV-3), while operating at sea 500 miles southwest of Oahu, was hit by a submarine torpedo and forced to retire for repairs.

February 1: First U.S. Carrier Offensive – Task Forces 8 (VAdm. W. F. Halsey) and 17 (RAdm. F. J. Fletcher), built around the carriers *Enterprise* (CV-6) and *Yorktown* (CV-5), bombed and bombarded enemy installations in the Marshall and Gilbert islands.

February 24: First Wake Island Raid – A striking force (headed by VAdm. W. F. Halsey), composed of *Enterprise* (CV-6) with cruiser and destroyer screen, attacked Wake Island.

February 26: The Navy's Coordinator of Research and Development requested the National Defense Research Committee to develop an expendable radio sonobuoy for use by lighter-than-air craft in antisubmarine warfare.

February 27: The seaplane tender *Langley*, formerly first carrier of the U.S. Navy, was sunk by enemy air attack 74 miles from her destination while ferrying 32 Army Air Force P-40s to Tjilatjap, Java.

Awards

LCdr. Jeffrey S. Ashby, VFA-195, was recognized as the **LCdr. Michael G. Hoff Attack Aviator of the Year**. The award is named in memory of LCdr. Hoff of VA-86, who was listed as missing in action in 1970 after failing to return from a combat mission flown from *Coral Sea* (CV-43).

Records

Capt. Steve Webb, ComCVW-11, recorded his 1,000th arrested landing on October 17, 1991, aboard *Abraham Lincoln* (CVN-72). Webb's 1,000th trap was in an E-2C *Hawkeye* from VAW-117. He has accumulated over 5,000 hours in Navy jets.



PH2 Scott Guido

Capt. Patrick D. Moneymaker, ComCVW-14, made the final arrested carrier landing on September 24, 1991, aboard the last U.S. WW II-era aircraft carrier, *Midway* (CV-41).

The *Red Lions* of **HS-15** achieved a squadron milestone as they logged their 1,000th deck landing for 1991 on-board *Yorktown* (CG-48). The landing was logged by C.O. Cdr. J. J. Waickwicz.

Scorpion skipper **Cdr. T. P. Lane** flew his 3,000th hour in an EA-6B *Prowler*.

Several units marked **safe flying time**.

Unit	Hours	Years
CGAS Detroit:	42,000	25
HC-1:	56,000	10
HS-3:	34,722	10
HS-10:	84,000	15
HS-14:	4,000	1
HS-38:	19,000	4
HSL-35:	19,700	3
HSL-47:	30,000	4
HT-8:	446,412	14
NADC Warminster:	47,000	17
NaDep Jacksonville:	19,908	25
NAS Adak:	1,550	2
NAS Dallas:	24,571	21
NAS North Island:	37,000	20
NAS Moffett:	2,812	4
NAS Pensacola:	77,700	20
NAS Whidbey Island:	34,500	11

Unit	Hours	Years
PMRF:	38,400	20
VA-52:	17,100	4
VA-155:	15,232	4
VAQ-131:	6,500	4
VAQ-309:	13,000	12
VAW-115:	14,400	6
VF-2:	14,300	3
VF-111:	11,000	3
VF-211:	20,000	5
VFA-27:	19,170	5
VFA-127:	16,000	3
VFA-151:	10,000	2
VFC-13:	30,000	6
VMFA-122:	20,000	4
VP-6:	69,000	11
VP-8:	86,000	13
VP-9:	82,650	13
VP-17:	142,300	21
VP-24:	150,000	23
VP-47:	115,400	18
VP-49:	200,000	29
VP-92:	46,500	13
VPU-2:	24,250	9
VS-29:	84,000	20
VS-33:	142,500	31
VXE-6:	24,900	4

Rescues

On August 12, 1991, **CGAS Barbers Point** received a report of a heart attack victim onboard a Navy vessel. A C-130 *Hercules* diverted from training and an HH-65 *Dolphin* launched with a Navy flight surgeon and corpsman aboard. When the *Hercules* was on the scene, the crew discovered that the Navy vessel was a submarine! USS *Alabama* surfaced and *Dolphin* pilot Cdr. Ben Stoppe and flight mechanic AM3 Neil Amos lowered the flight surgeon, a rescue stretcher, and a heart monitor.

The patient, a chief petty officer, was hoisted into the helo and administered to by the doctor and the corpsman on the way to Tripler Army Hospital. The patient was then transferred to a waiting ambulance and was in satisfactory condition.

Cdr. Lee A. Hawks in aircraft 503 of VA-176 achieved his 1,000th arrested landing aboard *Forrestal* (CV-59).

Cdr. John W. Indorf, C.O., VA-165, logged his 1,000th trap onboard *Nimitz* (CVN-68). The skipper logged every one of his 1,000 traps in *Intruders*.

Lt. Col. R. J. Wallace, C.O., HMM-263, passed 5,000 accident-free career flight hours – 2,500 of which were in the H-46.

Capt. Mark T. Vanderberg, C.O., HS-1, passed 4,000 flight hours on a night instrument hop in a squadron helo.

Cdr. Ralph C. Miko, C.O., VA-85, completed his 1,000th carrier-arrested landing during "Operation North Star '91" aboard *America* (CV-66).

Honing the Edge



Recently the Navy made its first flight in the X-31A aircraft with an NAS Patuxent River pilot at the controls, Marine Corps Capt. (now Maj.) Bob Trombadore of the Strike Aircraft Test Directorate. This flight was the first of four which made up the first Government Preliminary Evaluation (GPE) of the X-31. The GPE was conducted by a combined test team from Germany and the U.S.



The newest addition to the VAQ-35 "Greywolves," mascot "Whisky," poses with C.O. Cdr. Brian Moss at the squadron's establishment ceremony June 14, 1991.

Scan Pattern

Vernon Pugh



A flight test facility, which houses a hangar, laboratory, shop, and office spaces to support engineering and manufacturing development for the Naval Air Test Center, was dedicated on September 30, 1991. The \$15-million facility is named the Captain Steven A. "Axel" Hazelrigg Flight Test Facility in memory of the former chief test pilot for the Strike Aircraft Test Directorate. Capt. Hazelrigg was killed in an August 1990 test flight after his A-6E Intruder's longitudinal flight control system failed.

U.S. Naval Aviation Art in RAF Museum

In 1986, the American Society of Aviation Artists (ASAA) was formed to bring together artists who are leaders in the field in order to recognize and promote interest in aviation art as a fine art form. In August 1991, ASAA held its fifth annual aviation art forum in London, England, in conjunction with an art show at the Royal Air Force Museum in Hendon. The exhibition was a joint showing of works by ASAA and Britain's Guild of Aviation Artists, centered around America's entry and involvement in WW II. U.S. Naval Aviation was well represented with eight paintings, including R. G. Smith's "The Famous Four Minutes," a depiction of Task Force 16 SBDs engaging the Japanese carriers at Midway on June 4, 1942.

Capt. Ted Wilbur, USNR (Ret.), was



honored with the acceptance of two pieces for the six-month show. "Victory Over Guadalcanal" depicts one of Marine Corps ace Joe Foss' victories over a Japanese Zero fighter, and "High-Side Attack Over Leyte Gulf" illustrates Naval Aviation's highest scoring ace, David McCampbell, with his wingman, intercepting a large formation of hostile aircraft during the Philippine campaign. When he retired in 1981, Capt. Wilbur was head of what is now the Naval Historical Center's

"High-Side Attack Over Leyte Gulf," by Ted Wilbur

Naval Aviation History and Publication Division. A Naval Aviator with over 30 years of active service and 6,000 flight hours, he was the official artist for the Vanguard and Polaris missile programs, and he has a number of works on display in the National Air & Space Museum, Washington, D.C., as well as the U.S. Navy's permanent art collection. He also served as a combat artist and is a former editor of *Naval Aviation News*.

Scan Pattern

A seriously injured pilot of an F-14 *Tomcat* safely landed his aircraft on-board the deck of *Dwight D. Eisenhower* (CVN-69). LCdr. Joe F. Edwards, VF-142, sustained injuries to his right eye and right shoulder after the nose radome of the *Tomcat*, came loose and smashed the jet's canopy while the jet was flying 450 knots at 27,500 feet. As a result of the impact, the F-14 lost communications with the ship.

The injured pilot and his radar intercept officer (RIO), LCdr. Scott

Grundmeier, made a pass at the carrier at 500 feet to alert it of their predicament. Edwards made two more practice passes while the carrier prepared to recover the aircraft and crew.

Edwards couldn't see or contact his crewman so he opted to land the F-14 on the carrier to get immediate medical care if needed. Fortunately, the RIO was uninjured.

Relying on his instruments for the final approach, LCdr. Edwards piloted his aircraft despite the pain from his

broken clavicle and the loss of vision in his right eye.

After landing his damaged aircraft, Edwards was flown to Bahrain and admitted to a hospital where he underwent eye surgery and treatment for his collar bone.

(Thanks to JOC Jim Richeson, Public Affairs Office, Commander, U.S. Naval Forces Central Command.)

Change of Command

ComHelTacWing 1: Capt. Terry C. Lackey relieved Capt. Chester F. Harrison.

ComFltAct Okinawa: Capt. Donald C. Ahlstrand relieved Capt. Terry A. Richardson.

ComFitAEWWingPac: Capt. Curtiss W. Schantz relieved RAdm. Philip S. Anselmo.

ComNavAirResFor: RAdm. James D. Olson II relieved RAdm. Richard K. Chambers.

FACSFAC JAX: Capt. Morris M. Kemple, Jr., relieved Capt. Howard E. Koss.

HC-6: Cdr. Ronald E. Keys relieved Cdr. Robert D. Vint.

HMM-268: Lt. Col. John A. Lemoine relieved Lt. Col. M. Wayne Forbush.

HSL-36: Cdr. Ronald M. Gibbs relieved Cdr. John Thogerson.

HSL-84: Cdr. Bryan D. Lucas relieved Cdr. Jeffrey Wallin.

HT-18: Cdr. Paul E. Roberts relieved Lt. Col. Royce W. Setzer.

NAS Bermuda: Capt. James L. Arnold relieved Capt. Joseph F. Phelan.

NAS Jacksonville: Capt. Charles Cramer relieved Capt. Kevin Delaney.

NAF Misawa: Capt. Robert D. White relieved Capt. James S. Falls.

NAS Moffett Field: Capt. Robert Kelly Gray relieved Capt. Stephen T. Quigley, Jr.

NAS South Weymouth: Capt. Carl J. Ryan, Jr., relieved Capt. John G. Kuchinski, Jr.

NavSatOpCen: Capt. Douglas A. White relieved Capt. Richard N. Lee.

Ranger: Capt. Dennis V. McGinn relieved Capt. Ernest E. Christensen, Jr.

ResPatWingLant: Capt. Douglas R. Birr relieved Capt. Michael T. Korbet.

Tripoli: Capt. J. R. Hutchison relieved Capt. G. Bruce McEwen.

VA-128: Capt. Bernis H. Bailey, relieved Capt. Michael J. McCamish.

VA-155: Cdr. Larry J. Munns relieved Cdr. Frank Sweigart.

VA-165: Cdr. R. J. Taylor relieved Cdr. J. W. Indorf.

VA-176: Cdr. Lee A. Hawks relieved Cdr. William G. Ballard.

VAQ-34: Cdr. Floyd R. Weaver relieved Cdr. Rosemary B. Mariner.

VAQ-129: Capt. Richard H. Porritt, Jr., relieved Capt. Phillip L. Sowa.

VAQ-132: Cdr. Rick Martin relieved Cdr. T. P. Lane.

VAQ-138: Cdr. Charles W. Kennard relieved Cdr. Walter J. Donovan, Jr.

VAW-117: Cdr. Frank Clark relieved Cdr. Ron Wiley.

VAW-122: Cdr. Terry L. Tippin relieved Cdr. Vernon C. Huber.

VF-11: Cdr. Leo F. Enwright, Jr.,

relieved Cdr. Steven R. Nichols.

VF-74: Cdr. Charles A. Wyatt relieved Cdr. Douglas K. Dupouy.

VFA-37: Cdr. Robert K. Christensen relieved Cdr. Carroll L. White.

VFA-81: Cdr. William L. McKee relieved Cdr. Michael T. Anderson.

VFA-131: Cdr. Ron Hoppock relieved Cdr. Robert Rubel.

VFA-204: Cdr. Dan Kloeppe relieved Cdr. Ron Roshelli.

VFC-13: Cdr. Jerry H. Harris relieved Capt. Michael A. Ranftle.

VP-10: Cdr. Carl Norton relieved Cdr. Pete Masciangelo.

VP-30: Capt. Ernest L. Morris relieved Capt. Paul S. Semko.

VP-47: Cdr. Robert R. Schutzenhofer relieved Cdr. William E. Munsee.

VP-65: Cdr. P. F. Blunt relieved Capt. Harry Rector III.

VP-92: Cdr. Allen R. Hansen Cdr. Howard C. Rottler.

VQ-3: Cdr. Robert E. Young relieved Cdr. H. T. Trotter.

VR-48: Cdr. Robert W. Reich relieved Cdr. S. Ryan Swah.

VS-24: Cdr. Claude Swain relieved Cdr. Michael Miller.

VT-21: Cdr. Dean Fournier relieved Cdr. Ronald M. DeLoof.

VTC-21: Cdr. Robert B. Stack relieved Cdr. Robert H. Stuhlman.

VX-5: Capt. Garth A. Van Sickle relieved Capt. Raymond A. Kellett, Jr.

By Cdr. Peter Mersky, USNR

As with any new conflicts, the Gulf War has generated a large number of books of varying lengths, scope, and quality. Generally, these books fall into two broad categories: quicky picture-book reviews and more seriously intended history and analysis. While both types are trying to take advantage of usually short-lived public interest, the first type of Gulf War book seems to rely on readily available photography, which is finally appearing through various military and national services.

While many of their photos are good, these books have little to offer in information and assessment; however, we will occasionally review these lighter offerings. But in this issue, we discuss the three books which are probably the most important of the current line-up of Gulf War retrospectives. Each has value, and occasional detractions, but each should be considered by the serious reader.

Allen, Thomas B., F. Clifton Berry, and Norman Polmar. *CNN War in the Gulf*. Turner Publishing, Inc., One CNN Center, Atlanta, GA 30348. 1991. 240 pp. Ill. \$29.95.

It's difficult to include all the events leading up to the Iraqi invasion of Kuwait and the allied response that resulted in *Desert Storm* in one relatively short volume, but this collaborative effort by three highly regarded defense analysts is probably the best Gulf War book to date.

While it might look like an advertisement for CNN's extensive reporting of the war – it uses many photos taken directly from the news network's reports – *CNN War in the Gulf* is an intelligent, well-considered account of the history of the geographic area and how it evolved into the dramatic events of 1991's first four months.

Readers of this magazine will be somewhat disappointed by the book's relatively minor coverage of Naval Aviation in the gulf; indeed it is clear the authors believe that the most important contribution by naval "aircraft" was made by cruise missiles. There are references to such events as VFA-81's two MiG killers, FA-18 pilots Fox and Mongillo, and photos of various Navy and Marine aircraft, like the F-14 and A-6, but most of the coverage goes to Air Force and coalition efforts.

Charts and maps of the region, as well as schematics of how various weapons systems work, add to the visual impact of the book. Postwar coverage also includes the ad hoc Operation *Provide Comfort* humanitarian relief effort for the Kurds, and the first frantic homecomings of the allied POWs and troops.

Desert Storm. Howell Press, 1147 River Rd., Charlottesville, VA 22901. 1991. 176 pp. Ill. \$34.95.

A well-presented overview of the Gulf War, *Desert Storm* is the collaborative effort of several well-known authorities and writers in various areas of military interest. The book is billed as being "from the editors of Military History Magazine," one of several enthusiast publications from Empire Press in Leesburg, VA. Retired Army Colonel Harry G. Summers, Jr., another well-known expert who is frequently seen on news programs or read in one of his newspaper or magazine columns, wrote the forward.

Comparison to CNN's war book can't be helped: The books look somewhat alike and given the short duration of the war, the material included is bound to be similar.

Desert Storm has an annoying lack of coordination as the chapters repeat the historical setting up – retelling about the invasion of Kuwait, U.S. resolve, and the *Desert Shield* build-up. There is also the *de rigueur* mentioning of the lightning opening of the war on January 17. The chapters, therefore, take on the look of isolated essays rather than a unified book.

There are a few inaccuracies, such as Navy Lt. Jeffrey Zaun's being called a pilot; experts in military matters should know better than to ignore his status as a bombardier navigator.

That noted, *Desert Storm* is a good book and tells its story well, with good photographs and inside looks at the various components of the allied force, although it focuses predictably on the Americans. There are interesting impressions from such people as recalled Marine combat artist, Col. H. Avery Chenoweth, who can claim to be one of the first people into Kuwait City. There are interviews with Army tank drivers and ship crews as they experience the war closehand.

One of the best chapters is the one that deals with the air war; another is "Blocking the Center," which details the ground war. The book includes a concisely written chapter on the historical and cultural background of the area – sometimes called the Fertile Crescent – where Iraq sits today. The chapter also deals with the Iraqi invasion of Kuwait and includes a riveting account of Iraqi atrocities against Kuwaitis.

Friedman, Norman. *Desert Victory: The War for Kuwait*. U.S. Naval Institute, Annapolis, MD 21402. 1991. 440 pp. Ill. \$24.95.

While most Gulf War books are of the pictorial review or illustrated resume variety, *Desert Victory* is the first full-length analysis of the war. Written by a well-known defense analyst, it is more of a traditional account which not only tells the story of the war but also delves into the levels of meaning for the various participants and their services.

While the text is occasionally partisan or slightly naive, this book does give a good account of the *Desert Shield* build-up and the *Desert Storm* war. Every phase and most of the major coalition components are detailed. The eight appendices and expansive endnotes add to the value of the book as a reference. There is also a good-sized folio of photographs, with several in color.

Throughout his book, Dr. Friedman offers several lengthy essays on equipment and tactics. The final chapter, "Lessons Learned and Mis-learned," is a provocative, almost personal analysis of the war's long-range meaning for the U.S. and the world, how and why the coalition won, or why, specifically, Saddam lost.

Desert Victory is a good discussion of the first major conflict to involve most of the outside world since Korea. Analyzing such a huge action so soon after its completion is always dangerous since many details remain to be disclosed. However, Dr. Friedman's attempt deserves to be read by anyone with an interest, avocational or professional, in the war.

Survey Says ...

By JO2(SW) Eric S. Sesit

For the past three months, our readers have flooded our office with their responses to our survey, which appeared in *Naval Aviation News*, July-August 1991. Readers from every branch of service, as well as two foreign countries, took time to tell us what they think of our magazine. Although we received responses from all ranks/rates, the majority came from mid-level officers, O-3 through O-5, and from E-6s and E-7s in the enlisted community.

Out of 482 responses, 96 percent considered *NANews* easy to read and understand. Eighty-nine percent felt that the magazine fulfilled its mission as the "Voice of Naval Aviation." As a source of information on Naval Aviation, 65 percent rated *NANews* outstanding, 30 percent rated it good, and four percent rated it as satisfac-

tory. The remaining one percent considered the magazine unsatisfactory.

When asked where the magazine has shown the most improvement since our 1989 survey, 44 percent said our features have improved the most, while 36 percent rated our news coverage as the most improved. Photography and layout followed closely in third and fourth places.

Not surprisingly, "Grampaw Pettibone" won the honors as the section you most enjoy reading. Our feature articles and People-Planes-Places placed second and third. The Naval Aviation in WW II series, Naval Aircraft series, Flight Line, Airscoop, Professional Reading, Flight Bag, and Weather Front followed in that order.

Perhaps the most enlightening part of the survey was your comments. For

example, some readers felt we need to spend more time covering the rotary-wing community, while others in the enlisted ranks expressed their desire to see more articles about the troops in the "trenches" who contribute so much to Naval Aviation. Other readers expressed interest in seeing more articles about future developments in aviation and how decisions in Congress affect the aviation community.

Your responses to this survey are extremely valuable to us. Each card is read and every suggestion is looked at closely to help us enhance future issues. As always, the staff at *Naval Aviation News* welcomes your comments and suggestions and encourages your input on story ideas, photos, and feature articles. Keep those cards and letters coming! ■

FLIGHT BAG

Kudo

The following was a letter to VAdm. Richard M. Dunleavy, Assistant Chief of Naval Operations (Air Warfare):

As a retired naval officer and an active member of the civilian aerospace community, I read and subscribe to a large number of professional military and trade publications. This provides a certain vantage point from which to judge publication scope, maturity, depth, and overall merit. I have been especially impressed by the exceptional job being performed in your behalf by LCdr. Richard R. Burgess and his staff at *Naval Aviation News*.

Recent editions have contained specific features, fleet articles, hardware stories, and Naval Aviation historical pieces that rank with the finest in print these days. Photo selections have been outstanding. *Naval Aviation News* is, I believe, on a par with *The Hook*, *Wings of Gold*, and the Naval Aviation Museum's *Foundation*. This is not an easy ranking to achieve, especially with a small staff and limited budget. LCdr. Burgess has obviously put a lot of time, energy, and enthusiasm into his work and it shows! He deserves commendation for what

he has done with the *News*. It has become a really superior journal that serves the entire Naval Aviation community with skill and class. Keep up the good work!

James J. Mulquin
5101 Brentford Dr.
Rockville, MD 20852

League of WW I Aviation Historians

The League of WW I Aviation Historians is a nonprofit organization chartered with furthering the study of aviation history during the WW I period. The league is sponsoring a paper competition open to undergraduate and graduate students at accredited institutions during the 1991-92 academic year. Monetary prizes will be awarded for the best original paper on any aspect of aviation during the 1914-1918 war (first prize: \$250; five honorable mention awards: \$100/each). For details, write Noel Shirley, 727 Swanswood Ct., San Jose, CA 95120. Entries must be received by May 31, 1992.

F-86 Sabre History

I am writing a history of the F-86 *Sabre*, which will cover the design, development, and operational and combat history of the aircraft in all versions, including the Navy/Marine Corps *FJ Fury* series. I would like to hear from anyone who can share information or photos, including Naval Aviators who flew Air Force F-86s on exchange tours. I particularly wish to interview *Sabre/Fury* veterans in the Washington, D.C., area. Please contact Robert F. Dorr at 703-264-8950 or FAX 703-255-6434.

Props-to-Jets Research Project

NANews Contributing Editor Hal Andrews has been awarded an Alfred V. Verville Fellowship at the National Air and Space Museum for 1991-92. His research project will address the Navy's transition from piston-engined prop fighters in late WW II to swept-wing jets 10 years later. Operational, technical, organizational, and political aspects and their interactions will be included. Recollections from participants, particularly pilots and other squadron personnel, would be

appreciated. Contact Hal at the Aeronautics Department, National Air and Space Museum, Smithsonian Institution, Washington, DC 20560, 202-357-2515.

"Paddles" Monument

A memorial statue is planned to honor Landing Signal Officer Cdr. John "Bug" Roach - who was killed in a 1991 aircraft mishap - for his outstanding contributions to naval carrier aviation. Navy League members request donations to a memorial fund, which will assist in funding a monument-size bronze casting of "Paddles," to be placed in a prominent air museum. Names of contributors of \$100 or more will be inscribed on a granite base. Mail contributions to: Cdr. John "Bug" Roach Memorial Fund, Mid State Bank, 1026 Grand Ave., Arroyo Grande, CA 93420.

F4H-1F Info Wanted

Researcher seeking information on either F4H-1F BuNo 142260 (No. 2) or F4H-1F BuNo 145310 (No. 11). Both aircraft are to be restored and displayed and their histories recorded. Contact David Schill, 132 Harding Ave., Moorestown, NJ 08057, 609-234-2273.

VC-93 Vet

I would like to locate a buddy with whom I served in VC-93 from 1943 to 1945 in Holtville, Calif., and North Bend, Ore. Leroy Peoples was a chief and came from Mississippi.

Jack Sturm
370 E. Lassen Ave. #70
Chico, CA 95926

Aircrew Escape Systems

I'm compiling a reference on the history, development, and use of all the world's air forces' assisted aircrew escape systems, 1900 to present. To fill historical gaps, especially in early American, French, and Soviet development, I would like to hear from anyone who has experiences/anecdotes of ejections, ejection seats, developments, tests, etc. I would also appreciate the loan of relevant manuals, photographs, and documentation.

Mike Bennett
57, Cheviot, Wilneote
Tamworth, Staffordshire B77 4JP
Great Britain

Ed Heinemann Dies

Edward H. Heinemann, 83, famed military aircraft designer, died of kidney failure on November 26, 1991. Known as "Mr. Attack Aviation," he designed more attack aircraft than anyone else. Responsible for the design of 20 aircraft altogether, his major creations include the SBD *Dauntless*, AD *Skyraider*, A-3 *Skywarrior*, and the A-4 *Skyhawk* (dubbed "Heinemann's Hot Rod"). Other Heinemann credits: the A-20 *Havoc*, A-26 *Invader*, F3D *Skyknight*, F4D *Skyray*, and D-558-II *Skyrocket*.

His honors include the Collier Trophy presented by President Eisenhower, National Medal of Science presented by President Reagan, U.S. Navy Distinguished Public Service Award, Guggenheim Medal, National Aeronautic Association's Elder Statesman of Aviation Award, enshrinement in the National Aviation Hall of Fame and the Naval Aviation Hall of Honor, and designation as Honorary Naval Aviator No. 18.

Reunions, Conferences, etc.

Naval Helicopter Association Symposium, "Vertical Versatility," FEB 17-21, San Diego, CA. For details, call 619-435-7139.

WW II Iwo Jima Survivors reunion, FEB 21-23, Wichita Falls, TX. POC: Iwo Jima Survivors Association of Texas, PO Box 1657, Bowie, TX 76230, 817-845-3261.

Professional Aviation Maintenance Association Symposium, FEB 25-27, Nashville, TN. POC: Pat Wyman, PAMA, 500 N.W. Plaza, Suite 809, St. Ann, MO 63074, 314-739-2580.

Nehentia Bay (CV-74) seeking members of VCs 8 and 11 for 1992 reunion. POC: Stewart Wasoba, 10533 112th Ave N., Largo, FL 34643-3826, 813-397-4871

Women in Aviation Conference, MAR 12-14, Las Vegas, NV. POC: Dr. Peggy Baty, Parks College of Saint Louis University, Cahokia, IL 62206, 618-337-7500 x203.

Guadalcanal (LPH-7) proposed reunion, Spring/Summer 92, Norfolk, VA. POC: P. L. Sullivan, 73 Windwhisper Ln., Annapolis, MD 21403-3474, 301-268-3982.

VF(N)-52 reunion, APR 21-23, Pensacola, FL. POC: Douglas Horst, 2612 Salina Way, Kissimmee, FL 34758, 407-846-4388.

Long Island (CVE-1) reunion, APR 20-22, Las Vegas, NV. POC: Lowell Sieler, 5808 W. Alta Dr., Las Vegas, NV 89107, 702-258-6090.

Tarawa (CV/CVA/CVS-40) reunion, APR 30-MAY 3, Norfolk, VA. POC: Larry

Eckard, PO Box 5145, Hickory, NC 28603, 704-256-6274.

Lexington (CV-2) Club reunion, MAY 6-9, Salt Lake City, UT. POC: Walt Kastner, 466 Ivy Glen Dr., Mira Loma, CA 91752, 714-681-1101.

Franklin D. Roosevelt (CV-42) reunion, MAY 7-10, Charleston, SC. POC: Robert McCauley, 1987 Bucknell St., Chula Vista, CA 92013, 800-437-0869.

CAG-11 WW II Golden Anniversary reunion, MAY 13-17, Virginia Beach, VA. POC: Rod Ham, 361 Chickasaw Rd., Virginia Beach, VA 23462, 804-499-2630.

CAG-12 (embarked Randolph (CV-15) Jan-Jun 1945) reunion, MAY 13-17, Virginia Beach, VA. POC: Bill Hazlehurst, 647 Sussex Rd., Towson, MD 21204, 301-825-7055.

PBM Mariner reunion, MAY 13-17, Virginia Beach, VA. POC: Dr. Harold Stetson, 222 N. Chancellor St., Newtown, PA 18940-2206, 215-968-3103.

VP/VPB-204 reunion, MAY 13-17, Virginia Beach, VA. POC: George Thaler, 310 S. Main St., Chippewa Falls, WI 54729, 715-723-2822.

Kearsarge (CV/CVA/CVS-33) reunion, MAY 14-16, Mobile, AL. POC: Kenneth McDaniel, 301 East Dr., Oak Ridge, TN 37830, 615-482-4302.

Point Cruz (CVE-119) reunion, MAY 21-23, Huntsville, AL. POC: Cecil Thomas, 1217 Belrne Ave. NE, Huntsville, AL 35801, 205-536-8240.

PB4Y reunion, MAY 21-24, Orlando, FL. POC: Ron Sathre, 31262 San Andreas Dr., Union City, CA 94587, 415-471-7727.

Ticonderoga (CV/CVA/CVS-14) CG 47 reunion, MAY 21-24, Portland, ME. POC: Frank Herbert, 798 Main St., S. Portland, ME 04106, 207-774-0391.

Former Navy Convair flight crews reunion, MAY 28-31, Pensacola, FL. POC: Robert Campbell, Rt. 2, Box 161, Harrisonburg, VA 22801, 703-434-8957.

Guadalcanal (CVE-60) Task Group 22.3 reunion, JUN 92, Everett, WA. POC: J. S. Dutton, 5530 Winchelsea Dr. Normandy, MO 63121, 314-522-3975.

VB/VPB-144) reunion, JUN 92, San Diego, CA. POC: Lynn Hawkins, 24 Admiralty Cr., Coronado, CA 92118, 619-424-9016.

Battle of Midway Veterans (all services) reunion, JUN 3-7, San Diego, CA. POC: Operation Friendly Invasion, PO Box 234, Wayne, PA 19087-0234.

VP/VPB-53 reunion, JUN 4-6, Memphis, TN. POC: Charles E. Smith, 321 Greenwood Dr., Paris, TN 38242, 901-642-6759.

NAS Olathe reunion, JUN 24-28. POC: Joe Cox, Old Olathe Naval Air Museum, 8616 Kessler, Overland Park, KS 66212, 913-381-3939.

Correction

NANews, NOV-DEC 91, "A Good-bye Between Friends," p. 13: The photo credit should have read JOC Craig D. Grisoli vice JOC S. A. Cornfeld.

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