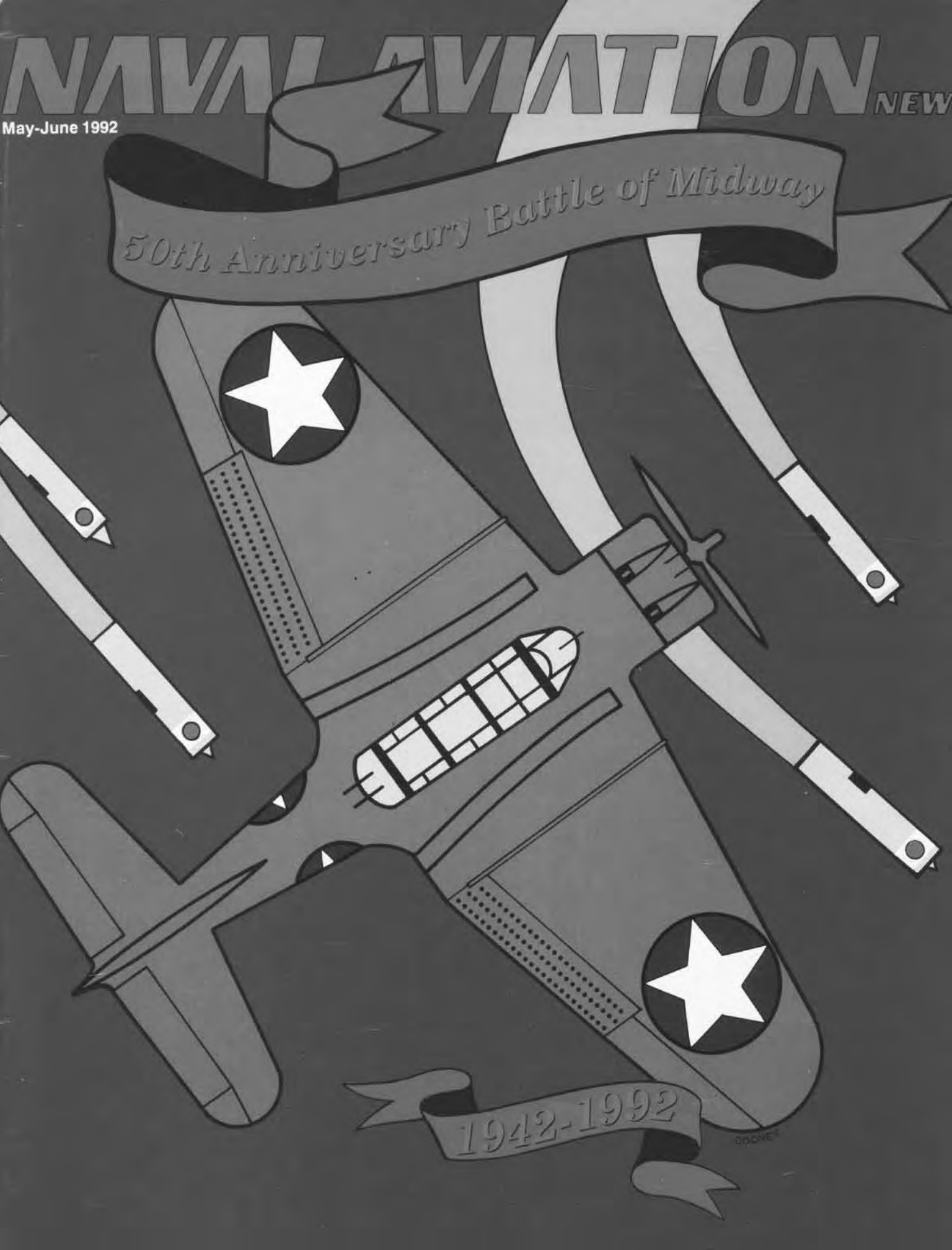
NAVAL AVIATION NEWS

May-June 1992



NAVAL AVIATION NEWS

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COVERS–Front: *NANews* Art Director Charles Cooney captured the critical elements of the Battle of Midway in marking its 50th anniversary. Back: An EP-3E *Orion*, center, is followed by two EA-3B *Skywarriors* during flight ops near Gibraltar in 1991, shortly before VQ-2 retired its last *Skywarriors*. (PH3 Franklin P. Call)

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By VAdm. Dick Dunleavy, ACNO (Air Warfare)

The Momentum of Midway

U. S. Naval Aviation came of age as a decisive force 50 years ago during the battles of Coral Sea and Midway, which we commemorate in this issue. In May and June 1942, Navy and Marine Corps flyers and the troops and ships that launched them turned out to be the real "showstoppers" to the Japanese advance in the Pacific. With some great men, great headwork, and too few good planes and ships, the pattern of naval warfare was changed forever. Naval Aviation became the tip of the spear and has remained there ever since.

Lest we forget, Midway was a close call. A lot of our crews (some with less than 10 hours in type) went into battle in sadly antiquated "clunkers" that ate the dust of technology zooming by. Too many crews never returned. Good tactical thinking by the task force commanders and strike leaders, plus a lot of brave crews and good fortune, saved the day.

Progressively armed with more and better planes and ships, Naval Aviation went on to destroy the Japanese fleet and carry the war to the Japanese homeland. Victorious, Naval Aviation continued as a flexibly responsive force that met one international crisis after another in the decades since. We were able to do that because we always kept the tip of the spear sharp with well-trained people and modern aircraft and weapons that met the requirements of the time. The recent success of Operation *Desert Storm*, the farthest thing from a close call, is the culmination of almost five decades of refining excellence in men and machines.

This is no time to relax. Requirements never stand still, and the budget problems in training our crews and modernizing our aircraft fleet and weapons to meet changing requirements grow ever larger. We are meeting the challenge in a number of ways, including:

– "necking down" the number of aircraft types

– incremental modernization of older types

– extending the life of older aircraft

– making hard choices in the aircraft we choose to procure

– procuring jointly with other services where possible

– retiring "cats and dogs" costly to maintain

– integrating Marine Aviation more fully on carrier decks

– consolidating some fleet readiness squadrons at one site

– increased use of computer simulation technology

– streamlining our shore infrastructure

– using the Naval Air Reserve wherever possible.

As challenging as this all is, we can press on with confidence because of the quality of our people in Washington and in the fleet who are solving the problems with hard work and good headwork. We also have the support of our top civilian leadership and the Congress for our critical aircraft programs, particularly the FA-18E/F and the AX. By maintaining the momentum of excellence generated by its victory at Midway 50 years ago, Naval Aviation will always be sharp. Keep strokin'.

CWO2 A. A. Alleyne

Superb ships, planes, and people, such as depicted here in Dwight D. Eisenhower (CVN-69), have kept Naval Aviation sharp since Midway 50 years ago.

Osborn

Hasslin' Hornet

Two FA-18Cs were on an overwater one-versus-one air combat maneuvering flight. Following an engagement during which the wingman executed a left oblique maneuver, the leader called, "OK, let's knock it off. I'm at your right side now. Level your wings." The leader intended to maneuver the flight for the next setup.

The wingman, however, was experiencing difficulty. He had flown into an 80-degree, nose-up attitude, 120 knots airspeed. Shortly thereafter, his *Hornet* stagnated at 25 degrees nose up, 70-degree left angle of bank, 60 knots airspeed. The pilot increased left rudder, left aileron, and backstick and the FA-18 departed controlled flight.

The leader thought his wingman appeared to be in a flat attitude relative to the horizon but did not realize the pilot was out of control. The pilot in trouble retarded throttles to idle and held flight controls neutral. At 16,000 feet, descending airspeed indicated 48 knots.

"Do you have a visual on me?" transmitted the leader.

"Knock it off. I'm ballistic," responded the wingman, alerting the leader he was, indeed, out of control.

The leader rogered.

The wingman then selected "normal" on the heads up display symbology in order to obtain boxes around altitude and airspeed. He did not, at any time, recall the angle of attack (AOA) reading but heard the AOA tone intermittently.

The leader maintained continuing relative position on the falling *Hornet*. At 14,000 feet, he called, "10,000 feet" to advise the wingman of the approaching altitude. The wingman rogered. Passing 11,000 feet, he momentarily selected military power while maintaining neutral flight controls, then reselected idle.

The *Hornet* was now oscillating slightly in roll and pitch. "Get the AOA down," transmitted the leader. As the motion became more violent, the wingman had to work harder to maintain neutral stick by bracing his feet against the rudder pedals and his body against the seat with both hands on the stick. He could not understand why the *Hornet* was not accelerating or beginning to recover. He actuated

the spin recovery switch but that didn't help.

The leader radioed, "9,000 feet," and at 7,500 feet the wingman decided to eject. He took his left hand off the stick and placed it on the throttle to transmit his intentions. He took his right hand off the stick and located the ejection handle.

When the leader noticed the *Hornet* pitch nose down, he reported, "You're gaining airspeed. That's good," just as the wingman transmitted, "Ejecting." Neither heard the other's call.

The wingman safely ejected and was rescued, uninjured. The time from the "Knock it off. I'm ballistic," call to ejection was 39 seconds, and in this period the *Hornet* swung 350 degrees counterclockwise, losing 7,000 feet.

Grampaw Pettibone says:

Holy Howlin' Hornets! This flyer put himself into his own vise by violatin' one of the hard rules of the aviatin' business: maintain flyin' speed! He couldn't complete the vertical maneuver, then induced the departure with increasin' left rudder, left aileron, and backstick at too low a speed.

It took him too long to analyze his out-of-control situation. He didn't use the AOA, visually or aurally, to figure out where his nose really was. He thought the nose was down when it was flat, and couldn't figure why he wasn't gainin' speed. The indicator kept tellin' him 48 or so knots. Confusion got the best of him.

He probably had high AOA hang-up or was in a low yaw rate

spin. Whatever, at the first sign of trouble, neutral controls mighta got him out of it. Could be he was unknowningly holdin' aft stick in and overridin' the feedback mechanism, too.

Key points: call on your indicators (AOA) and other instruments for help if things don't "feel" right – just like when you get vertigo off the bow. And know what to do before you have to do it – meanin' practice for emergencies.

Ole Gramps is all for bein' optimistic, as most Naval Aviators are. But the best pros are the wary optimists who know how to handle trouble immediately, especially when it comes unannounced.

Seasprite Smash

An SH-2F *Seasprite* had returned to base following a sensor operator NATOPS (Naval Air Training and Operating Procedures Standardization) check. The tower reported winds northeast at 10 knots, although the pilot (in command) and copilot thought they were stronger. The copilot performed three normal approaches for training purposes. Then the pilot made one normal approach to a hover with the automatic stabilization equipment (ASE) off. He did not inform the copilot prior to turning off the ASE. The pilot was then cleared to perform five minutes of hover work at the approach end of the runway while waiting for the hot-refueling crew to set up at the hot-pit area.

The pilot performed constant heading maneuvers while hovering, ASE off, in a box pattern. From a hover into the wind, the pilot then began an "ASE off turn on the spot" to the left. He did not announce this intention to the copilot.

At this point, the pilot thought the *Seasprite* felt "squirrelly." The rate of turn slowed, then increased rapidly. Someone called "left" or "authority." The pilot applied full left pedal and held it in. He thought he had lost tail rotor authority and at 30-40 feet altitude lowered the nose to fly out of situation.

The copilot noted that as the tail passed through the wind line, it "whipped around and continued rotating.... [The *Seasprite*] spun around rapidly two or three times to the left."

(Note: With a helicopter yawing to the left, an increase of collective (power) will result in slowing the yaw rate. In right yaw rate, an increase in collective will result in an increasing rate of right yaw.)

Nearing the ground, the pilot increased collective and the rate of spin slowed. The copilot asked the pilot if he had control but received no response. The sensor operator called "gear" and "ECLs" (engine condition levers) and the copilot secured the ECLs. The pilot did not hear the call for ECLs or ask to have them secured.

Everyone in the crew except the pilot had heard a "pop" or "bang" or "muffled thud" noise. The copilot suspected loss of tail rotor thrust.

Out of control, with wings level and nose high, the SH-2F struck the ground, bounced once, impacted tail pylon first, and came to rest in a right wing-down position. All four crewman egressed safely, suffering "first aid" injuries. A ground crewman was also slightly injured. The *Seasprite* was destroyed.

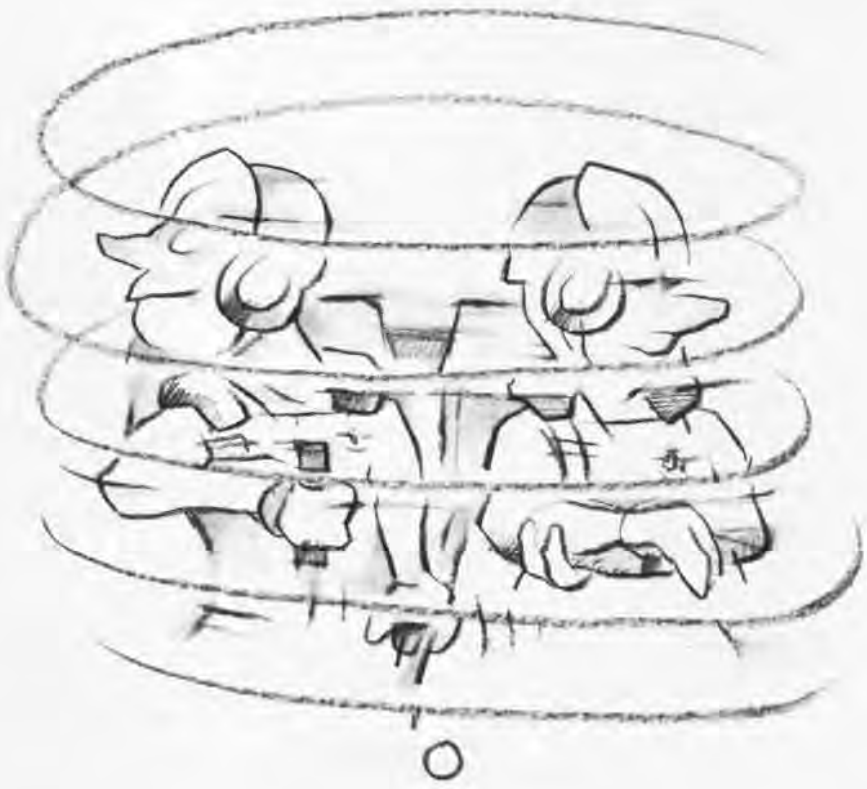
Grampaw Pettibone says:

Gol dang it! Headwork, cockpit coordination – and some other things – took the day off on this one! The crew simply wasn't ready for trouble.

The experts checked the stricken Seasprite over really good and found no signs of mechanical problems. Most likely, that "pop" sound was the noise of an engine compressor stall, caused by disrupted airflow as the helo spun around.

Rotary wing folks have to remember that yaw rate during a turn-on-the-spot will increase after the tail of the bird passes through the wind line. The pilot didn't anticipate this effect. Nor did he recognize quickly enough the need to reduce pedal input to regain control. The left yaw, combined with the ASE off condition, aggravated matters. Sure woulda helped if the copilot had chimed in with a call to "neutralize the pedals," too.

So, strike one Seasprite. But learn from the accident.



Dr. Joseph G. Handelman

Topgun Tomcat – The Navy Fighter Weapons School has painted one of its four F-14As (BuNo 159855) to resemble a Soviet-built Su-27 Flanker, seen here at NAS Miramar, Calif., in December 1991.

CV Salutes Cubi at Last Call

An era came to an end on March 21 as *Independence* (CV-62) departed Subic Bay, the last carrier scheduled to call at the base before its closure later this year.

Carrier Air Wing (CVW) 5, assigned to *Independence*, sponsored an air demonstration on March 17 to salute NAS Cubi Point's Radford Field, which has supported Naval Aviation in the western Pacific for 36 years. Twenty-two aircraft from CVW-5, Marine Fighter Attack Squadron 115, Fleet Composite Squadron (VC) 5, and Fleet Logistics Support Squadron (VRC) 50 conducted a half-hour flight demonstration that ended with an 18-aircraft formation flyover of Radford Field.

When Naval Station Subic is turned over to the Philippine government in October 1992, Navy activities will be consolidated at Cubi Point, which subsequently will be closed by the end of December. VRC-50 will move to Andersen AFB, Guam, in August, the month that VC-5 will be disestablished.

SecDef Announces Reserve Cuts

The Secretary of Defense announced on March 26 plans to cut 830 National Guard and Reserve units, including five Navy and three Marine Reserve Force squadrons, as part of reserve force structure reductions to parallel cuts in the active force structure.

The Naval Air Reserve stands to lose four patrol squadrons (VP) and one light antisubmarine helicopter squadron (HSL) during FY 93. These units are VP-64 at NAS Willow Grove, Pa.; VP-67 at NAS Memphis, Tenn.; VP-90 at NAS Glenview, Ill.; and VP-93 at NAS Detroit, Mich., all flying the P-3B *Orion*, and HSL-74 at NAS South Weymouth, Mass., which flies the SH-2F *Seasprite*.

During FY 92, the Marine Corps Reserve will lose two of its four A-4M *Skyhawk* attack squadrons (VMA), VMA-133 at NAS Alameda, Calif., and VMA-322 at NAS South Weymouth. The Marine Corps Reserve's only electronic warfare squadron, VMAQ-4 at NAS Whidbey Island, Wash., will be deactivated on September 30, 1992, but will be reactivated as an active duty squadron on October 1 (see "VMAQ-2 Playboys to Split").

Two VPs, FRS Slated for Cut

The Navy has approved a plan to disestablish two fleet patrol (VP) squadrons and one patrol fleet readiness squadron (FRS), and redistribute the fleet squadrons remaining at NAS Moffett Field, Calif., to the other three fleet VP air stations. Moffett Field is slated to be disestablished by October 1994.

VP-50 at Moffett Field and VP-6 at NAS Barbers Point, Hawaii, will be disestablished in June 1992 and May 1993, respectively. The West Coast P-3 FRS, VP-31, will slowly draw down its training activity and consolidate all P-3 training at VP-30, the East Coast FRS at NAS Jacksonville, Fla., and be disestablished by November 1993. (The table delineates all active squadrons affected by the closure of Moffett Field.)

The squadron disestablishments will allow additional Naval Air Reserve VP squadrons to transition from P-3Bs to P-3Cs. Plans to relocate VP-91, the reserve squadron at Moffett Field, have not yet been announced.

The closure of Moffett Field

Aircraft Carrier Force Plans

Assistant Secretary of Defense for Public Affairs Pete Williams detailed plans for upcoming changes by fiscal year (FY) in the Navy's aircraft carrier force in a February 4 news briefing.

FY	Carrier	Hull#	Change
92	Midway	41	Decommission (11 Apr 92)
	George Washington	73	Commission (4 Jul 1992)
93	Ranger	61	Decommission
95	Saratoga	60	Decommission
96	America	66	Decommission
	John C. Stennis	74	Commission

Active Squadrons Affected by NAS Moffett Field Closure

Unit	Aircraft	Base	Action
VP-22	P-3C UII.5	Barbers Pt.	Transition to UIIIR May 92
VP-50	P-3C UIIIR	Moffett	Disestablish 30 Jun 92
VP-9	P-3C UIIIR	Moffett	Move to Barbers Pt. Nov 92
VP-6	P-3C UII.5	Barbers Pt.	Disestablish May 93
VP-40	P-3C UIII	Moffett	Move to Brunswick and transition to UII.5 May 93
VP-17	P-3C UI	Barbers Pt.	Transition to UIII Sep 93
VP-46	P-3C UIIIR	Moffett	Move to Jacksonville Nov 93
VP-47	P-3C UIII	Moffett	Move to Barbers Pt. Nov 93
VP-31	P-3C(var.)	Moffett	Disestablish Nov 93.

Key: P-3C Versions
UI = Update I UII.5 = Update II.5
UIII = Update III UIIIR = Update III Retrofit

will also involve the relocation of Commander Patrol Wings, Pacific, to Barbers Point and the disestablishment of Commander Patrol Wing 10.

VMAQ-2 Playboys to Split

The Marine Corps' single active duty electronic warfare squadron, VMAQ-2, will be split into three separate squadrons and joined by a fourth squadron changing from reserve to active status.

Based at MCAS Cherry Point, N.C., the VMAQ-2 *Playboys* have long maintained three EA-6B *Prowler* detachments (X, Y, and Z) to meet rotating overseas deployment commitments. On July 1, 1992, VMAQ-2 will be split to form VMAQs 1, 2, and 3. They will be joined at Cherry Point by VMAQ-4, which is deactivating as a reserve squadron at NAS Whidbey Island, Wash., on September 30, 1992, and will be reactivated on October 1 as an active squadron.

TraWing-3 Fading with Beeville

Commander Training Air Wing (TraWing) 3 and the three assigned training squadrons (VTs 24, 25, and 26) will be disestablished by October 1992 as part of force-level reductions in concert with the upcoming congressionally approved closure of NAS Chase Field, Beeville, Texas.

The Navy's reduced pilot training requirement in light of force-level reductions is allowing the Chief of Naval Air Training to consolidate all strike syllabus training with TraWing-1 at NAS Meridian, Miss., and TraWing-2 at NAS Kingsville, Texas.

The intermediate training squadron, VT-26, completed training its last students in the T-2C *Buckeye* in mid-April and is scheduled to be disestablished on May 22, 1992. Its students, now in advanced training with the two TA-4J *Skyhawk* squadrons, VTs 24 and 25, are expected to complete their strike syllabus by September, allowing the squadrons and the wing staff to shut down by October.

MiG Killer Moves to Museum – The last F-4 Phantom II in Marine Corps service departed NAS Dallas, Texas, on February 28 for a short flight to Carswell AFB, Texas, for permanent display at the Fort Worth Aviation Museum. F-4S BuNo 157293, the last Phantom in VMFA-112 and MAG-41 (see NANews, Mar-Apr 1992, pp. 10-11), took to the air for one last time with Maj. Roy Palmer and Lt.Col. Benjamin Gipe as its crew. On June 21, 1972, VF-31's Cdr. Sam Flynn and Lt. William John downed a North Vietnamese MiG-21 fighter with this aircraft.

Electric Vikings – The prototype ES-3A (BuNo 159401) (left top) recently underwent electromagnetic compatibility and tempest testing in the Anechoic Chamber of the Flight Test and Engineering Group at the Naval Air Warfare Center, Patuxent River, Md. The first production ES-3A (BuNo 159404), modified by a Lockheed field team at NAS Cecil Field, Fla., is shown (left bottom) after its January 21 maiden flight. It has joined the prototype at Patuxent River for evaluation to be completed this fall. Equipped with a mission avionics system compatible with that on the land-based EP-3E Aries II, the ES-3A also has its bomb bay modified to hold additional avionics, and has the copilot position replaced by a third sensor station. The crew consists of a pilot, a Naval Flight Officer as an electronic warfare evaluator, and two enlisted sensor operators.

VS-31 became the first operational S-3 squadron to fire a Harpoon missile with a live warhead. After two hits by Harpoons fired by two destroyers, a target barge in the North Arabian Sea was sunk by the Topcats' missile.

CVW-6 Disestablished

Commander Carrier Air Wing (CVW) 6 was disestablished during an April 1 ceremony at NAS Cecil Field, Fla., closing out more than 49

years of service. Capt. Stanley F. Bloyer was the last "CAG Six."

CVW-6 started out on January 1, 1943, as Carrier Air Group (CVG) 17, the first to operate the F4U *Corsair* and deploy with the SB2C *Helldiver*, introducing that plane into combat on a raid launched from *Bunker Hill* (CV-17) against the Japanese stronghold at Rabaul, New Britain, in November 1943. The wing also raided the Gilbert, Marshall, and Truk islands during its first war cruise. CVG-17 made a second war cruise aboard *Hornet* (CV-12), operating in the Iwo Jima and Okinawa campaigns in 1945.

In 1946, CVG-17 was redesignated CVBG-17, and subsequently CVBG-5, before assuming its present number as CVG-6 in 1948. The group operated in the Atlantic and Mediterranean aboard *Valley Forge* (CV-45), *Coral Sea* (CVB-43), *Midway* (CVB-41), *Franklin D. Roosevelt* (CVB-42), *Lake Champlain* (CV-39), and *Intrepid* (CVA-11). CVG-6 was the first group to deploy aboard the first nuclear carrier, *Enterprise* (CVAN-65), and faced off against Cuba from her decks during the 1962 Cuban Missile Crisis. Redesignated CVW-6 in December 1963, the wing also rode *Enterprise* around the world during the 1964 Operation *Sea Orbit*.

For the next 28 years, CVW-6 deployed mostly to the Mediterranean aboard *America* (CVA-66), *Franklin D. Roosevelt* (CV-42), *Independence* (CV-62), and *Forrestal* (CV-59). The wing made one combat deployment to Vietnam aboard *America* in 1968, during which one of its F-4Js from VF-33 destroyed a North Vietnamese MiG-21 fighter. CVW-6 also saw combat in late 1983 during the Grenada crisis and the retaliatory raid in Lebanon.

A military version of the Sikorsky S-92 helicopter design has been proposed by that company as a replacement for the Navy and Marine H-46 series amphibious assault and vertical replenishment helicopters. Seen here in mock-up, the proposed helicopter is designed to carry 22 troops out to an unrefueled radius of 200 nautical miles, and features a refueling probe, rear loading ramp, folding rotor blades and tail rotor pylon, an infrared sensor, and infrared countermeasures.

Deactivated...

VMFA-333

A March 20 ceremony at MCAS Beaufort, S.C., marked the deactivation (effective

March 31) of Marine Fighter Attack Squadron (VMFA) 333 after more than 42 years of service. Lt.Col. Tom Benes was the last C.O. of the *Shamrocks*, also affectionately known as "Trip' Trey."

The *Shamrocks* were activated on August 1, 1943, as Marine Scout Bombing Squadron (VMSB) 333 at MCAS Cherry Point, N.C., with SBD-4 *Dauntless* dive-bombers. Later equipped with SBD-5s, the squadron was assigned garrison duty at Midway Island in July 1944. In October 1944, the squadron was redesignated as Marine Fighter Bomber Squadron (VMBF) 333 equipped with F4U-1D *Corsairs* and assigned to Hawaii. In December 1944, the squadron designation reverted back to VMSB-333, being deactivated on November 1, 1945.

Reactivated on May 8, 1952, as Marine Attack Squadron (VMA) 333 at Miami, Fla., the *Shamrocks* operated the F6F-5 *Hellcat* and later the F4U, and acquired AD-5/6 *Skyraiders* in

LCpl Adam B. Campbell, USMC

A retired F-4J, painted to represent VMFA-333's Vietnam war MiG-killing cruise, joined a squadron FA-18A at the Shamrocks' deactivation ceremony.

1954. Redesignated as Marine Fighter Squadron (VMF) 333 in January 1957, the *Shamrocks* entered the jet age with the FJ-3 *Fury* and in 1959 became the first Marine squadron to operate the F8U-2 (F-8C) *Crusader*. VMF-333 participated in the 1962 Cuban Missile Crisis with its F8U-2s (F-8C) and was redesignated Marine All-Weather Fighter Squadron (VMF(AW)) 333 in February 1966 operating the F-8D and F-8E.

As the *Shamrocks* transitioned to the F-4J *Phantom II* in 1968, they assumed their VMFA-333 designation. The squadron made a Mediterranean cruise in 1971 with Carrier Air Wing 8 aboard *America* (CVA-66), followed the next year by a deployment to Vietnam aboard *America*. During that war cruise, one crew, Maj. Lee Lasseter and Capt. John Cummings, shot down a North Vietnamese MiG-21 fighter on November 9, 1972.

The squadron deployed aboard *Nimitz* (CVN-68) for short cruises in the 1970s. In between routine exercises and deployments to Japan, VMFA-333 transitioned to the FA-18A *Hornet* in 1987. The squadron made an emergency deployment to the Arabian peninsula on August 20, 1990, as part of Operation *Desert Shield*. During Operation *Desert Storm* in 1991, the *Shamrocks* flew 706 combat missions without loss and delivered more than 2 million pounds of ordnance against Iraqi forces.

VMFA-531

A March 27 ceremony at MCAS El Toro, Calif., marked the deactivation (effective March 31) of Marine Fighter Attack Squadron (VMFA) 531 after more than 49 years of service. Lt.Col. Keith Stalder was the last C.O. of the *Grey Ghosts*.

The *Grey Ghosts*, activated as VMF(N)-531 at MCAS Cherry Point, N.C., on November 16, 1942, started out as the Marine Corps' first night-fighter squadron. A cadre of its men spent three months in England studying British night-fighting successes against the Luftwaffe and used that knowledge to develop tactics for the first American radar-equipped night-fighter squadron to see combat. While awaiting delivery of their radar-equipped PV-1 *Venturas*, the *Grey Ghosts* were initially equipped with SNJ-4 and SB2A-4 aircraft. They went into combat with their PV-1s in the Solomon Islands in September 1943, shooting down 12 Japanese aircraft at night without combat loss during its pioneering tour, returning to Cherry Point in August 1944, and being deactivated in September.

VMF(N)-531 was shortly reactivated in October 1944 and moved to Eagle Mountain Lake, Texas, where wide-open skies enhanced its mission of training Marine night-fighting aircrews. The squadron operated F7F-1N/2N/3N, SBD-5/6, and SB2C-4E aircraft until the war ended, moving back to Cherry Point in 1946. By 1947, the squadron was back as an operational unit with F7F-3N *Tigercats* and F6F-5N *Hellcats*. In 1948, the *Grey Ghosts* were redesignated an all-weather fighter squadron (VMF(AW)-531).

Although an operational unit, VMF(AW)-531 was kept busy at Cherry Point training night-fighter crews, sending many on to glory in Korea with other units shooting down North Korean and Chinese aircraft with their *Tigercats* and F3D-2 *Skyknight* jets. In 1958, the F3Ds were replaced by F4D-1 *Skyrays*, with which they made two deployments to Japan before transitioning to the F-4B *Phantom II*, participating in the 1962 Cuban Missile Crisis, and being redesignated fighter attack squadron (VMFA) 531 in August 1963.

Deploying to Da Nang, Vietnam, in April 1965, the *Grey Ghosts* became the first Marine jet squadron to see combat since the Korean War, returning to Cherry Point in July of that year. The squadron moved to MCAS El Toro, Calif., in April 1968, and deployed to the Mediterranean aboard *Forrestal* (CVA-59) in 1972-73. Deactivated in June 1975 and reactivated in August 1975 with the F-4N fighter, the *Grey Ghosts* made an Indian Ocean deployment during the Iranian Hostage Crisis aboard *Coral Sea* (CV-43) in 1979-80. VMFA-531 became the Marine Corps' third FA-18A *Hornet* squadron in January 1983.

For the Record...

✈ The Navy's newest aircraft carrier, ***George Washington*** (CVN-73), will be commissioned on July 4, 1992, in Norfolk, Va.

✈ The **VA-34** *Blue Blasters* became the first fleet A-6E squadron to fire an AGM-65E **laser-guided *Maverick*** missile. During a February 11 exercise in the Arabian Gulf, one missile was fired by a laser-designating aircraft, which then designated the target for another A-6E firing a second *Maverick*. Both missiles hit the target.

✈ The **VA-155** *Silver Foxes* became the first fleet squadron to fire an **infrared seeker *Maverick*** missile, during an exercise near NAS Fallon, Nev.

✈ **Strategic Communications Wing 1** is scheduled for a May 1 establishment at Tinker AFB, Okla. The wing will be the functional command for the Navy's two TACAMO (take charge and move out) squadrons, VQs 3 and 4, which will relocate to Tinker AFB as well.

✈ **VFA-87** and **VFA-15**, the *Hornet* squadrons assigned to Carrier Air Wing 8 aboard *Theodore Roosevelt* (CVN-71), are transitioning from the FA-18A to the **night-attack FA-18C**. Once complete, all Atlantic Fleet carrier air wings will be equipped with the FA-18C version.

✈ **VFA-127** is transitioning to the **FA-18A/B** *Hornet* from the F-5E *Tiger II*, becoming the first adversary squadron to operate the *Hornet*.

✈ **VC-5**, based at NAS Cubi Point, R.P., is slated for **disestablishment** on August 31, 1992, as part of the withdrawal of U.S. forces from

USMC-Sgt. Kay Riley

Iwakuni farewells Intruders – VMA(AW)-224 departed MCAS Iwakuni, Japan, on March 10 as the last Marine A-6 Intruder squadron to deploy there under the Unit Deployment Program (UDP). They were relieved by VMFA(AW)-121, home-based at MCAS El Toro, Calif., the first FA-18D squadron to participate in the UDP. VMA(AW)-224, which returned to MCAS Cherry Point, N.C., is also scheduled to transition to the FA-18D.

the Philippines. The squadron provides aggressor, target, rescue, and utility services for the Seventh Fleet.

✈ **VFA-132**, an FA-18A squadron based at NAS Cecil Field, Fla., and **VAQ-133**, an EA-6B squadron based at NAS Whidbey Island, Wash., are both scheduled for **disestablishment** on June 1 as part of the drawdown of Carrier Air Wing 6. VAQ-133's ceremony was scheduled for April 24, 1992; VFA-132's is scheduled for May 15.

✈ With the recently announced planned phaseout of the **OV-10** *Bronco* observation aircraft, **HMT-303** terminated training of replacement personnel for the aircraft on March 13. Based at MCAS Camp Pendleton, Calif., the helicopter squadron assumed training of Marine **OV-10** personnel in October 1991 from the Air Force. (See *NANews*, Nov-Dec 1991, p.5.) In addition, the **six OV-10As** acquired from the **Air Force** last year will be retired rather that converted to OV-10Ds.

✈ ***Corsairs* Forever?** A decision to retire all remaining A-7 aircraft by April 1, 1992 (*NANews*, Mar-Apr 1992, p.7), was partially reversed in order to retain 11 **TA-7C** and 3 **EA-7L** aircraft on strength with the **Naval Air Warfare Center** as chase aircraft for various programs, including the *Tomahawk* missile program.

✈ **CGAS Cape Cod**, Mass., recently received a complement of **HH-60J** *Jayhawk* helicopters to replace its old HH-3F *Pelican* rescue helicopters, becoming the fifth Coast Guard air station to receive the *Jayhawk* (after Mobile, Ala.; Elizabeth City, N.C.; Traverse City, Mich.; and San Francisco, Calif., which have all retired their HH-3F and CH-3E helicopters).

✈ The **U.S. Customs Service** has contracted Lockheed to modify an ex-Navy P-3B (BuNo 154575) into its fourth **P-3 airborne early warning** (AEW) aircraft for drug interdiction operations. The aircraft will feature a 24-foot rotodome housing an APS-138 radar, and will feature enhancements such as the AYK-14 central processing computer that will be retrofitted into the earlier AEW P-3s. In three years of operations, the first two P-3 AEW aircraft aided in the seizure of 36 tons of cocaine, 13 tons of marijuana, and 161 arrests. The third aircraft is currently under modification.

✈ A former Navy **F-14A** (BuNo 158613) that retired two years ago as a flight test vehicle for the **National Aeronautics and Space Administration** was transported in February by Army hovercraft to the Naval Surface Weapons Center, Dahlgren, Va., to be used for target practice and ordnance testing.

PH2 Kevin Graves

Crewmen refuel a Spanish Navy EAV-8A Matador (Harrier) aboard America (CV-66). The jet was one of two that visited the carrier on January 6-7 while operating in the eastern Mediterranean. The Matadors, under the command of LCdr. Jose Palomino, flew eight training sorties against F-14A Tomcats from VFs 33 and 102, and FA-18Cs from VFAs 82 and 86.

At the invitation of the Spanish military, two VR-22 Medrider Hercules transports participated in Betacom 92, a major annual exercise. The Medrider's C-130F and KC-130F (shown here) aircraft flew five paradrop sorties near Cordoba, Spain, dropping 314 Spanish and U.S. Marine Corps paratroppers.

The Navy has accepted delivery of a McDonnell Douglas F-14D Tomcat weapons systems trainer. The advanced system, installed at NAS Miramar, Calif., consists of two 40-foot domes equipped with full F-14D cockpits. The flight trainers can be flown individually or linked together to simulate battle scenarios with a wingman. The trainer presents an integrated battle environment with up to 196 surface and air threats at a time, including third-party engagement. It also offers full simulation of the F-14D APG-71 radar – with a correlating ground map – as well as four levels of skill challenge, from novice to ace.

The trainer is the second of three types of training devices to be delivered for the F-14D trainer program under a contract awarded to McDonnell Douglas Training Systems in 1987. McDonnell Douglas delivered a mission flight trainer for basic aircraft and flight operations to Miramar late in 1990.

The third training device, scheduled for delivery in November 1992, is a tactical environment system (TES), which will expand the weapons systems trainer capabilities by linking three additional cockpit devices for simulated interactive flight. This will create a very complex combat air patrol scenario for full mission rehearsal.

The entire F-14D training system is designed to teach pilots to work together to defend the fleet against surface and air threats. Computers linked to the threats also devise countermeasures against the F-14D group's tactics.

The technology for the TES has been under development at McDonnell Douglas for almost two decades. Current Navy plans call for two mission flight trainers, one weapons systems trainer, and one TES to be installed at Miramar.

JPATS – USN/USAF Joint Primary Aircraft Training System

By LCdr. Clay Umbach

Though many never would have thought it possible, don't be surprised to find Air Force pilots and Naval Aviators being trained on the same primary training aircraft by the end of this decade. For the past three years, the Navy and Air Force have been hammering out requirements for a common aircraft to replace both the USAF T-37B and Navy T-34C. The program – billed the Joint Primary Aircraft Training System (JPATS) – will involve the procurement of nearly 800 aircraft for both services' undergraduate flight training programs. Industry has taken note and is scrambling to be in place with their offerings by the 1993 Request for Proposal, having dubbed JPATS the "trainer sale of the century."

The initial reaction by many is to wonder why the Navy would be looking for a new primary trainer now, as it has only been operating the T-34C for 15 years. The answer lies in a canceled Air Force program, and some "gentle" nudging from Congress.

What eventually would become JPATS began when the USAF canceled its developmental T-46 program, slated to be the T-37B replacement, in 1987. Although the program had been terminated, the USAF still needed a new trainer and submitted the "USAF 1988 Trainer Aircraft Masterplan" to Congress. This masterplan outlined a new primary trainer program that focused on an "off-the-shelf" type acquisition rather than a riskier developmental program as had been the T-46.

Congress agreed with the need but took things a step further. In the FY-89 Defense Authorization Act, Congress asked for an augmentation of the USAF plan and directed the Secretary of Defense to submit a report that outlined Department of Defense (DoD) plans for both future Air Force and Navy trainer aircraft procurements. Specifically, the Congressional language directed: "to the maximum extent possible, outline a plan that will lead to the Air Force and Navy procuring similar training aircraft."

Air Force and Navy officials were quick to see the writing on the wall and put their heads together to come up with a December 1988 Memorandum of Understanding regarding joint trainer procurement. After several months' effort, the Chief of Naval Operations, Secretary of the Navy, and their USAF counterparts submitted the "DoD 1989 Aircraft Trainer Masterplan." It was approved by the Office of the Secretary of Defense and forwarded to Congress on February 15, 1989. The masterplan looked at several possible Navy/Air Force cooperative trainer efforts and concluded, "The most significant opportunity is the acquisition of a common primary trainer for use by the Navy and Air Force."

The masterplan also included a proposed timetable for new aircraft deliveries that would allow the Air Force to start accepting new primary trainers in 1996, with the Navy picking up its first new aircraft at the tail of the production run in 2000. By then, the T-34C would be 24 years old. Perfect timing for a replacement.

Congress accepted the plan, and the USAF Air Training Command (ATC), located at Randolph AFB, and the Chief of Naval Air Training (CNATRA) at NAS Corpus Christi, both in Texas, began working out joint requirements for a new primary trainer. Initial efforts proved difficult: the T-37 and T-34C didn't look anything alike and both services were somewhat parochial in what they preferred. Where the T-37 is a twin-engine, side-by-side seating jet, the T-34 is a single-engine, tandem turboprop. After much discussion, the services agreed

Below left: LTV, with Argentina's FAMA, is proposing the IA-63 Pampa. Below: Lockheed and Aermacchi are submitting the MB-339.

upon tandem seating as the preferred configuration. But that was where the line was drawn. There was no preference for nor bias against either a jet or turboprop. Another major consideration was that the services did not want to invest the time, money, or risk in a full-scale development program. As such, industry would be asked to bring a developed aircraft to source selection and be prepared to participate in a fly-off.

As there were no known U.S. manufacturers with modern military-style training aircraft parked in their warehouses, the services' concluded the aircraft bid for JPATS would probably include some foreign-built proposals. In order to be competitive, these foreign manufacturers would probably be required to "team" with a U.S.-based company in order to successfully bid their product. In order to evaluate the marketplace, joint Navy and Air Force evaluation teams made two visits to Europe and one to South America flying some 10 different trainer aircraft.

To date, five offshore aircraft manufacturers have teamed with U.S. firms to compete for JPATS. Four of these teams are offering single-engine jet aircraft: Grumman and the Italian firm of Gruppo Agusta with the S.211; Lockheed and Aermacchi offering the Italian MB-339; Rockwell and Messerschmitt-Bolkow-Blohm offering the German *FanRanger*; and LTV and FAMA of Argentina offering the IA-63 *Pampa*. So far, the lone turboprop offering has been from Beech and Pilatus Ltd. of Switzerland with the PC-9. Other teaming arrangements may be announced in the future and some U.S.-built aircraft, thought to now be in the design stage, may enter the field before the 1993 Request for Proposal.

In October 1991, ATC and CNATRA briefed their desires at a JPATS requirements summit, cochaired by General Merrill McPeak, Chief of Staff, USAF; and Admiral Jerry Johnson, Vice Chief of Naval Operations. The requirements were approved and a joint operational requirements document published. Shortly thereafter, General McPeak and the CNO, Admiral Frank Kelso, signed a Memorandum of Agreement to acquire JPATS. Also signing were both services' Assistant Secretaries for Acquisition.

Essentially, the services are looking for an aircraft with the docile handling qualities required of a primary trainer, but featuring significant improvements in performance and safety over the existing T-37 and T-34C. A quick run-down of the services' major preliminary requirements includes:

Sustained low-level cruise speed of 250 kts. (270 kts. desired)

Pressurized cockpit

Zero/sixty ejection (Zero/zero desired)

Digital/selectable discrete "glass" cockpit displays

Stepped tandem seating (raised rear seat)

UHF/VHF communication with GPS, ILS, VOR/DME

Adequate birdstrike protection

+6/-3 "G" capability with anti-G system

Benign stall/spin characteristics.

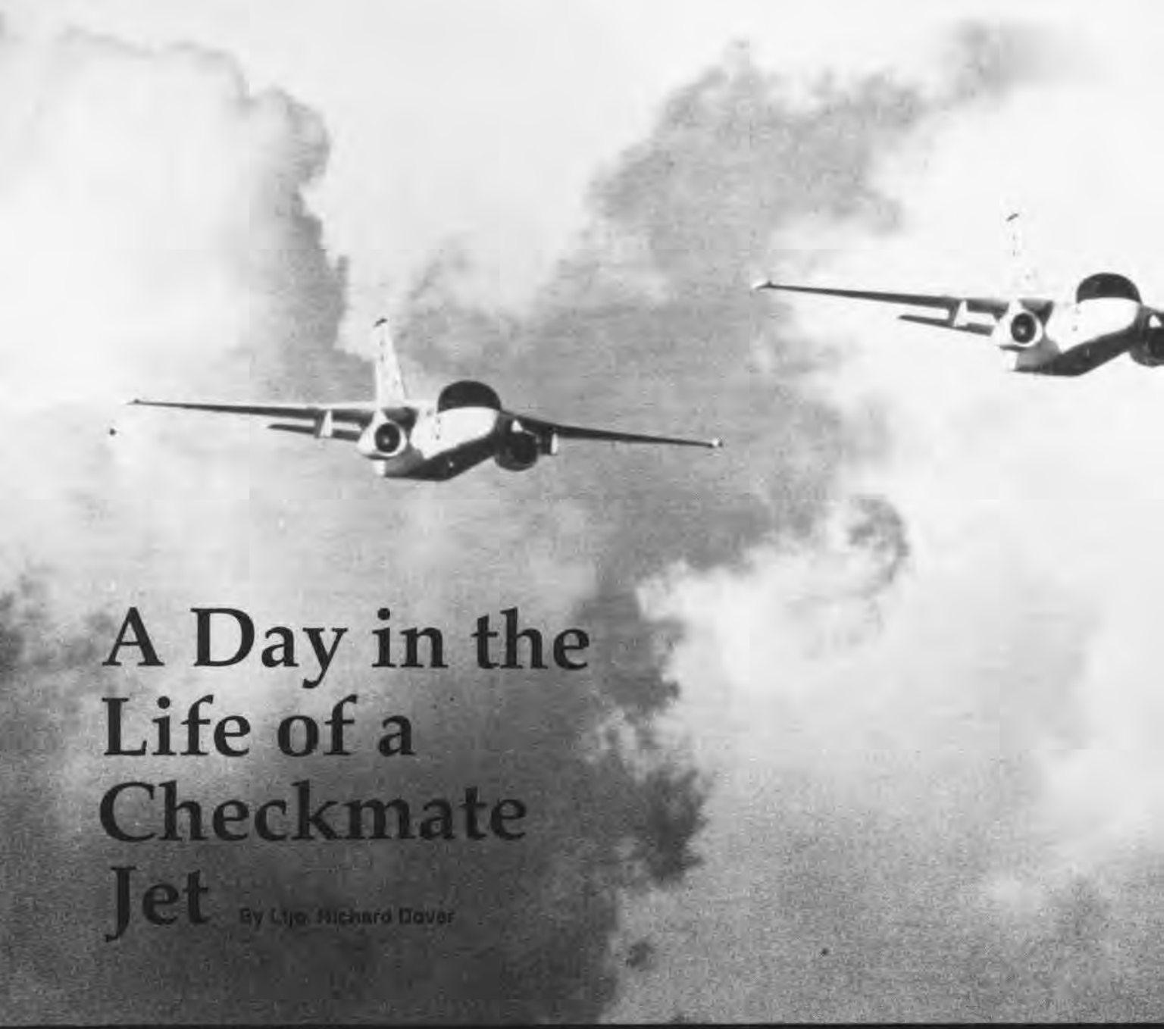
Though the aircraft itself is without a doubt the attractive part of the program, the operative word in JPATS is the last one – system. It is important to note that JPATS will consist of a total training system package – much like the T-45, but tailored to the individual primary training requirements of each service.

The Navy's portion of JPATS is the "Naval Primary Aircraft Training System" (NPATS). NPATS will feature two subsets of its own: one for primary Undergraduate Naval Pilot Training (UNPT) and one tailored for Primary/Intermediate Undergraduate Naval Flight Officer Training (UNFOT). Both UNPT and UNFOT will feature, in addition to the aircraft, ground-based training (simulators, courseware, syllabus, computer-aided instruction, etc.) and logistics and contractor support (aircraft and simulator maintenance, courseware development, simulator instructors, etc.). A planned improvement over the existing T-34C simulator is that the NPATS will feature a visual Operational Flight Trainer to allow introduction of some basic visual flight rules flying skills in the simulator vice actual aircraft.

The next step for the services is to take the program to a Joint Requirements Oversight Council review in April 1992 and a Milestone 0/1 Defense Acquisition Board review in May 1992.

In light of the austere defense budgets, the services must continually find new and innovative ways of doing business. JPATS represents a significant area of cooperation between the Navy and Air Force that few would have previously thought possible. ■

The S211A (left) is the Grumman/Augusta proposal; the Beech Pilatus PC-9 (below left) is the only turboprop entry to date; Rockwell is teaming with MBB/RFB to propose the FanRanger (below).



A Day in the Life of a Checkmate Jet

By Lt(jg) Richard Dover

For every hour of flight time, many long hours of maintenance go into keeping a multimillion dollar aircraft at peak performance.

The sun inches above the sea edge horizon into the indigo blue Caribbean morning sky. On the already steaming tarmac outside Hangar 200 at Naval Station, Roosevelt Roads, P.R., four multimission S-3B *Viking* jets wait with folded wings like birds of prey, ready for flight. Alongside are two E-2C *Hawkeyes*. In the distance, two rows of F-14 *Tomcats* and A-6E *Intruders* fill the "tent city" flight line. The assembled Carrier Air Wing (CVW) 3 jets wait with maintenance troubleshooters in attendance. Air Antisubmarine Squadron (VS) 22 *Checkmate* S-3B 704 is in position on the top of the line.

AC 704, Buno 160149, was built in 1976 as an S-3A. Designed initially for carrier-based antisubmarine warfare (ASW), the *Viking* was a quantum leap forward in aviation war-fighting technology. In 1989, AC 704 was modified and became an S-3B. Adding the super-sophisticated Inverse Synthetic Aperture Radar (ISAR), Harpoon antiship missile capability, a superb electronic support measures suite, a new and totally awesome acoustic data processor, and tanking capability transformed the *Viking* into a true multimission force multiplier to be reckoned with in every aspect of air warfare, including overland strike support, antisurface warfare, mine warfare, and electronic warfare, as well as ASW. During Operation *Desert Storm*, AC 704 was a key element in CVW-3 operations. As integral members of CVW-3 strike groups, *Checkmate* crews flew their jets across five hundred miles of Saudi Arabian desert into hostile Iraqi airspace. S-3B electronic support measures systems detected, identified, fixed, and aided in the destruction of enemy search and missile radars during suppression of enemy air defenses, clearing the way for CVW-3 *Battle Axe* strikers on their way to targets in western Iraq and "Downtown Baghdad."

Viking ISAR searched the Iraqi desert highways for convoys of short-range ballistic SCUD missile launchers creeping out of their holes at night and moving to launch positions. *Viking* convoy detections were passed to USAF E-3A *Sentry* airborne warning and control system aircraft, which called in

Three S-3 Viking aircraft of VS-22.

strikes to eradicate the convoys.

Multimission VS-22 *Vikings* flying overland strike support missions contributed significantly to CVW-3's zero-loss success and eventual victory in "The Storm." Since coming home to a tremendous welcome, AC 704 was disassembled and inspected by Commander, Sea Strike Wing 1 maintenance experts, from the smallest components to the largest, for corrosion and wear from the fast-paced combat operations and corrosive effects of the southwest Asian environment. Reassembled and pronounced an "Up Jet," AC 704 rejoined the *Checkmate* turnaround training rotation to keep VS-22 crews at peak performance. Orange Air operations like these at NS Roosevelt Roads are part of the grand training plan.

At 0620, the aircrew, finished with their brief, head toward the flight line to preflight 704. For the flight crew, the day is just beginning, but for the maintenance troops and plane captains, the day started hours before in the dark and starry Caribbean night.

When 704 landed the night before and taxied to the line, VS-22 troubleshooters were waiting, ready to get the jump on any maintenance problems. Like all things mechanical, even "Up" *Checkmate* jets break – possibly caused by days of intense flying operations.

The average age of a *Checkmate* mechanic is 20 years old. These young professionals work in a pressure cooker where errors and mistakes are marked in blood. Squadron deployments to operating bases like NS Roosevelt Roads train and mature these young men to the rigors of a fast-paced, unforgiving, and often hazardous carrier aviation environment.

ADCS William Gathright says of the men working in the VS-22 Line Division, "...nobody knows what work is like until they have worked on the [carrier] flight deck. There aren't many organizations in the world that entrust 20-year-olds with the care and safe handling of their multimillion-dollar pieces of equipment. The Navy always has...and always will!"

The night before, at 2200, *Checkmate* plane captain ADAN Randy Boesen – just another "average" 20-year-old – began to prepare AC 704 for the morning's flight operations. At final TF-34-400 jet engine shutdown,

ADAN Boesen started his daily and turnaround inspections. Meticulously, using his checklists, Boesen examined 704 for integrity, fluid leaks, oil consumption, tire pressure, and hundreds of other vital details. On this particular night, Boesen discovered the number 2 engine tailpipe cracked. Reporting the situation to the Maintenance CPO on duty, Senior Chief Bob Beardsley, Boesen continued his inspections. AD2 Dennis Connell was dispatched to determine the needed repair. Connell deduced that the tailpipe required removal and a trip to Roosy Roads' Aviation Intermediate Maintenance Department (AIMD) for welding. A quick phone call by Senior Chief Beardsley confirmed the AIMD could have the tailpipe welded and ready for a 0700 launch.

AD2 Connell and another *Checkmate* maintenance stalwart, AME2 Michael Colley, started removing the damaged tailpipe while ADAN Boesen completed his critical plane captain inspections.

On the last event, 704 had come back to Roosy Roads in a driving rainstorm and taken a precautionary field arrested landing. Airframe expert AMS2 Ronnie Deason performed a special inspection on the carrier arresting hook. Deason took particular note of the bolt clearance on the hook point. If the wear gauge indicates too much wear, the "hook" point – the section that actually grabs the arresting cable – must be replaced. In this case, clearance was within tolerance and Deason only needed to retorque the hook retaining bolt. AMS2 Raul Salas witnessed the retorquing as a quality assurance safety measure. In Naval Aviation maintenance, many procedures may be accomplished by one person, but another qualified maintenance technician always observes to ensure objective quality assurance. A second set of eyes ensure catching any missed detail. The lives of aircrew who fly the jets count on the thoroughness of the maintenance crews who repair them.

Senior Chief Beardsley knew 704 had a recent trend of locked trailing edge flaps, so he directed a full check of all the flap assembly rollers, tracks, and lubrication. These all checked "4.0." AE2 Mark Angel examined the cockpit flap guage wiring and searched for a cause for a malfunctioning flap indicator needle. Careful scrutiny of the flap sensing circuitry connected to the gauge discovered a broken wire able to be replaced without removing the flap gauge. Pulling the flap gauge necessitates an entire aircraft landing

Above, mechanics give a Checkmate Viking tender loving care; below right, inside an S-3's cockpit, a mech troubleshoots a problem; and below left, two VS-22 S-3Bs in formation over Florida.

gear drop check, a process requiring six men for two hours, a 12 man-hour task. Thanks to meticulous, professional troubleshooting, Petty Officer Angel finished by 2400 and devoted only a single man-hour.

While AE2 Angel worked in the left seat of the cockpit, AE2 George Kondos examined the inertial navigation system from the right seat. The inertial system had experienced a rare anomaly during the last flight. Petty Officer Kondos methodically swapped inertial system component parts with "known good" components from other *Checkmate* aircraft to isolate the anomaly. Running inertial software computer checks didn't isolate the faulty component part, and Kondos had to use experience and just plain *Checkmate* intuition to determine the source of the anomaly. He established the Inertial Measuring Unit (IMU); it wasn't measuring properly and needed replacement. Another IMU was installed. With 704 now clear of maintenance troops, AMEC Alfred Lasure had a chance to direct his parachute riggers to perform their daily inspection of the ejection seats, parachutes, and oxygen system. By 0030, 704 was no longer a source of production attention on the flight line. Maintenance's attention was focused on the other three *Checkmate* jets until the tailpipe was repaired and ready.

While work on 704 was in progress, Quality Assurance (QA) personnel assisted with the maintenance effort. QA is made up of senior maintenance technicians who have demonstrated superior skill in their jobs and are among the squadron's best in their rating. They monitor the work of each shop, lending their expertise and experience in tricky situations.

AE1 Jeffrey Hirkey says of his job in QA, "Our job is supposed to be just like the name, Quality Assurance, but we prefer to think of ourselves as teachers. Sometimes, like in a detachment situation, we have our sleeves rolled up, too! It's definitely a 'make Up Jets attitude' with everyone pitching in!"

The AIMD called at 0230 to inform VS-22 Maintenance Control that the tailpipe was welded and ready. While the VS-22 duty driver picked up the part, Petty Officers Connell and Colley finished up their work on other *Checkmate* jets and readied themselves to reinstall the tailpipe on 704's starboard engine.

Petty Officer Connell said of the task, "...alignment of the tailpipe was no problem and the job went smooth as silk."

Maintenance on 704 was still in progress at 0400 when Senior Chief Beardsley had to make a decision on

whether to load 10 DST-36 Destructor mines on 704 for the graded mine warfare strike at 0700. A graded mine warfare exercise is a "one shot" deal. If your jet isn't up, you get zero points. Beardsley remarked, "You shouldn't load weapons on a down jet in case it doesn't come up. If the jet doesn't get fixed, you'll have to download the weapons and reload them on another jet. In this case, my decision was easy; we were in the final process of installing the repaired tailpipe. . . .I felt confident 704 would be up and ready on time for the first morning launch."

AO2 Rick Kerns was in charge of the specially trained S-3B conventional ordnance load team. In addition to four mines in the bomb bays and three on each triple ejector rack on the wing pylons, the "ordies" loaded a full load of 60 sonobuoys. The buoys weren't needed until the third flight of the day, but the fast pace of operations during the day could make loading sonobuoys between sorties nearly impossible.

Petty Officer Kerns remarked, "Heavy flight ops like Puerto Rico are tough enough without maintenance problem complications. While Senior Chief Beardsley weighed his decision whether or not to load 704, I gathered my loading crew for procedures and a safety brief. With aviation ordnance, there is no margin for error. I told my men to assemble all the loading gear at the jet; we wouldn't be able to waste any time when word came to load 704. You can't afford to rush a loading job because you deal with exceptionally dangerous weapons. Even inert weapons are hazardous due to weight and explosive cartridge activated devices used to eject weapons from the bomb racks. Ordnance men treat all weapons like they're the real thing."

Given the "green light" to load 704, Petty Officer Kerns' expert crew went right to work. Each team member knew what had to be accomplished in the short time available. These men had performed brilliantly, day in and day out, during 44 intense days of flight deck *Desert Storm* combat operations. They were tempered in the fires of war and naturally rose to the task. Each mine was precisely loaded according to the mine assignment sheets, placed in the hooks, "swayed" down, and quality assured with amazing speed using strict loading procedures. As Petty Officer Kerns put it proudly, "The end result: 100-percent weapons release and not a sortie missed."

Two hours prior to launch, at 0500, Airman Boesen prepped his jet for flight. Maintenance was complete and Boesen checked his *Viking* one last time for combat readiness. He removed red protective covers, cleaned canopies, wiped down the struts, checked hydraulics, and went down his final checklist, item by item. The aircrew would be "walking" soon for their own preflight. Airman Boesen wanted 704 in top condition when the flyers got to his jet.

At 0615, the aircrew checked and reviewed the aircraft discrepancy book in Maintenance Control. All maintenance "gripes" from the previous day's operations were repaired and signed off. Senior Chief Beardsley fielded the aircrew's questions about 704's repaired systems. Satisfied, the *Viking* crew walked toward 704. They were seeing the *Checkmate* S-3B for the first time this day, but each aviator knew and appreciated the long, intense man-hours of maintenance just finished to give them each phenomenal training opportunity in a Navy jet. The tactical coordinator and sensor operator, the "guys in the back," climbed into 704 to preflight internal avionics equipment.

The pilot and copilot/tactical coordinator started their external preflight, meticulously checking 704's readiness for flight. Airman Boesen followed them around, ready to correct any minor discrepancies. None were found because 704 had already been thoroughly examined by a half-dozen pairs of eyes, but in Naval Aviation there is no room to take anything for granted. Every item is checked and rechecked until everyone on the flight line and in the flight crew is certain 704 is "Up and Ready."

The crew strapped into the plane and started engines. Airman Boesen stood directly in front of 704 where everyone in the jet and on the flight line had him in sight. Boesen, the junior ranking man directly involved in 704's launch, is pivotal when it comes to guiding the crew during post-engine start and final pre-takeoff checks. AME2 Colley and AE2 Kondos checked the control surfaces of the aircraft as Airman Boesen directed them and the flight crew in a carefully choreographed series of procedures. Then Final Checkers! These technicians checked one last time for leaks, access doors latched, and correct control surface deflections.

704 efficiently and effectively completed final control checks and taxied for the first of four successful training missions and 10 hours of flying, including weapons delivery, low-level navigation, a war-at-sea exercise, and prosecution of a U.S. submarine simulating an enemy submarine.

About the time 704 took off, the night check crew, who had been working since 1900 the night before, were relieved by the day check crew who would be handling recovery of *Checkmate* jets and the repairs necessary to ready them for their next sorties. Day check would face another set of discrepancies and challenges. They'd have the pressure of fast turnarounds and making quick decisions. They'd be working in the heat of the day for the next 12 hours, ensuring 704 and three other *Checkmate* jets were up and ready to fly each scheduled mission.

During Operation *Desert Storm*, the intense work by professional VS-22 maintenance personnel achieved a phenomenal 99-percent combat sortie efficiency. Such an outstanding success doesn't happen by chance. Hard work and dedication each and every day in peacetime ensures a combat unit's success when the chips are down.

The night check crew can retire to quarters justifiably proud about their successes of the night. AC 704 will fly her missions and return to these capable hands. Then the cycle begins anew with rested and rejuvenated maintenance crews assaulting the next day's challenge with renewed vigor and a professionalism that's unmatched anywhere on earth.

When people think of Naval Aviation, they usually conjure up images of intrepid "jet jocks" with patch-covered leather jackets and gold-rimmed sunglasses. What they don't see is the many hundreds and thousands of hard-charging wrench turners and the hours of professional maintenance required for each hour of Navy flying.

The men who do the work know. The skipper of VS-22, Commander Mike Brower, credits their efforts every time he proudly echoes the *Checkmate* motto: "All Things Come From Up Jets."

Boys turned men, like Airman Randy Boesen, take their cues from the petty officers and chief petty officers who instill values and skills that make VS-22, and all U.S. Naval Aviation squadrons, the performers and professionals that ousted Saddam Hussein's henchmen from Kuwait. As always, Naval Aviation was the first to arrive in Southwest Asia and Naval Aviation is still there today – the tip of the spear countering threats to liberty around the world. The troops who keep the jets up and flying are the whetstone keeping the tip of the spear sharp. ■

A Gathering of Greyhounds

By LCdr. Rick Burgess

The following is based largely on reports from Lt. Steve Stewart of VRC-50, Lt. D. S. Stanley of VRC-40, and Lt. O'Malley of VRC-30.

The Navy's four carrier-onboard-delivery (COD) squadrons, vital logistics lifelines to the carrier battle groups, are distributed evenly between the four numbered fleets. Fleet Logistics Support Squadron (VR) 24 supports the Sixth Fleet in the Mediterranean; VRC-40 supplies the Second Fleet in the Atlantic; VRC-30 takes care of the Third Fleet along the West Coast; and VRC-50 supports the Seventh Fleet in the Western Pacific and in the Indian Ocean.

All four squadrons operate the Grumman C-2A *Greyhound*, as well as other logistics aircraft.

Far flung across the globe, the COD squadrons rarely meet. However, in January 1991, when the Navy mustered six carrier battle groups in the waters around the Arabian peninsula to form the lightning of Operation *Desert Storm*, the services of all four COD squadrons were required. For the first time in Naval Aviation history, all four were operated together in the same operational theater.

When Iraqi forces invaded Kuwait on August 2, 1990, a normal peacetime operations tempo for the COD squadrons underwent dramatic acceleration during Operation *Desert Shield*. VR-24, servicing *Dwight D. Eisenhower* (CVN-69) in the Mediterranean, established a detachment on August 4 at Tel Aviv, Israel, to support the shift of the carrier to the Red Sea,

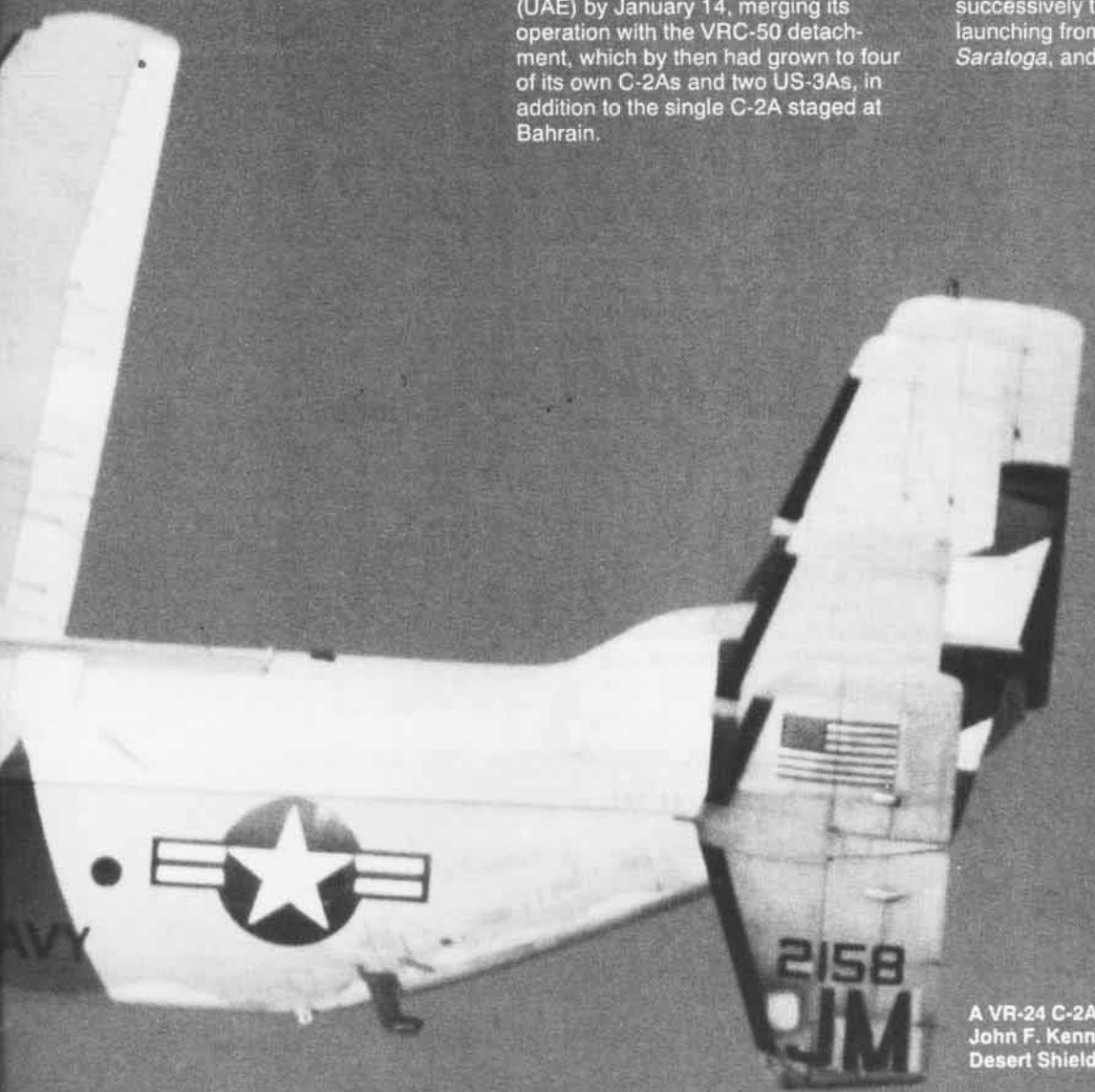
and established a long-term, three-aircraft C-2A detachment at Jeddah, Saudi Arabia, on August 12 to support the build-up of carriers in the Red Sea – with *Saratoga* (CV-60) and *John F. Kennedy* (CV-67) replacing *Ike* in September.

In the Indian Ocean, VRC-50 maintained its normal two-plane detachment of Lockheed US-3A *Viking* long-range COD aircraft at Diego Garcia, and had a C-2A assigned to *Independence* (CV-62) which crossed the Indian Ocean, arriving in theater on August 7. The COD detachment established an airhead (logistics hub) at Bahrain. *Independence* rotated home and was replaced by *Midway (CV-41) in October*.

With Operation *Desert Storm* brewing, January 1992 saw a doubling of business for the COD crews. *Ranger* (CV-61) sortied from San Diego, Calif., on December 8, bringing with it one C-2A and a VRC-30 detachment. The VRC-30 det was in place at Al-Fujairah in the United Arab Emirates (UAE) by January 14, merging its operation with the VRC-50 detachment, which by then had grown to four of its own C-2As and two US-3As, in addition to the single C-2A staged at Bahrain.

On the East Coast, similar events took place as *America* (CV-66) and *Theodore Roosevelt* (CVN-71) departed Norfolk, Va., on December 28, bound for the Red Sea. On December 31, one C-2A and 19 men from VRC-40 deployed aboard *Theodore Roosevelt*, which would bring to 10 the number of *Greyhounds* directly supporting the six carriers massed against Iraq.

On January 15, 1992, VRC-40's "Rawhide 46" made an unprecedented top-priority flight over the Red Sea, successively trapping aboard and launching from *John F. Kennedy*, *Saratoga*, and *Theodore Roosevelt*.



A VR-24 C-2A Greyhound heads for John F. Kennedy during Operation Desert Shield.

LCdr. Dave Parsons

delivering the orders for war.

When the carriers in the Red Sea and Persian Gulf unleashed *Desert Storm* against Iraq on January 17, *Theodore Roosevelt* continued on around the Arabian peninsula, joining the carriers in the Persian Gulf. The VRC-40 detachment went ashore at Bahrain, from which it supported the war effort in the Persian Gulf alongside the detachments from VRCs 30 and 50. When *America* shifted from the Red Sea to the Persian Gulf in mid-February, the seven *Greyhounds* and two *Vikings* had four carriers to service. The VR-24 detachment at Jeddah took care of the carriers in the Red Sea.

CODs are vital to the morale of the Navy's battle groups. To those that have never deployed to sea for long periods, the importance of mail from home to sailors can never be fully appreciated. The CODs and helicopters delivering the mail take on a "larger-than-life" significance to the sailors on the mess decks. As VRC-50's Lt. Steve Stewart put it, "Being popular at the carriers was never so easy."

The war's tempo piled up some impressive statistics for the CODs. VRC-40's one-plane detachment delivered over 250,000 pounds of cargo, 160,000 pounds of mail, and 900 passengers during *Desert Storm*. VRC-30's one-plane detachment moved over 343,000 pounds of cargo and mail and almost 500 passengers in a 2.5-month period. VRC-50, with the largest COD operation in theater, moved over 1,370,000 pounds of mail, 2,002,000 pounds of cargo, and 11,000 passengers during *Desert Shield* and *Desert Storm*. Many VIP support and medical evacuation missions were flown as well.

COD detachments are used to the contingencies of forward-base operations, but supporting a war effort on the Arabian peninsula had its own special challenges. Lt. Stewart described it:

"Like everyone in the combat zone, we had some excitement and hardships. Constant SCUD [Iraqi missile] alerts tended to hamper our flight schedule and a few aircrews got to see high-tech Patriots [U.S. missiles] doing their thing from front-row seats. The majority of our det in Al-Fujairah didn't have manmade hazards to worry about as much as natural ones. The ritual of checking your bed for scorpions took on a whole new importance after one of our pilots became an unwilling bedmate to one. The perimeter roads around the UAE training base that we were living at had gangs of desert donkeys that were none too pleased to have their afternoon nap time interrupted, and showed their displeasure by chasing us all over the camp. The gate guards at the UAE camp with their loaded rifles also provided some increased anxiety. We did cope and can even look back with some degree of humor."

To be fair, the CODs weren't the only naval air logistics forces serving the region during *Desert Shield* and *Desert Storm*. VRC-50's C-130F *Hercules* transports were busy hauling cargo from NAS Cubi Point in the Philippines. Rota, Spain-based VR-22, augmented by a crew and TC-130Q aircraft from Fleet Air Reconnaissance Squadron 4, used its C-130F and KC-130F aircraft to haul cargo from the Mediterranean area. Four reserve VR squadrons of C-9Bs were mobilized and deployed to European bases to support the war effort. And not least were the accomplishments of the multitude of helicopters of Helicopter Combat Support Squadrons 1, 2, 4, 5, 6, 8, and 11. A few Beech UC-12 station support aircraft were also

Two VRC-50 C-2As are readied for flights to carriers in the Persian Gulf.

Raison d'etre – Mail bound for ships in the Persian Gulf is loaded aboard a VRC-50 C-2A.

VRC-40's "Rawhide 46" delivered the orders for war to the carriers in the Red Sea

Three C-2As and a US-3A are seen at Al-Fujairah.

VRC-30 det pilots (l-r) Lts. Mark Maxwell, Jeff Wold, Doug Stevens, and Mark Wood.

deployed to the region to augment the one assigned to Commander, Middle East Force.

Although the war came to an end in 40 days, the work of the CODs did not. A VRC-40 crew flew Army and Navy officials into newly liberated Kuwait City, followed quickly by a load of soft drinks for the liberation troops. With the mail still coming and with passengers and cargo to take out of the area, the work of a COD was never done.

As the number of carriers in the region drew down, the COD force was reduced in size as well. The VRC-40 detachment reboarded *Theodore Roosevelt* on April 3 bound for the Red Sea, operating from Hurghada, Egypt, for three weeks before heading home to Norfolk. VR-24 found itself busy in the Mediterranean supporting carriers flying missions over Iraq as part of the Kurdish relief effort, Operation *Provide Comfort*. The VRC-30 detachment took the opportunity to return to San Diego on April 8 via Saudi Arabia, Crete, Sicily, France, England, Iceland, Greenland, Labrador, and points in the U.S. – successfully taking the first C-2A in history on a circumnavigation of the globe.

VRC-50 withdrew the two US-3As and two C-2As from Al-Fujairah to Cubi Point to service *Ranger* and *Midway* as they returned home. The *Foo Dogs* continue to maintain two *Greyhounds* and 50 personnel at Al-Fujairah to support the carrier on station in the region enforcing the UN sanctions against Iraq. Crews rotated every two months are logging 70-80 hours per month, hitting the boat as, to most sailors, the most important flights of the day. ■

The VRC-50 det at Al-Fujairah became known as "Greenbush Airlines."

Seen from another Greyhound, a C-2A approaches its destination with its precious cargo.

HNS Hoverfly

By Hal Andrews

XR-4(C)

Among the many major innovations that first made their appearance in Naval Aviation operations during WW II, the helicopter proved to be the longest in reaching the full Navy acceptance it enjoys today. Airborne radar, starting from the first use of British equipment in 1941, reached widespread fleet use in 1943. Jet engines – and aircraft – only reached the flight test stage during the war years, but carrier jet fighters reached general squadron use by 1949. Helicopters, from their initial Army early wartime development, reached limited operational use with the Coast Guard, operating as part of the Navy by 1945. However, except for continued use in air-sea rescue by the Coast Guard and Navy, replacement of ship-based floatplanes, and more general use by the Marines, helicopters only reached wide service use after the Korean War in the mid-fifties. The advent of turboshaft engines proved to be a major turning point in their reliability and maintainability characteristics and the key to their wide use today.

Just over 50 years ago, in January 1942, the prototype of the first production helicopter in this country made its initial flight. Starting in early 1939, Vought-Sikorsky's small team led by Igor Sikorsky himself had evolved the first practical helicopter in this country, the VS-300. Through many trials and fixes, with most of the early piloting done by Igor Sikorsky, the final results in late 1940 led to the Army's decision to place a contract with Vought-Sikorsky for development of a larger two-place prototype, the XR-4. As the VS-300 configuration evolved, so did that of the XR-4. Soon after Pearl Harbor, it emerged for ground testing. A side-by-side cabin seated two pilots at the front of an open fuselage. Just aft, a single lifting rotor was mounted above the fuselage with the engine below it driving the main rotor and via an extended drive shaft and gearing a single-tail rotor for yaw control at the end of a long fuselage. This configuration would become the typical one for both major U.S. helicopter manufacturers, Sikorsky and Bell. The cockpit flight controls, cyclic stick, collective lever, and "rudder" pedals became standard for all helicopters. The XR-4 was powered by a 165-hp Warner R-500 seven-cylinder radial air-cooled engine; fan cooling within a cooling shroud was provided. As the many characteristics of this new concept were worked through, the basic concept proved sound and by the end of the year, its demonstrated capabilities and military potential resulted in initiating an Army Air Force contract for 30 service test YR-4A and B models. These would be basically the same as the XR-4; by then, its steel tube frame fuselage was fully fabric covered. Major changes were an increase in the diameter of its fabric-covered wood structure rotor from 36 feet to 38 feet and a 180-hp Warner R-550 engine.

In May 1943, the XR-4, equipped with these same changes, underwent at-sea trials using a platform on a tanker cruising in Long Island Sound. The success of these trials heightened Coast Guard interest in helicopters for

antisubmarine warfare convoy duty as well as typical Coast Guard rescue functions, and three of the 27 YR-4Bs were assigned to the Navy for Coast Guard use at their Floyd Bennett Field, Brooklyn, N.Y., Coast Guard Air Station (CGAS) – part of NAS New York. There, the Coast Guard would conduct all Navy/Coast Guard helicopter pilot training, initially with the three HNS-1s.

By the time the YR-4s were being delivered, the Army had ordered 100 production R-4Bs with uprated 200-hp R-550 engines. Twenty of these also became Navy HNS-1s for both training and evaluation in other operational roles. The first three were delivered in late 1943, the other 20 following from March 1944 through the rest of the year. The first went to NAS Patuxent River, Md., for trials there, and the second to the National Advisory Committee for Aeronautics (NACA, predecessor of today's NASA) at Langley Field, Va., for rotorcraft re-

HNS-1

search tests. The rest followed the first three to CGAS Brooklyn operations. Training of Coast Guard, Navy, and British helicopter pilots continued there, with actual rescues taking place during the rest of the wartime period. In one case, an HSN was disassembled and loaded aboard a cargo aircraft for transport to Labrador to rescue the crews of three aircraft following the forced landing of the first one and subsequent misadventures. Fifty-two of the various R-4 models were transferred to the British under Lend-Lease to initiate Royal Navy and Royal Air Force helicopter operations.

In 1945, individual HNSs were transferred to other CGASs around the country for operations beginning with Miami, Fla.; Elizabeth City, N.C.; and Salem, Mass., in January. With the training load reduced after V-J Day, others went to these bases, as well as to Traverse City, Mich., and St. Petersburg, Fla., late in the year. Operational applications and equipment development, including the rescue hoist, were continued by the Coast Guard.

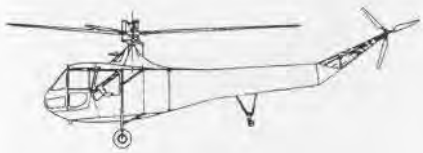
In December, two additional R-4Bs became Navy HNS-1s when they were returned from British Lend-Lease. That same month, a presidential order returned the Coast Guard to the Treasury Department on January 1, 1946, and arrangements to split the Navy/Coast Guard joint helicopter operations followed. In July, 10 of the remaining HNS-1s were transferred to the Coast Guard, including one on the *Northwind* for the Antarctic High Jump operations. Navy training was transferred to newly commissioned VX-3, assigned the mission of training Navy helo pilots and developing operational missions. The HNS at NACA Langley remained there and a replacement went to Naval Air Test Center, Patuxent River, for one that had been stricken. The last of the original three went to the Naval Torpedo Station at Newport, R.I. Except for these, the rest of the HNS inventory went to VX-3, initially "in place" at NAS New York and subsequently transferred to NAS Lakehurst, N.J.

By this time, more capable helos were coming into service, but the HNSs continued to carry the major training load into 1947, being gradually phased out of Navy operations through the year. The Coast Guard continued to operate HNSs until they were replaced in the late forties by more capable operational helicopters and postwar Bell HTL trainers. ■

HNS-1

HNS-1 (R-4B)

Rotor diameter	**38'**
Length (over rotors)	**48'2"**
Height	**12'5"**
Engine: Warner R-550-3	**200 hp**
Maximum speed	**82 mph**
Service ceiling	**8,200'**
Range (full fuel)	**125 mi.**
Crew	**2**



Five Aviators Enshrined

On May 8, 1992, five giants of the aviation world will be enshrined in the Hall of Honor in the National Museum of Naval Aviation, Pensacola, Fla. Established in 1981, the hall is dedicated to those who have made a major contribution in the field of aviation. This year, the five inductees who will take their place among 42 other greats are:

Lawrence Burst Sperry (deeeased) – Born in December 1892, Lawrence Sperry was a pioneer Naval Aviator whose ingenuity and prowess had a major and lasting impact on the

entire world of aviation. Most Naval Aviators since the earliest years of aviation have flown using instruments and devices invented by Sperry. His list of accomplishments is impressive. He invented and demonstrated the automatic pilot, the turn indicator, the bank indicator, the pack parachute, retractable landing gear, an optical drift sight, an improved magnetic compass, and an aerial torpedo (the world's first cruise missile). He was also the first to install landing lights on an aircraft, fly tethered to another aircraft, and transfer fuel in flight. He also pioneered some of the earliest launches and recoveries from USS *Langley*.

Sperry began flying at age 18 when he designed and built his own biplane glider. In 1913, he became the youngest licensed pilot in America when he received Federal Aeronautics Pilot License Number 11 from the Aero Club of America.

In 1916, the U.S. Army enrolled Sperry in its first Aviation Reserve Corps. He was the only Army pilot to volunteer for night flying tests to determine the distance a searchlight could successfully illuminate a plane. In 1917, with war imminent, Sperry became the first civilian to be commissioned an officer by the U.S. Navy Flying Corps and was assigned to train student pilots.

When war broke out, Sperry went to Guantanamo Bay where he planned to develop an aerial torpedo. Shortly after his arrival, Sperry's naval career was cut short by acute appendicitis. He returned to Long Island, N.Y., and on March 6, 1918, pronounced his torpedo ready: under complete automatic control, it registered a bull's-eye on a target 1,000 yards from the launching track.

Lawrence Sperry died on December 13, 1923, when the plane he was flying, one of his own famous Verville-Sperry *Messengers*, crashed in the English Channel on a flight from London to Amsterdam.

Lieutenant Commander Edward Henry O'Hare, USN (deceased) – Edward O'Hare was born in St. Louis, Mo., on March 13, 1914. He graduated from the U.S. Naval Academy on June 3, 1937.

He was assigned to USS *Mexico* until 1939 when he reported to NAS Pensacola, Fla., for flight training. He qualified as a Naval Aviator in 1940 and was assigned to duty in Fighting Squadron (VF) 3, attached to USS *Saratoga*. He assumed command of VF-3 (later changed to VF-6) and was then ordered to command an air group based on USS *Enterprise*.

"Butch" O'Hare became the first Navy ace in the Pacific and was awarded the Medal of Honor for singlehandedly splashing five Japanese bombers and damaging a sixth in defense of USS *Lexington*. As commanding officer of VF-6 and Commander, Air Group 6, he won the Navy Cross and two Distinguished Flying Crosses for gallantry. He was reported missing when his plane was lost during enemy action in the vicinity of Tarawa Atoll. He was officially declared dead on November 27, 1944.

O'Hare Field on Abemama, Gilbert Islands; the now-decommissioned destroyer *O'Hare* (DD-889); and Chicago's O'Hare International Airport were named in his honor.

Edward O'Hare was a magnificent inspiration to all of Naval Aviation during the dark, early days of WW II.

Rear Admiral William Alton Schoech, USN (deceased) – A proven leader in war and peace, William Schoech's leadership and insight

contributed greatly to the advancement of Naval Aviation.

Born in Blakesburg, Iowa, on October 17, 1904, Schoech graduated from the U.S. Naval Academy with the class of 1928. After serving as a junior officer onboard USS *West Virginia*, he reported to NAS Pensacola for flight training and was designated a Naval Aviator in 1930.

After serving tours as a pilot of Observation Squadron 3 in USS *Tennessee* and Engineer Officer of Patrol Squadron 10 in Pearl Harbor, Schoech attended the Naval Postgraduate School and continued his education at the California Institute of Technology, where he earned his

in Hall of Honor

Master's Degree of Science in Aeronautical Engineering in 1938.

In 1942, Schoech became the Chief of Staff to Commander, Seventh Fleet, where he devised and implemented many of the plans that led to the U.S. naval success in the Pacific. He was awarded the Legion of Merit for exceptional meritorious conduct.

As a flag officer, "Bill" Schoech held a variety of operational and administrative positions which exerted major influence on modern Naval Aviation. His assignments included: Director of Training on the staff of the Chief of Naval Air Operational Training Command; commanded the Asiatic Wing, Naval Air Transport Service; Director of the Plans Coordinating Division, Bureau of Aeronautics; commanded USS *Sicily*; and in 1954 he reported as the prospective commanding officer of USS *Ticonderoga*, recommissioning that vessel as skipper. He also served as Deputy and Assistant Chief of the Bureau of Aeronautics; Commander, Carrier Division 3; the first Deputy and Assistant Chief of the newly created Bureau of Naval Weapons; and in 1961 reported for duty as Commander, Seventh Fleet. He completed his career as Chief of Naval Material, and retired in March 1965.

Admiral Austin Kelvin Doyle, USN (deceased) – Known as a bold, innovative, and inspirational leader in war and peace, Austin Doyle graduated from the Naval Academy in 1919 and served in the transport *Orizaba*, the battleship *Utah*, and the destroyer *Mc-*

Farland before being designated a Naval Aviator in 1922. He saw duty with scouting and fighting squadrons onboard *Wright*, *Langley*, *Lexington*, and *Idaho*. Between sea tours, he served as an instructor at NAS Pensacola and in the Department of Engineering and Aeronautics, Naval Academy. He was also the head coach of the Naval Academy baseball team in 1933.

From 1935 to 1940, Doyle served as Tactical Officer on the Staff of Commander, Aircraft Battle Force; in the Plans Division of the Bureau of Aeronautics; and in command of VF-3. At the outbreak of WW II, he was attached to the Bureau of Aeronautics (Personnel and Training), and in 1942 he commissioned and assumed command of USS *Nassau*.

From September 1943 to July 1944, Doyle served on the Staff of Commander in Chief, U.S. Fleet, in Washington, and in August 1944 he assumed command of USS *Hornet*. It was onboard *Nassau* and *Hornet* where Doyle made his mark as one of the most aggressive and bold carrier skippers. His WW II decorations included two Navy Crosses, two Legion of Merit medals, and the Distinguished Service Medal.

Following the war, Doyle served in a wide variety of high-level commands, culminating in his promotion to vice admiral and command of the Naval Air Training Command, where he instituted one of history's most significant air training changes – introduction of jet aircraft.

In 1951, Doyle commanded Carrier Division 4, his flag in USS *Midway*, and during the next five years served as Commander, Caribbean Sea Frontier; Commandant, Tenth Naval District; and Chief of Naval Air Training. He completed his career as Commander, U.S. Taiwan Defense Command and retired on August 1, 1958. He was advanced to admiral on the basis of combat awards.

Vice Admiral Gerald Francis Bogan, USN (deceased) – Born in Mackinac Island, Mich., in 1894, Gerald Bogan graduated from the Naval Academy in 1912. After serving onboard USS *Vermont* and as an instructor of enlisted men at Naval Training Station, Great Lakes, Bogan was assigned to USS *Birmingham* as Watch and Gunnery Officer during WW I.

After the Armistice, he transferred to

USS *Stribling* and a year later joined USS *Hopewell*, where he served as Engineer Officer and later Executive Officer. Tours as X.O. of USS *Broome* and Commanding Officer of the U.S. Naval Radio Station, Russian Island, Vladivostok, followed.

After brief duty at Naval Training Station, Naval Operating Base, Hampton Roads, Va., he reported to NAS Pensacola for flight training and was designated a Naval Aviator in 1925. He then joined VF-1, based on USS *Langley*, where he served as X.O. until he took command of the squadron in 1928.

Other tours as Wing Commander of Landplanes at NAS Pensacola; C.O., VF-3; Flight Test Officer at NAS Anacostia, D.C.; Navigator and X.O. onboard USS *Yorktown*; and C.O., NAS Miami, Fla., prepared Bogan for WW II.

During the war, Bogan compiled an incredible record of nearly continuous combat command. In August 1942, he assumed command of USS *Saratoga* until he became Commander, Naval Air, 10th Fleet in June 1943. In October 1943, he was designated Commander, Fleet Air, Norfolk, Va., and in January 1944, became Commander, Carrier Division 25. He was later transferred to command of Carrier Division 11 and then to command Carrier Division 4. Following the Saipan operation, he became Commander, Task Group 38.2 and served as a Task Group Commander in Task Force 58/38 until the end of WW II.

Transferred to the retired list in February 1950, Gerald Bogan was highly regarded as a sailor's sailor, and a smart, tenacious warrior who was a premier figure in carrier combat tactics. ■

The Battle of

By Dr. Edward M. Furgol

The Battle of Coral Sea has a claim for an eminent place in the history of Naval Aviation. The closing stages of the action witnessed the first combat between two fleets solely by carrier plane. Furthermore, the battle was the first time, following the outbreak of war on December 7, 1941, that the Japanese advance in the Pacific was halted. Finally, the clash provided the U.S. Navy, in particular its Naval Aviation, with its initial victory against the Imperial Japanese Navy.

The potential for action arose from Japanese plans in Spring 1942 to advance south and southeastward from the Bismarcks and Solomons in the South Pacific. The immediate objectives of the offensive were the capture of Tulagi in the Solomons and Port Moresby, New Guinea, with a second phase plan for the capture of the Nauru and Ocean islands. Tulagi would be developed as a seaplane base to cover the flank of the advance on Port Moresby and to support later seizures of islands astride the American-Australian supply lines, such as New Caledonia, Fiji, and Samoa. Port Moresby was the most important prize; its possession would secure Japanese bases on New Guinea and at Rabaul, New Britain; would provide the Japanese with the ability to neutralize north Australian airfields; and would anchor the western flank of the next offensive in the South Pacific. Nauru and Ocean, which contained rich phosphorous deposits essential for Japanese agriculture, were important economically.

Following standard Japanese practice, the fleet units assigned to the operation were divided into several groups. Two units – the Port Moresby and Tulagi Invasion Groups – carried the ground forces. Support and Covering Forces protected the Port Moresby Group, which consisted of a light carrier, cruisers, and destroyers. The Striking Force, the most powerful element, consisted of just two aircraft carriers. The Japanese, believing the Allies would offer little resistance and busy reequipping the remainder of Admiral Nagumo's carriers for the "decisive" attack against Midway, thought that such a small carrier group was sufficient.

Given the string of Japanese victories since Pearl Harbor, there was

Lexington sinks after being abandoned on May 8, 1942.

NH 51382

Coral Sea

no reason to suspect the offensive would fail. However, far behind the battlefront, the Americans had already scored a devastating victory that provided the possibility of thwarting Japanese intentions. Several months after the war's start, Navy cryptologists, primarily at Station Hypo, Pearl Harbor, broke the Japanese naval code. By analyzing traffic patterns and decoding 10 to 15 percent of the messages received, Station Hypo gave Commander in Chief of the Pacific Fleet Admiral Chester W. Nimitz an accurate picture of Japanese designs. By mid-April he knew of the enemy's plans to attack Port Moresby. Nimitz had learned that two enemy carriers were on the way to Rabaul, and he had sound information on Operation MO (Port Moresby-Tulagi) forces. Consequently, he dispatched carrier *Lexington* (CV-2) to join carrier *Yorktown* (CV-5) in the Coral Sea.

The action was divided into two distinct phases – the actions on May 1-7, and the carrier battle on the 8th. Ad-

miral Frank Jack Fletcher's task force of *Lexington*, *Yorktown*, and two cruiser divisions rendezvoused in the southeast Coral Sea. Fletcher divided his forces and steamed north with a task group centered on *Yorktown*. On the 4th, *Yorktown*'s planes attacked the Japanese convoy off Tulagi. The carrier launched three strikes with TBD *Devastators*, SBD *Dauntlesses*, and F4F *Wildcats*, which sank few enemy ships. Nimitz later commented, "The Tulagi operation was certainly disappointing in terms of ammunition expended to results obtained." The admiral stated that it emphasized "the necessity for target practice at every opportunity." As would be common throughout the war, the pilots' eagerness often had the effect of inflating their meager success into a magnificent victory. After recovering his planes, Fletcher spent the remainder of the 4th and all the next day steaming to rejoin *Lexington*.

The Japanese, after successfully taking Tulagi, failed to coordinate their movements. The Port Moresby groups, which steamed on May 4, milled about the Louisiades – off the eastern tip of New Guinea – instead of pressing south. Admiral Takagi's Striking Force moved with greater purpose. Assuming that Fletcher would move west to intercept the Port Moresby forces, Takagi manuevered west and south to cut him off from American bases to the east.

The 7th was a day of confusion, with the Americans gaining the advantage. Once again Fletcher divided his force, sending some of his cruisers under Rear Admiral J. G. Crace to intercept the Port Moresby Invasion Group as it departed from the Jomard Passage. Within the same hour, both Fletcher and Takagi received faulty aerial reconnaissance reports. The Japanese acted first; enemy pilots launched and sped out to strike a carrier and a cruiser only to discover the fleet oiler *Neosho* (AO-23)and destroyer *Sims* (DD-409). The latter sank in minutes, but *Neosho*, although badly battered, survived for four days.

While the Japanese expended their efforts on these targets, American planes hit the Port Moresby Covering Group. Initially, they had followed the wrong course based on an error in the morning aerial reconnaissance report. Discovering light carrier *Shoho*, the SBDs and TBDs from *Lexington* and *Yorktown* sent her to the bottom within half an hour. The Covering Group now withdrew. Earlier, the Invasion Group had turned north after detecting Crace's cruisers. In late afternoon, the carriers *Shokaku* and *Zuikaku*, both Pearl Harbor raid veterans, launched a strike force of 27 planes. Poor information and bad weather caused them to miss their targets. Attempting to return to their carriers, several Japanese planes tried to land on the American carriers. *Wildcats* downed eight of these, with one later ditching as a result of damage; 18 planes landed on the Japanese carriers. The Japanese forces involved in the Port Moresby operation had lost the confidence to advance until they had assurance that Fletcher's task force was destroyed.

U.S. Navy TBD Devastators torpedo the Japanese light carrier Shoho on May 7, 1942. 80-G-17026

Lieutenant (jg) J. A. Leppla (pilot), right, and Radio Mate 3rd Class J. A. Liska (gunner) of VS-2 flew a Douglas SBD-3 Dauntless from Lexington during the battle. They shot down four Japanese planes during the action. 80-G-66260

The balance of forces now appeared deceptively even. Both sides had two carriers, with the Americans having a slight advantage in numbers of flyable aircraft. Despite superficial appearances, the Americans were in trouble. The Japanese had numerous advantages: U.S. planes were much slower than theirs; the Japanese possessed a better mix of dive-bombers, torpedo planes, and fighters in their strike groups; Japanese torpedo squadrons had a longer range and faster weapon; the enemy had more combat experience as a unit than Fletcher's men, whose high morale could not bridge the gulf; and weather conditions favored the enemy when the American ships headed south into clear skies, while the Japanese remained under the cover of clouds and showers during their advance.

The decisive actions on the 8th had all occurred by early afternoon. At dawn, both forces launched scout planes. Discovery of the opposing carriers and launching of the strike groups took place within minutes of each other. Japanese planes received better target direction. Even worse, direction of the U.S. combat air patrol failed miserably in its duty of protecting the carriers. The Japanese attacked, quickly scoring hits on both *Lexington* and *Yorktown*, which started fires. The former suffered more, but within an hour, damage control efforts apparently had succeeded.

Meanwhile, the American attack groups had problems. Due to bad weather and faulty intelligence, only two-thirds reached the targets. For about an hour, they attacked *Shokaku*, while *Zuikaku* remained sheltered under squalls. Perversely, that circumstance may have aided the pilots, who would have dissipated their attacks on two targets. At Coral Sea, they only had a six-percent hit rate: the 28 *Dauntless* dive-bombers scored three hits and the 22 *Devastator* torpedo planes failed to make any. After 1240, the first battle between naval for-

ces that never made visual contact ended.

Following the strikes, both forces began to separate. *Lexington*, although sustaining five bomb and torpedo hits, continued in formation and received her incoming planes. Fires on the ship forced doctors to work in an atmosphere of poisonous gases. Captain Frederick C. Sherman wrote afterwards, "I must comment on the heroism of the men. It was an inspiration. The first thought of all was for the wounded." At 1247, a major internal explosion, caused by gas vapors released by a torpedo hit ignited by a generator spark, rocked the ship. Still planes continued to land until 1414. At 1445, a second major explosion wreaked havoc on the fire and engine room ventilation system. By 1515, the fire was beyond control and the danger of bombs exploding from overheating was possible. At 1630, with the steam safety valves lifted, *Lexington* stopped dead in the water. Admiral Aubrey W. Fitch ordered Sherman to abandon ship at 1707. The captain recalled that in the evacuation "there was not the slightest panic and disorder." Two hours later, a destroyer fired four torpedoes into *Lexington*, sending her to the bottom. Witnesses commented that her former crew burst into tears as she sank. An officer onboard *Yorktown* said, "There she goes. She didn't turn over. She is going down with her head up. Dear old *Lex*. A lady to the last."

Coral Sea resulted in a Japanese tactical victory, but the U.S. Navy was the real winner. The Japanese sank a fleet carrier and a destroyer, and damaged another fleet carrier, losing only a light carrier and suffering damage to a fleet carrier. American forces withdrew from the area. With air groups too battered to support further advance, the Japanese were brought to a standstill. Port Moresby remained in Allied control. The operation to capture the Nauru and Ocean islands, deterred by the May 15 spotting of RAdm. Halsey's two-carrier TF-16, was not resumed until three months later, too late to offer much boost to enemy spirits. *Shokaku* was so severely damaged that she could not join the Midway carrier force. *Zuikaku*, owing to losses of pilots and planes, required squadron reorganization that removed her, too, from that campaign. The damage to *Yorktown* proved to be quickly patched in time for Midway. American pilots, fighter directors, combat air patrols, and aerial reconnaissance and damage control crews realized that they needed more schooling in the art of carrier warfare.

The Battle of Coral Sea stabilized the southwest Pacific front and reduced Japanese carriers available for Midway by a third. It proved a harbinger of things to come in both the carrier battles of the Pacific and the resurgence of the Navy. ■

Dr. Furgol is curator of The Navy Museum, part of the Naval Historical Center.

Yorktown undergoes rapid patching in the dry dock at Pearl Harbor after the battle. 80-G-13065

SBD scout planes from Yorktown sank the Japanese destroyer Kikuzuki at Tulagi in one of the few successes on May 4, 1942. 80-G-K-6108

"Do the Best We Can

By Robert J. Cressman

Japanese planners had cast interested glances at Midway – a place they regarded as "the sentinel for Hawaii" – since before hostilities began with the devastating surprise attack on Pearl Harbor. On December 7, 1941, two destroyers had shelled the atoll to cover Vice Admiral Chuichi Nagumo's retirement westward. The idea of taking Midway, however, generated little urgency until April 18, 1942, when the Halsey-Doolittle Raid, while causing scant material damage, prompted a fateful decision on the part of the enemy's high command. To prevent another such affront to the sacred homeland, and draw out the elusive Pacific Fleet carriers that had operated with virtual impunity against the Japanese "Greater East Asia Co-Prosperity Sphere," Admiral Isoroku Yamamoto, Commander in Chief of the Combined Fleet, no longer encountered any opposition to his plan to overpower the "Sentinel." Animated by the confidence that had seen them through successive victories in the Pacific, not even the setback they had been dealt at Coral Sea – where they lost the services of two carriers – could dampen Japanese spirits.

The Japanese, while confident in their own ability to carry out their plans, knew precious little about the American dispositions. Admiral Chester W. Nimitz, Commander in Chief, Pacific Fleet, however, thanks to the ceaseless monitoring of the enemy's naval communications, knew the intent and scope of the Japanese plans. To deceive the Japanese as to where his carrier strength lay, Nimitz had dispatched TF-16 – under Vice Admiral William F. Halsey, Jr., with *Enterprise* (CV-6) and *Hornet* (CV-8) – to the South Pacific in late April. Their very presence in that area led the Japanese into believing that every American carrier then in the Pacific was in the region of the Coral Sea. Overoptimistic Japanese reports of the damage they had inflicted on TF-17 at Coral Sea – that not only "*Saratoga*" (actually *Lexington*) was sunk but *Yorktown* as well (she had only been damaged) – prompted the enemy to think that no American carriers would oppose them at Midway.

Nimitz's visit to Midway on May 2 and 3, 1942, to see the atoll's defenses for himself left him satisfied that,

With What We Have"

with appropriate reinforcement, the atoll would stand a good chance of turning back a Japanese amphibious landing. Nimitz did his best to see that Midway got what it needed to defend itself. Men and materiel, transported by sea and air, strengthened the garrison.

On May 27, 1942 (May 26 at Pearl Harbor), the Japanese carrier striking force sailed from Japanese home waters. A second force, comprising transports and their escorts, carried assault and occupation troops. Enemy submarines fanned out across the sea lanes between Hawaii and Midway to intercept any reinforcements coming by sea, but, deployed too late, they missed the passage of the two task forces that Nimitz deployed to defend Midway.

Principally, the battle in the offing boiled down to one of carrier strength. To oppose the four Japanese carriers, Adm. Nimitz sent to sea the only three he had: *Enterprise* and *Hornet*, in TF-16 – Halsey having "expedited" their return – and TF-17 with *Yorktown*. *Yorktown* returned to the fray with patched bomb damage and a scratch air group: VF-3 (actually a mix of VF-3 and VF-42 pilots), VB-3 and VT-3, and VB-5 (which became, temporarily, V"S"-5). Only V"S"-5 and some of the pilots in VF-3 (which included the VF-42 veterans of Coral Sea) had seen action. *Enterprise* carried a good percentage of veterans in her VF-6, VB-6, and VT-6, while VS-6 had had a good percentage of new pilots due to the attrition from the early Pacific raids. *Hornet*'s VB-8, VF-8, VS-8, and VT-8 had yet to see combat.

Command of the carrier task forces – since VAdm. Halsey was incapacitated by a painful case of shingles – devolved into the hands of Rear Admiral Frank Jack Fletcher, whom Nimitz called an "excellent, seagoing, fighting naval officer" and who had done a "fine job" and exercised "superior judgement" at the helm of TF-17 at Coral Sea. On Halsey's recommendation, Nimitz replaced Halsey at the helm of TF-16 with Rear Admiral Raymond A. Spruance, a gifted and competent flag officer who had commanded TF-16's cruisers from the outset of hostilities. Neither Fletcher nor Spruance was an aviator, but both wisely sought the advice and counsel of aviators on their respective staffs.

Vowing "to greet our expected

While a plane guard destroyer (left) and heavy cruiser Pensacola (CA-24) steam in the background, sailors onboard Enterprise (CV-6) spot Douglas TBD-1 Devastator torpedo bombers – of LCdr. Eugene Lindsey's VT-6 – for takeoff on the morning of June 4, 1942.

80-G-41686

visitors with the kind of reception they deserve," Nimitz gave Midway "all the strengthening it could take." *Kitty Hawk* (APV-1) brought out Grumman F4F-3s and Douglas SBD-2s, and pilots to fly them, to reinforce the Brewster F2A-3 *Buffaloes* of VMF-221 and SB2U-3 *Vindicators* of VMSB-241, respectively. By June 4, 1942, Navy PBYs, Army B-17s and B-26s, and Navy Grumman TBF-1 *Avengers* from VT-8 crammed the atoll. The PBYs and B-17s drew search duties; the B-26s, TBFs, SB2Us, and SBDs the attack tasks; while the F2As and F4Fs drew the duty of aerial defense. Nimitz promised Admiral Ernest J. King that the Pacific Fleet would "do the best we can with what we have."

The sparring between American and Japanese search planes began in the waning days of May. With each side seeking the others whereabouts, encounters between search planes occurred, PBYs dueling *Betty* bombers from Wake Island. Although the PBYs usually emerged bloodied, the lumbering *Catalinas*, although vulnerable, soon proved their worth. On June 3, a prowling PBY spotted two Japanese minecraft on their way to join the occupation force. B-17s launched from Midway ultimately located the inbound Japanese transport force, but their high-altitude bombing, while surprising the enemy, failed to score any hits. That night, a four-PBY night torpedo attack (three from VP-24 and one from VP-51), the first attempted during the war, holed the oiler *Akebono Maru*. One *Catalina* strafed the transport *Kiyozumi Maru*.

Nagumo had, at that point, 227 operational planes: 73 Mitsubishi A6M2 Type 00 carrier fighters (*Zeros*), 72 Aichi D3A1 Type 99 carrier bombers (*Vals*), 81 Nakajima B5N2 Type 97 carrier attack planes (*Kates*), and one Yokosuka D4Y1 Type 13 special reconnaissance plane (*Judy*). Nagumo planned to launch a strike force of 108 planes – 36 *Zeros*, 36 *Vals*, and 36 *Kates* – approximately half of those he had available to him. Nagumo's intelligence sources pinpointed only 30 fighters available to oppose them.

At 0428, 240 miles northwest of Midway, Nagumo's carriers commenced launch. By 0440, the entire striking force had gotten aloft; it took departure at 0445. Mechanical difficulties compelled only one plane, a *Kate* from *Hiryu*, to return. Nagumo retained a second strike group of 36 *Vals* (18 each onboard *Hiryu* and *Soryu*); 36 *Kates* (18 each in *Kaga* and *Akagi*); and 25 *Zeros* (seven in *Kaga* and six on each of the others). This was in case his search planes – put aloft from the heavy cruisers *Tone* and *Chikuma* and the battleship *Haruna* after his strike force had set out on its mission so that presence of Japanese scouts would not tip Nagumo's hand – spotted an American task force. Delays onboard the cruisers, however, prevented the timely deployment of the admiral's airborne "eyes." Nagumo detached a cruiser division to bombard Midway.

Ens. George H. Goldsmith, USNR, brings his SBD-3 (coded B 15), damaged in the attack on Kaga, onboard Yorktown on June 4. The SBDs from Yorktown and Enterprise inflicted the damage that resulted in the loss of all four Japanese flattops at Midway.

NH 100740

A screening destroyer off her starboard bow, Yorktown (CV-5) is under attack by Type 97 carrier attack planes (Kates) from Hiryu on the afternoon of June 4, 1942. This picture, taken by photographer William Smistik onboard heavy cruiser Pensacola (CA-24), shows bursts of antiaircraft fire in the foreground, as well as two Kates.

80-G-32241

Hornet (CV-8), watched by sailors on Ford Island, returns to Pearl Harbor, May 26, 1942, after operating in the South Pacific with TF-16. She would sail for the waters northeast of Midway a few days later. 80-G-66132

As heavy cruiser Northampton (CA-26) steams off her starboard bow, Enterprise (CV-6) launches a Grumman F4F-4 Wildcat of VF-6 on the morning of June 4, 1942. No TBDs are spotted on her flight deck, aft, since VB-6's SBDs, carrying 1,000-pound bombs, require a long deck run in the prevailing light wind conditions. 80-G-32224

As the Japanese bore down upon it, NAS Midway had stirred in the predawn hours. Marine F2As had covered the launch of the PBYs and B-17s and then landed, as the island stood down, planes with radios energized and engines warm. Soon thereafter, however, reports came in from the wide-ranging PBYs. A VP-23 PBY spotted something below through the low cumulus clouds and scattered showers and reported the "main body" of the Japanese fleet, thus putting Midway on the alert. All aircrews manned their planes and stood by with their engines turning over. Another VP-23 PBY, 100 miles northwest by north of the atoll, subsequently spotted over 50 planes heading for the atoll and warned, in plain language, at 0544: "Many planes heading Midway." Those reports ended the suspenseful wait.

While the Marine antiaircraft batteries received orders to fire upon all planes not identified as friendly, at 0600, the reports of the location of the Japanese carriers, provided by the PBYs and reports of incoming aircraft, prompted Midway to clear the field of all operable aircraft. As the Japanese droned toward them, VMF-221's 20 F2As and four F4Fs scrambled to intercept. Quickly following the fighters came the six TBFs, the four Army torpedo-armed B-26s, and VMSB-241 – 16 Douglas SBDs and 12 Vought SB2Us – each carrying a 500-pound bomb. The two groups of Marine scout bombers, minus one whose cowling blew loose, met at Point "Afirm" 20 miles from the island and set course to attack an enemy carrier 180 miles northwest of Midway.

The Japanese, meanwhile, spotted the atoll about 0615. Three divisions of VMF-221 had been vectored out to intercept, while two others had been told to orbit 10 miles out, in case another group of enemy planes showed up on a different bearing. At the outset, VMF-221 enjoyed an advantage: *Kates* in the lead, with *Vals* behind and above them. The *Zeros* trailed the entire formation. Two divisions of *Buffaloes* and one of *Wildcats* flamed two of the first group of six *Kates* from *Hiryu* and sent away three with heavy damage and trailing smoke. Another formation of Type 97s from *Soryu* suffered three planes hit, one of which failed to reach its carrier. Unfortunately for the Marines, after their initial interception at about 14,000 feet and their first successful pass through the superbly disciplined enemy formations, the overwhelming number of *Zeros* quickly gained the upper hand, while the *Kates* and *Vals* bombed their objectives on Eastern and Sand island targets. As a black plume of smoke corkscrewed skyward from burning fuel tanks, only a pitiful few Marine fighters returned to the Eastern Island strip.

While Midway's defenders evaluated the damage and succored the wounded, VAdm. Nagumo, although confronted with conflicting reports about the damage his flyers had inflicted and not knowing whether or not American carriers lurked nearby, ordered (at 0715) his second attack wave to be reequipped with bombs.

Shortly before the Japanese admiral reached that decision, however, part of the strike group scrambled from Midway attacked his carriers. The six TBFs led the way, followed by the four Army B-26s that arrived almost simultaneously. Antiaircraft fire and fighter opposition downed five of the six TBFs and two of the B-26s.

Another difficulty now confronted Nagumo, and he postponed his planned second strike on Midway when a *Tone* plane informed him of a formation of 10 surface ships (with no details as to types), steaming 240 miles north by east of Midway. At 0739, shortly after his carriers had begun recovery of the morning strike, Nagumo altered course and, at 0745, ordered his carriers to "Prepare to carry out attacks on enemy fleet units. Leave torpedoes on the planes which have not yet been changed to bombs...." Two minutes later, he directed *Tone*'s plane to "Ascertain types [of ships] and maintain contact...."

Soon after Nagumo made those dispositions of his force, Major Henderson and his group, flying at 9,500 feet, sighted the Mobile Force at 0755. *Zeros* shot down six of the Marine SBDs. The remaining planes attacked *Hiryu* but scored only one near miss and inflicted some damage from strafing. Radio gunners in the SBDs splashed one *Zero*.

Soon after the last of the Marine SBDs had cleared the area, Nagumo received the unexpected and disturbing news from *Tone*'s *Jake* (at 0820) that a carrier appeared to be in the American force. Nagumo's ordering his planes rearmed for a strike on surface ships, however, delayed the launch of planes to deal with the threat. In the meantime, ships in the screen dealt with the presence of the submarine *Nautilus* (SS-168), which had crept into the midst of his disposition, while Nagumo's men proceeded to rearm a portion of a strike. Soon afterward, the rest of VMSB-241 attacked the battleship *Haruna* with no success. The Army B-17s, which finally located the Japanese at that juncture, loosed their bomb loads but their targets, the carriers, easily evaded them. While neither the TBFs, B-26s, SBDs, SB2Us, nor B-17s scored any damage, they had seriously disrupted Nagumo's routine.

At 0600, as planes from Midway had been scrambling to get airborne in the path of Tomonaga's incoming strike, Fletcher had ordered Spruance to proceed to the northwest. At 0603, as TF-16 was settling on its new course, Fletcher and Spruance received the unauthenticated report pinpointing two carriers – not the four that intelligence estimates had predicted – and battleships 175 miles to the southwest.

His search planes still aloft, Fletcher

Hiryu, pummeled by bombs from Yorktown's orphaned VB-3, as well as those from planes of Enterprise, lies abandoned and burning on the morning of June 5, 1942, as seen from a Japanese plane.

NH 73065

ordered Spruance to "Proceed southwesterly and attack enemy carriers as soon as definitely located," and informed him: "I will follow as soon as planes recovered." He thus kept TF-17 in reserve while Spruance and his staff decided upon an 0700 launch when the enemy would, by their calculations, be 155 miles to the west southwest of TF-16. Meanwhile, *Yorktown*'s dawn search returned empty-handed. Flight operations completed, Fletcher turned TF-17 to follow TF-16, *Yorktown*'s squadrons to be held in reserve.

Enterprise and *Hornet* commenced getting planes aloft at 0700. *Hornet* put up 10 fighters to escort 34 SBD-3s: 15 from VS-8; the *Hornet* air group two-plane section; and 17 planes from VB-8. Fifteen TBDs from VT-8 brought up the rear. From *Enterprise* rose the three-plane air group section, 15 SBD-3s of VS-6, and 15 SBDs from VB-6. Mechanical casualties forced four *Dauntlesses* to be struck below. Delays – light wind conditions and the necessity of spotting VT-6's 15 TBDs and the escorting VF-6 F4Fs on deck – prompted Spruance, at 0745, to order his planes to "Proceed on mission assigned." *Enterprise*'s air group commander plotted his course to intercept the Japanese to the southwest. The TBDs were to join up en route.

While TF-16 was getting its planes airborne, TF-17 steamed to the southwest at 25 knots. Frank Jack Fletcher, eager to find the other two Japanese carriers believed to be a part of the enemy striking force, waited until the report of a snooper near TF-17, shortly after 0800, changed the complexion of things. Fletcher decided at 0838 to launch 17 SBDs of VB-3, 12 TBDs of VT-3, and six F4Fs of VF-3 to attack the same carriers against which Spruance had sent his planes. He would reserve the 17 SBDs of V"S"-5 for either a search or for a second attack. Although basing their estimate on the two-hour-old contact report, Yorktown's strike planners plotted an interception. *Yorktown*, steaming to the southeastward, then drew away from TF-16 as she launched planes.

Hornet's VT-8 located Nagumo first, unaware that their fighter escort had strayed resulting in VF-6's following VT-8. Ultimately, all 10 of VF-8's F4Fs had to ditch. Undeterred, VT-8 bravely bore in on Nagumo's carriers. Antiaircraft fire and *Zeros*, however, splashed all 15 *Devastators*. Only one pilot survived – by hiding beneath his seat cushion in the midst of the Japanese Fleet – to tell the tale of what transpired soon thereafter. *Enterprise*'s VT-6 came next. Although it did not suffer the losses inflicted by flak and fighters on *Hornet*'s ill-fated *Devastators*, it likewise enjoyed no success.

Both VT-8 and VT-6 had, however, drawn down the Japanese combat air patrol. After the slaughter of TF-16's torpedo planes, Nagumo's carriers steamed in disarray, the morning's emergency maneuverings having broken up their disposition. *Hiryu* steamed off to the north, protected by a front, with *Akagi*, *Soryu*, and *Kaga* trailing. At about that juncture, the *Enterprise* air group appeared on the scene, having sniffed out the scent by following the speeding destroyer *Arashi* (which Nagumo had detached to stay behind and deal with the pestiferous *Nautilus*) as she headed for the main body of the Japanese striking force. Almost simultaneously, but in wholly spontaneous fashion, *Yorktown*'s strike group arrived.

Both groups attacked as soon as circumstances permitted.

VT-3, from *Yorktown*, brought up the rear of the torpedo attack, but despite the valiant efforts of the six-plane escort, *Zeros* took their toll of Torpedo Three's men and machines.

In only a few minutes, the SBDs from the two American carriers pummeled three of the once-proud Japanese flattops into blazing and exploding junk. VB-3 – although diminished by some pilots' having inadvertently dropped their bombs en route due to a switch malfunction – knocked *Soryu* out of the fight while VB-6 and VS-6 did the same to *Kaga* and *Akagi*.

Hiryu, however, off to the north, momentarily escaped destruction, to achieve some measure of vengeance. Search planes having pinpointed TF-17's location, a force of *Vals* escorted by *Zeros* set upon *Yorktown*, scoring three bomb hits despite furious antiaircraft fire and a dogged defense by VF-3 planes that were augmented by those from VFs 8 and 6. Stopped dead in the water, *Yorktown* lay helpless as her screen deployed around her and her returning strike group landed onboard *Enterprise* and *Hornet*. Spruance detached two heavy cruisers and two destroyers to lend a hand. Fletcher, realizing that he could no longer exercise tactical command, transferred his flag to the cruiser *Astoria* (CA-34) and turned over the reins to Spruance. That afternoon, a search,

Stretcher bearers onboard Enterprise carry off AOM2c Clifton R. Bassett of VB-3, who had been wounded in the attack on Hiryu on the afternoon of June 4. His pilot, Ens. B. R. "Randy" Cooner, USNR, walks beside the first aid party. 80-G-7746

Lt. William N. Leonard, X.O. of VF-3, takes off in his Grumman F4F-4 Wildcat (BuNo 5244) on the morning of June 4, as photographed by PhoM2c William G. Roy. Later that day, flying this plane (No. 13), Leonard would splash one Kate and damage a second in defending Yorktown against torpedo bombers from Hiryu. 80-G-312016

launched by *Yorktown* earlier that day, spotted *Hiryu*. A second strike, comprised of planes from *Enterprise* (which included ex-*Yorktown* planes among them) then mortally wounded *Hiryu*, which was abandoned and sank the next morning.

Yorktown's damage control people eventually got her underway in time to be hit by a second Japanese attack – this time by torpedo planes that had been launched from *Hiryu* before the *Enterprise* pilots had found her – that stopped the ship for the second time and forced her abandonment. The screening ships of TF-17 took onboard the carrier's survivors and moved off, with Fletcher leaving one destroyer to guard the crippled flattop. Ultimately, the Japanese submarine *I-68* torpedoed *Yorktown* a second time, on June 6, while a salvage party – gathered on the 5th – labored mightily to get her underway. The gallant lady sank on the morning of June 7.

The cruiser division detached by Nagumo to shell the atoll ran into difficulty. The fleet submarine *Tambor* (SS-198) happened across the division and, in the resultant confusion, the cruisers *Mogami* and *Mikuma* collided. Search planes picked up their trail and subsequent strikes, launched from Midway by VMSB-241 and from *Enterprise* and *Hornet*, eventually sank *Mikuma* and badly damaged *Mogami*. Air strikes from *Hornet* and *Enterprise* missed damaging the destroyer *Tanikaze*, as did a B-17 strike.

The heavy losses inflicted by the men from *Yorktown*, *Enterprise*, and *Hornet* forced Adm. Yamamoto to abandon his plans for trying to take Midway on June 4. The action on the 6th against the fleeing *Mikuma* and *Mogami* proved to be the last undertaken before RAdm. Spruance broke contact with the Japanese. Over subsequent days, PBYs rendered important service in ranging over the Pacific either aiding or affecting the rescue of survivors from both sides.

Adm. Nimitz and his subordinate commanders, RAdms. Fletcher and Spruance, knew of the enemy's capabilities and intent. Merely knowing what the Japanese planned to do, however, was not enough. The Pacific Fleet's carrier striking force, formed around the only three flattops available at that time, had to prove equal to the task of denying the enemy's carrying out its plans. That task was accomplished with a high loss of men and planes – reminding at least one participant that war was a "grim and terrible business" – but they had achieved a victory. They had written what Adm. Nimitz proudly called "a glorious page in our history." ■

Mr. Cressman is a historian in the Ships' History Branch of the Naval Historical Center.

50 Years Ago – WWII

May 15: The design of the National Star Insignia was revised by eliminating the red disk in the center of the star and the horizontal red and white rudder striping was discontinued.

May 15: The Chief of Naval Operations ordered that an Assistant Chief of Naval Operations (Air) be established to deal with aviation matters directly under the Vice Chief of Naval Operations and that the Chief of the Bureau of Aeronautics fill the new office as additional duty.

May 26: The feasibility of jet-assisted takeoff was demonstrated in a successful flight test of a Brewster F2A-3, piloted by Ltjg. C. Fink Fischer at NAS Anacostia, D.C., using five British antiaircraft solid propellant rocket motors. The reduction in takeoff distance was 49 percent.

Jun 10: A formal organization, Project Sail, was established at NAS Quonset Point, R.I., for airborne testing and associated work on magnetic airborne detector gear.

Jun 13: Loran, long-range navigation equipment, was given its first airborne test. The receiver was mounted in the K-2 airship and in a flight from NAS Lakehurst, N.J., accurately determined position when the airship was over various identifiable objects.

Jun 16: Congress authorized an increase in the airship strength of the Navy to 200 lighter-than-air craft.

Jun 29: Following an inspection of Igor I. Sikorsky's VS-300 helicopter on June 26, LCdr. R. A. Erickson, USCG, recommended that helicopters be obtained for antisubmarine convoy duty and lifesaving.

Stealth Technology

By Kenneth Foulke

Low Observable (LO) technology will create a major change in future weapon systems. The results could be as revolutionary as the introduction of radar or jet engines. Reduction of the radar, infrared, acoustic, ultraviolet, and visual signatures of aircraft will render current antiair weapon systems much less effective. The reduced capability will dramatically improve the survivability of our aircraft and greatly enhance their ability to complete their mission. During the concept formulation of all new weapon systems, LO technology will have to be considered as part of the design process. Whether LO technology will be incorporated in the design, and to what level, will have to be part of the design trade studies.

LO technology cannot be added as an afterthought to an aircraft design. To achieve the optimum benefit, it must be incorporated as part of the initial concept of the vehicle. LO techniques impact every other design factor and technology involved in developing an aircraft. No feature of the aircraft can be designed without careful consideration of its impact on the signatures of the aircraft.

LO technology has major impacts on the design of the vehicle down to as fundamental a level as the basic planform. Shaping, an integral part of LO design, will be a prime driver in developing the basic planform configuration. While LO design and good aerodynamic design may complement one another in some aspects, in others they are in conflict. The differences between good LO design and good aerodynamic performance are especially important for the Navy, because its aircraft must be able to take off and land on a carrier deck. The integration of LO technology with carrier suitability is one of the critical challenges facing Navy aircraft designers.

Radar absorbing structure (RAS) and radar absorbing materials (RAM) are used extensively on LO aircraft. The design and use of these materials is particularly critical to Navy platforms. In many cases, the RAS and RAM are parasitic materials that add weight, complicating the problem of recovering an LO aircraft onboard a carrier. Because of the environment in which Navy aircraft operate, corrosion control is one of the Navy's major maintenance problems. The use of RAS and RAM complicates this problem. Most RAMs corrode unless protected by anticorrosion coatings. RAS structure is often incompatible from a corrosion standpoint with conventional aircraft structure. The use of RAM and RAS can increase maintenance man-hours. The Navy is working to develop RAM and RAS designs that are compatible with the marine environment.

Another major area of development is sensor design and integration. Modern aircraft are flying sensor platforms. There are radar, infrared and radio sensors for navigation, communication, identification, weapons delivery, and electronic countermeasures. In most cases, these sensors rely upon active emissions to perform their mission. Active emissions are incompatible with the stealth operations of an aircraft. New passive techniques for sensor use are required. Equally important, the sensors are prominent contributors to the signature of the aircraft. New low-signature sensors must be developed and employed on LO aircraft designs.

LO technology provides tremendous potential for increasing the survivability of the Navy's aircraft, but it also presents the Navy with many challenges in incorporating LO technology into a carrier-suitable aircraft. ■

Mr. Foulke is a Technical Consultant to the Microwave Technology Division of the Naval Air Development Center, Warminster, Pa. He holds a BS (Physics) from Muhlenberg College, an MS (Physics) from the University of Rhode Island, and an MSEE from Drexel University.

ANA Bimonthly Photo Competition

Artist Hank Caruso won the bimonthly ANA Photo Contest with the photograph below, which he took while flying with the Blue Angels in March 1990 in a practice airshow over NAF El Centro, Calif. The view is from the No. 4 aircraft, in an echelon turn, flown by slot pilot LCdr. Doug McLain. Right, PHC Denis Keske received honorable mention for capturing two VF-84 maintenance crewmen sitting on the wings of an F-14A Tomcat aboard Theodore Roosevelt (CVN-72).

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.

Awards

ABH2 Raymond C. Stallings of *John F. Kennedy* (CV-67) received the **J. D. Maloney Award** as the Navy-Marine Corps Seabased Firefighter of the year. Presented by the Navy & Marine Corps Fire Protection Association, Stallings received the award in April during the annual conference.

ABH2 Raymond C. Stallings

VA-145 received the CinCPacFlt **Arleigh Burke Fleet Trophy** for FY 91. This competition recognizes the unit which demonstrates the greatest improvement in battle efficiency during the fiscal year.

A Tactical Coordinator (TACCO) is responsible for directing the efforts of a P-3 crew to detect, localize, and track hostile submarines. Becoming a TACCO takes over a year of daily training in a fleet VP squadron.

Lt. Bill Albin of VP-62, designated a Patrol Plane Tactical Coordinator in November 1991, is a selected reservist. He is the first officer commissioned through the Officer Sea Air Mariner (OSAM) program to achieve this honor. An OSAM serves in an active duty for training status for two years and then returns to the civilian world as a member of the Naval Reserve.

Ltjg. Brian Gilk

Lt. Bill Albin smiles about becoming the first OSAM TACCO as he stands in front of a P-3C Update III at NAS Jacksonville, Fla.

Theodore Roosevelt (CVN-71) received the 1990 **ComNavAirLant Quality of Life Excellence Award** for outstanding performance in improving living conditions afloat.

PH2 John Bivera

Navy Lt. Kelly Franke piloted 105 combat support missions from Bahrain during Operations Desert Shield and Desert Storm. She received regional and national honors as the Navy Helicopter Association's 1991 Pilot of the Year for inspirational performance as a helicopter pilot with HC-2's "Desert Duck" detachment.

ComResPatWingLant won the 1991 **Sheldon Clark Trophy**. This award is presented annually to the reserve functional wing most effective in the management of its assigned squadrons.

NAS Corpus Christi, Texas, received the **CNATRA Award for Achievement in Safety Ashore** for FY 91. This safety excellence program resulted in reductions of 45 less reportable injuries for civilian employees and 50 less for military personnel over FY 90. NAS Corpus Christi also experienced its lowest private motor vehicle mishap rate on record.

Anniversary

March 6, 1992, marked the 40th anniversary of active service for **VC-6**, NAS Norfolk, Va. Originally designated VU-6, the *Firebees* were established on March 2, 1952, at NAS Norfolk to provide aerial target services for ships of the Atlantic Fleet. Over the years, the mission of VC-6 has been expanded to include a variety of surface and aerial target services as well as performance of airborne reconnaissance/surveillance functions for both the Atlantic and Pacific fleets.

Records

Several units marked **safe flying time**.

Unit	Hours	Years
HS-5	37,000	11
HS-6	9,600	3
HS-9	47,500	14
HSL-34	8,000	1
HSL-41	54,164	9
HSL-45	18,550	2
NAF El Centro	6,100	10
NAF Kadena	32,620	30
VA-145	9,000	2
VAQ-135	20,100	12
VAQ-138	16,970	10
VAQ-139	4,500	3
VAW-114	40,455	21
VF-124	28,000	3
VF-154	26,000	7
VFA-97	19,600	5
VMA(AW)-224	25,000	
VMFA-333	50,000	
VP-4	141,314	20
VP-46	202,000	28
VP-90	55,000	12
VR-30	103,600	16
VS-27	29,200	5
VS-30	44,000	11

Cdr. James R. Stapleford, C.O., VT-23, passed his 5,000th accident-free flight hour while flying an air-to-air gunnery flight in a T-2C *Buckeye*.

Rescues

Adrift for five days in three lifeboats and a raft, crew members of the fishing vessel *Jenny Margot* were glad to see Lt. Robert W. Neil's P-3 *Orion* on February 12.

The *Jenny Margot*'s crew had abandoned the vessel after losing control of a fire that began in its engine room. The faint signal of their Emergency Position Indicating Radio Beacon was detected by a search and rescue satellite and correlated by the Joint Rescue Coordination Center in Alameda, Calif.

Alerted by the Coast Guard in Alameda on February 10, the P-3 attached to **VP-40** was dispatched from NAS Moffett Field, Calif. Using advanced onboard radar tracking systems, the P-3 crew located the fishermen 1,300 nautical miles west of Panama. The *Orion* then led another fishing vessel, *Jennifer*, to the *Jenny Margot*'s crew. All 26 members of the *Jenny Margot* were taken aboard the *Jennifer* and were reported in good condition.

A P-3 *Orion* from **VP-66**, NAS Willow Grove, Pa., was conducting routine operations 100 miles off the west coast of Portugal when it heard a radio transmission from the French sailing vessel *Vibel* requesting medical assistance for an injured seaman. A Commonwealth of Independent States *Kilo*-class submarine also heard the call and offered the assistance of its doctor. The P-3 coordinated the rendezvous between the two vessels. When the P-3 needed to refuel, a French aircraft provided communication assistance.

After initial treatment by the sub's doctor, the injured seaman was successfully evacuated by a Portuguese helo to Montijo Air Base, Portugal.

HSL-37, Det 6, embarked on *Robert E. Peary* (FF-1073) was steaming from a liberty port in the United Arab Emirates to the northern Arabian Gulf for a mine-sweeping operation. Det 6's morning crew was preparing "Easyrider" 55, an SH-2F *Seasprite*, for the day's mission, which included mine-sweeping and surface surveillance and control. As they prepared the aircraft for launch, *Peary* crewmen called "man overboard."

The helo began a search and rescue (SAR) of the assigned area. The man overboard was first sighted by the ship's forward lookout, treading water off the port bow one mile from the ship. The helo arrived above the survivor and dropped a life raft. SAR swimmer AW2 Guy Venuti was deployed and was hoisted back into the aircraft, along with the survivor, three minutes after the helo crew had spotted him.

The sailor from *Peary* had been in the gulf for one hour and, despite numerous sea snakes and sharks in the vicinity, his only symptoms were mild hypothermia and shock. The victim was in sickbay only 44 minutes after he was discovered missing.

Scan Pattern

VRC-40 played an unusual role in the life of a pregnant pygmy sperm whale which beached itself at Virginia Beach, Va. The whale, normally a subtropical mammal, was stranded and found near death on the beach at the Back Bay National Wildlife Refuge on December 15, 1991. She was rescued by a team from the Virginia Marine Science Museum (VMSM).

The whale, named "Noel" by her rescuers, was ailing from apparent liver damage and underwent treatment with antibiotics in a museum holding tank until her condition stabilized. Meanwhile, museum officials decided that the whale's chances of survival would be better in the warmer climate of Florida in a larger tank at Marineland in St. Augustine. They asked the Navy for help.

The Navy was able to fly the whale and the VMSM team on VRC-40's previously scheduled training flight from Norfolk to Florida. Squadron crew members strapped a wood-framed cradle lined with egg crate foam to the deck of a C-2 cargo plane and helped lower the 1,000-pound whale in a stretcher into the cradle to keep her upright during the two-hour flight.

Upon arrival, there was a quick and smooth transition from the aircraft to an awaiting van which took the whale to her temporary home in Marineland.

AVCM(AW) Janeece Dickerson relieved NCCM(SW) Jackie R. Mondie as the Force Master Chief of the Navy's Military Sealift Command. It is believed to be the first time that a woman has held that position in the Navy.

"I'm glad for this opportunity, because it shows the progress women have made in the Navy," she said.

Barry Lake

AVCM(AW) Janeece Dickerson, Force Master Chief of the Navy Sealift Command.

"When I first started, it was unusual to see a woman higher than a second class petty officer."

Dickerson was selected for the force master chief job because of her outstanding record. A native of Crane, Texas, she enlisted in the Navy in 1974 as an aviation electronics technician and began her aircrew career in 1975, qualifying initially as flight atten-

dant/loadmaster at Naval Weapons Center, China Lake, Calif.

During her 17 years in the aviation community, she has recorded many accomplishments, including qualifying as a plane captain on C-131 and C-12 aircraft. As a second class petty officer, she was qualified to have high/low power-turn and to taxi C-130s, a rare achievement for an enlisted person. While assigned to Fleet Reconnaissance Squadron 3, she earned her Naval Air Training and Operating Procedures Standardization qualification in eight months, a record for the squadron. NAS Agana, Guam, nominated her for Federal Woman of the Year in 1987. She was promoted to master chief in 1991, 17 years after she enlisted, an impressive rise for anyone, male or female.

In Memorial...

Admiral George W. Anderson, Jr., who served two years as Chief of Naval Operations (CNO) before retiring from active duty in 1963, died on March 20 at the Arleigh Burke Pavilion in McLean, Va. Before becoming CNO in August 1961, Adm. Anderson, an aviator, served in some of the Navy's highest seagoing and staff assignments. Along the way, he gained a reputation as an articulate and adamant officer who tempered strongly held convictions with savvy diplomatic skills which he used to smooth inter-service rivalries.

After his term as CNO, he was appointed Ambassador to Portugal, a post he held until 1966. In the 1970s, he served as chairman of the president's Foreign Intelligence Advisory Board.

Before WW II, he served aboard the cruiser *Cincinnati* and flew from the carrier *Lexington* and the first of the carriers named *Yorktown*. Also a test pilot, he later served as a planner at the Bureau of Aeronautics. He entered combat as navigator of the second carrier named *Yorktown* in the Pacific campaigns, serving later in the war as plans officer on the Pacific Fleet staff. During the 1950's, his assignments at sea included command of the Taiwan Patrol Force and command of Carrier Division 6 in the Mediterranean during the 1958 Lebanese crisis. From 1959 to 1961, he commanded the Sixth Fleet in the Mediterranean.

Change of Command

ComCarGru-5: RAdm. Brent M. Bennitt relieved RAdm. Daniel P. March.

ComNavAirLant: VAdm. Anthony Less relieved VAdm. John Ready.

CVW-11: Capt. Daniel W. Gabriel relieved Capt. Stephen L. Webb.

Forrestal: Capt. R. L. Johnson relieved Capt. Robert S. Cole.

HC-8: Cdr. Steven Kukral relieved Cdr. Robert D. Watts.

HMA-773: Lt. Col. Robert C. Eikenberry relieved Lt. Col. James M. Dunn.

HS-7: Cdr. William E. Christman relieved Cdr. Gary Cerney.

HS-9: Cdr. Charles H. Litz relieved Cdr. John D. Christensen.

HS-14: Cdr. David A. Dahmen relieved Cdr. Richard W. Sluys.

HSL-48: Cdr. Ronald E. Nasman relieved Cdr. Leland S. Kollmorgen.

MAG-16: Col. John P. Kline, Jr., relieved Col. Larry T. Garrett.

NAS Whidbey Island: Capt. Robert R. Penfold relieved Capt. David T. Waggoner.

VA-52: Cdr. Rick Hess relieved Cdr. Jim Zortman.

VA-75: Cdr. Thomas L. Hagen relieved Cdr. Kolin M. Jan.

VAQ-141: Cdr. David L. Wirt relieved Cdr. Frank E. Folly.

VAW-78: Cdr. Daniel R. Walters relieved Cdr. William T. Champion.

VF-41: Cdr. Stephen E. Benson relieved Cdr. Chris Wuethrich.

VF-143: Cdr. Shawn M. Smith relieved Cdr. Brent S. James.

VF-111: Cdr. Robert H. Clement relieved Cdr. Bryan L. Rollins.

VFC-12: Cdr. Donald Auten relieved Cdr. Robert Benefield.

VP-50: Cdr. Fred B. Horne relieved Cdr. John M. Mauthe.

VP-62: Cdr. Jan S. Milligan relieved Cdr. John B. Miner.

VQ-4: Cdr. Paul J. Jackson relieved Cdr. Paul A. Moore.

VR-59: Cdr. Scott K. Williams relieved Cdr. Richard A. Katterich.

VS-29: Cdr. J. J. Paulis relieved Cdr. Gary Carter.

VT-10: Cdr. Richard J. Jensen relieved Cdr. Robert W. Bennett, Jr.

PROFESSIONAL READING

By Cdr. Peter Mersky, USNR

Flintham, Victor. *Air Wars and Aircraft: A Detailed Record of Air Combat, 1945 to the Present.* Facts on File, Inc., 460 Park Ave. S., New York, NY 10016. 1990. 424 pp. Ill. $40.00.

In the 10 years I have been writing this column, I have seen hundreds of books. If I had to choose the one book that represented a publishing milestone, a stupendous effort, and a major source all in one volume, it would be this one.

Air Wars and Aircraft is a mind-boggling assortment of facts, figures, and accounts of air warfare after WW II. It offers an almost endlessly fascinating look at the familiar and obscure conflicts that shaped the postwar world. The book discusses wars in places that some people might not have heard of, or knew that a conflict occurred.

The only bad thing about the book is that it only goes up to early 1988. What a shame that it couldn't have included the 1991 Gulf War, or the unexpected civil war in Yugoslavia, which saw federal aircraft in combat for the first time since 1945. It does have a lengthy "Gulf War" entry, but that is the earlier war between Iran and Iraq, with a secondary discussion of the war at sea between the U.S. and Iran in 1988.

People tend to think in terms of major conflicts, but in the 45-year period this book covers, air warfare has been constant throughout the world. In fact, British navy and air force aircraft were involved in combat almost constantly from 1945 to the late 1980s (and, of course, in 1991). The book reveals that several benign types have been blooded in UK service, including the long-lived *Shackleton* which saw rather intense service as a strafer in Aden and East Africa. The twin-rotor *Belvedere* transport helicopter also saw considerable combat service in many of Britain's "little wars."

Larger conflicts, such as Vietnam, or the Arab-Israeli wars (which cover the period of the book) are certainly given their due in expansive essays, which are conveniently broken down into areas such as "Carrier Operations" or "Reconnaissance" sections, complete with detailed tables and locator maps. (There are 100 maps which help find and analyze the described action in out-of-the-way areas.) The section on Vietnam includes a table on U.S. carrier deployments that covers four pages and really brings home the scope of Naval Aviation's involvement in the war.

There are a few errors that crop up, especially in the tables. For example, the Marine Corps did not operate OV-10As in 1964 (p. 267), and VFP and RVAH reconnaissance aircraft did use air wing code letters after 1966 (table note, p. 282). Other inaccuracies include aircraft side numbers, and occasional details. The North Vietnamese air force did not shoot down an F-8 in 1965; the heavily damaged *Crusader* was recovered at Da Nang (p. 305).

The photos are interesting and show aircraft and operations of which American readers may not have heard. (For instance, p. 126 carries a picture of a Rhodesian Cessna 337 [O-2] with *overwing* machine guns.) I wish the reproduction were better in many cases. I also wish that a small color folio could have been included.

These nitpicks aside, *Air Wars and Aircraft* is a tremendous effort and offers hours of reference or browsing. Aerial orders of battle abound, and there is a generous bibliography, series of appendices, and index.

Kinzey, Bert. *The Fury of Desert Storm: the Air Campaign.* TAB Books, Blue Ridge Summit, PA 17294-0850. 1991. 160 pp. Ill. $16.95.

A good book with a serious intent to tell the straight story, *The Fury of Desert Storm* is generally well written and even uses proper terminology, such as "spotting" aircraft on a flight deck instead of "parking."

There *are* a few mistakes. CVW-17 *Hornets* scored two kills, not all three Navy kills. (VF-1 of CVW-2 got an MI-8.) VA-72 painted one of its A-7s in a special camouflage for its flyoff, and did not operate the plane in this paint scheme during the war.

The book has several sections that deal with aircraft, ships, and ordnance – each with photos and specifications. Appendices discuss air-to-air kills and losses and air order of battle. Besides photos, there are rudimentary maps and charts.

The best portion is undoubtedly the straight-from-the-heart indictment of the media and its horrible coverage. This essay is a scathing, sometimes darkly amusing, lambasting of the press with many indisputable examples of the reporters' ineptitude, and is worth the price of the book.

Dzhus, Alexander M. *Soviet Wings: Modern Soviet Military Aircraft.* Greenhill Books, Park House, 1 Russell Gardens, London NW11 9NN UK, and Presidio Press, 31 Pamaron Way, Novato, CA 94949. 1991. 192 pp. Ill. $50.

It is impossible to avoid comparing this book to such previous efforts as *The Cutting Edge*, but *Soviet Wings* would have been unthinkable even three years ago.

The price is rather steep, although the book is primarily in color. Several of the photos are grainy since they have been blown up to fit the large, two-page format and have obviously been taken through the photographer's canopy. The best views are those on the ground showing the aircraft and crews.

These ground shots show how the Russians are not so concerned with the niceties of a flush seam with countersunk rivets, but with building a strong-as-a-tank load hauler that can operate from rough, even unprepared strips.

A lot of the air-to-air shots begin to look the same. There are two MiGs, or a four-plane formation, shot against a watercolor sky or against a green patchwork on the ground. There are though a few fascinating shots, such as the shipboard *Flanker D* unfolding its wings onboard or trapping aboard *Tblisi* (now *Admiral Kuznetsov*).

Large, multiengine aircraft, such as the *Bear*, *Backfire* and *Blackjack*, are also shown, as is an unusually camouflaged AN-22 *Cock*. There are, however, only a few helicopter photos.

With so many photo opportunities coming, it seems almost daily, good color photos of Soviet aircraft will certainly fill more books. For now, though, this effort has the market to itself.

HC-3 25th Anniversary

The *Packrats* of HC-3 are celebrating their 25th anniversary in September 1992, and as part of the celebration are putting together a cruise book covering the squadron's years of fleet support. HC-3 needs stories and photos from past members, which cannot be returned. The book will be available for purchase at about $25. Please send any material, no later than May 31, to HC-3, ATTN: PAO, NAS North Island, San Diego, CA 92135-5199. Address questions to Ltjg. Vogel, 619-545-8194/AV 735-8194.

Tex Beneke

I am trying to locate historical data involving Gordon Lee "Tex" Beneke, a Big Band Era band leader, who was in the Navy between 1943 and 1945. CPO Beneke led a Naval Aviation big band out of the Naval Air Tactical Training Command, Norman, Okla., playing for service personnel stationed in the area.

The U.S. Postmaster General, Anthony M. Frank, has written that the Postal Commemorative Society Committee is considering, as part of its American Music series, an issue of stamps honoring the bands of the Big Band Era. It will be most helpful to locate all of Mr. Beneke's records of performance from the Navy to ensure his inclusion. I need sound recordings, motion picture film, "Coming Attraction" brochures, newspaper articles, etc., which indicate the activities of CPO Beneke and his band at the various military stations. If you need written authority from Beneke to release any personnel files, please let me know.

Robert C. Todd
4703 Seashore Dr.
Newport Beach, CA 92663

Missing Safety Gear

Re: your January-February 1992 issue, super mag as always. What would Grampaw Pettibone say to Jerry Plunkett of AMARC [Aerospace Maintenance and Regeneration Center] on page 24? Crisscrossed legs over/on a rail and no head, eye, or respiratory protection. As maintenance officer of VRC-50, I almost chipped a tooth on that one!

LCdr. Rex A. Schildhouse
VRC-50 Box 195 PSC 460
FPO AP 96454-2760

Acronym Meanings

A historian in the Naval Aviation History Office, colocated with *Naval Aviation News*, asks help with the meanings of two acronyms which keep popping up: ACORN (circa WW II) and MODEX (referring to today's aircraft). Please write to the Editor.

Cuban Missile Crisis

Researcher seeks firsthand accounts of all aspects of U.S. Naval Aviation operations in the Cuban Missile Crisis, October 1962. Please contact Cdr. Joseph F. Bouchard, HQ AFSOUTH, PSC 813 Box 2, FPO AE 09620-1000.

Reflections on Wake Island

The fine article by John Elliott in your Jan-Feb 92 issue, "Wake Island – A Gallant Defense," brought back to me even sadder memories than those of the Japanese attack on Pearl Harbor – and I was present at both U.S. Navy debacles. At Pearl Harbor, it happened so suddenly and unexpectedly that one hardly had time to comprehend the tragic enormity of what had transpired. On the other hand, Wake Island was a day-by-day epic defense by the gallant Wake Island Marines from December 7 until the final overwhelming Japanese attack on the 23rd. All who followed the events at Wake on a daily basis – already aroused to hatred against and desire to attack the Japanese as a result of Pearl Harbor – were completely angered and frustrated that our forces did not go to attack the Japanese attempting to capture Wake Island and to aid our Marines defending the island.

Finally, on December 16 (after days of delay occasioned by Adm. Kimmel's staff wasting time to "study" the situation), *Saratoga* – with several fighter and bomber squadrons embarked, including one Marine squadron, plus three heavy cruisers; our destroyer squadron (I was on USS *Blue* (DD-387), previously on *Saratoga*); the oiler *Neosho*; and the seaplane tender *Tangier*, converted to a transport with Marines aboard – sortied Pearl Harbor en route to relieve Wake and to attack the Japanese forces there.

Unfortunately, at this time, Adm. Pye had relieved Adm. Kimmel temporarily pending the arrival of Adm. Nimitz. Adm. Pye was a cautious and conservative man. It was also unfortunate that Adm. Fletcher, a nonaviator on *Astoria*, was in command of the task force instead of Adm. Fitch on *Saratoga*, an aviator and classmate of Adm. Fletcher's.

It was again unfortunate that our speed headed west was only about 12 knots because of the tanker's limited speed. (All other ships could have proceeded at 20 to 25 knots.) On the 22nd, when about 450 miles from Wake – an easy day of steaming to be within aircraft range – Adm. Fletcher spent the entire day fueling half of the destroyers on a course heading away from Wake. At this time, it was obvious the situation on Wake was getting critical as a Japanese force moved in to attack. Furthermore, Adm. Fletcher should have been worried more about the plight of the garrison on Wake vice fuel on his destroyers. (I can attest that we had plenty of fuel and all hands were champing at the bit to get going towards Wake.)

On the 22nd/23rd, as a Japanese attack was imminent and then occurred, Adm. Pye remained undecided on what to do. Marine officers on his staff pleaded with tears in their eyes to allow the relief expedition to continue. Pye changed his mind several times, first ordering *Saratoga* to steam at full speed to within 200 miles of Wake and launch its planes to attack the Japanese ships. Soon afterwards, he issued orders countermanding his original ones and ordering the *Saratoga* task force to return to Pearl Harbor.

Everyone in our force was at first shocked and then angry. Tempers flared from almost everyone on Adm. Fletcher's staff, plus Adm. Fitch and Capt. Douglas on *Saratoga* pleaded with Adm. Fletcher to ignore Pye's orders and make a run for Wake. Fletcher refused and bitter words were exchanged. Fitch, who wanted to press on, was so angry that he left the bridge. In the ready rooms on *Saratoga*, the Marine flyers, anxious to go to the aid of their buddies, cursed aloud and broke down in tears. A mutiny almost took place.

The American public was not told at the time of the aborted attempt to relieve Wake, but all in the military – especially in the Navy and Marine Corps – knew and felt anger, shame, and impotence. To add to the resentment, the voice of Tokyo Rose taunted, "Where oh where is the

United States Navy?" Gen. Pfeiffer, interviewed in 1968 over the recall of the relief force, said, "I call this the blackest day in the history of the U.S. Navy." When Adm. Joseph Reeves, former Commander in Chief of the U.S. Fleet, learned of the recall, he regarded it as "a disgrace to the United States Navy."

Indeed, I, having been there and shared the anger and frustration, also consider it the most shameful day in the history of our Navy.

Capt. John Lacouture, USN(Ret.)
1204 S. Washington St., Apt. 517W
Alexandria, VA 22314

Ed's note: We encourage readers to respond.

Lady Lex

Ed's note: Members of the Men of The Blue Ghost organization took umbrage at the use of the nickname "Lady Lex" in our article on the retirement of Lexington (CV/CVA/CVS/AVT-16) in our Jan-Feb 92 issue. Although the name "Blue Ghost" belonged to CV-16 and "Lady Lex" to CV-2, "Lady Lex" came to be commonly used for AVT-16 throughout the fleet over the years – however incorrectly. Technically speaking, the Men of The Blue Ghost are correct. But, since nicknames are used as terms of affection and respect, we hope the use of "Lady Lex" evoked only the most positive response for those who knew her as "Blue Ghost."

Flight Gear Needed

The Classic Fighters Air Museum is a nonprofit organization located in southern New Jersey and is dedicated to the restoration and preservation of fighter aircraft that have made significant contributions to aviation. The museum continually seeks interesting types of aircraft for display as well as all types of aviation artifacts and memorabilia.

The museum currently needs flight helmets and oxygen masks for its display mannequins. "Personalized" helmets, with either personal or squadron insignia, and older/obsolete types of helmets are particularly desired. Contact Greg Kolasa, evenings, 201-875-4168; daytime, AV 880-6502 or 201-724-6502.

Correction

NANews, Mar-Apr 92, "Rescue from Somalia," p. 14: The last paragraph states, "The final helicopter landed on Guam on January 5, 1991." It actually occurred at 2323Z January 5 (0223C January 6).

VO-VCS Personnel

A book is under way dealing with the experiences of all personnel whose aviation duties during WW II included service aboard any cruiser or battleship in any theater of operations. Call (201) 836-6006 or write:

William Neufeld
265 Grove St.
Teaneck, NJ 07666

Reunions, Conferences, etc.

VT-26 disestablishment **ceremony,** MAY 22, NAS Chase Field, TX. POC: ATC(AW) Maxson, 512-354-5574/5275.

Guadalcanal (CVE-60) reunion, JUN 24-28, Everett, WA. POC: Jack Dutton, 5530 Winchelsea Dr., Normandy, MO 63121, 314-522-3975.

VF-1 reunion, MAY 13-17, Virginia Beach, VA. POC: Ralph Kelly, 3349 Cahuenga Blvd. W., Los Angeles, CA 90068, 213-876-4544.

VP-50 disestablishment ceremony, MAY 21, NAS Moffett Field, CA. POC: Ltjg. Newton, 415-404-5400, DSN 494-5400.

Prowler Electronic Warfare Symposium, MAY 18-21, NAS Whidbey, WA. POC: LCdr. S. C. Tyson, VAW-121, NAS Whidbey Island, WA 98278-6100, 206-257-2093.

Enterprise (CV-6) reunion, JUN 12-14, Spokane, WA. POC: Charles Galles, S. 3803 Johnson, Spokane, WA 99206, 509-922-2863.

John Paul Jones School, NAS Sangley Point, reunion, JUN 26-28, Atlanta, GA. POC: C. Kupfer, 5331 Emerald Isle Dr., Orlando, FL 32812, 407-275-7344.

Ranger (CV-61) reunion, (includes last ship tour before decommissioning), JUL 3-5, San Diego, CA. Send S.A.S.E. to USS Ranger Reunion, PO Box 49, Round Top, NY 12473.

Night Air Group 90 (CV-6) reunion, JUL 16-18, Bremerton, WA. POC: A. W. Olson, 707 W. Florentia Pl., Seattle, WA. 98119, 206-283-2948.

HAL-5 reunion, JUL 17-19, Las Vegas, NV. POC: Charles Cass, 1335 W. Dolphin, Ridgecrest, CA 93555, 619-375-2179.

VFs 53 and 141 reunion, JUL 92, San Diego, CA. POC: Harold Dolin, 9646 Hamilton Hills Dr., Fishers, IN 46038, 317-849-0218.

Salisbury Sound (AV-13) reunion, JUL 2-4, San Antonio, TX. POC: Don Mihalski, 1921 Pitman Rd. #1, St. Hedwig, TX 78152.

Bon Homme Richard (CV/CVA-31) reunion, AUG 14-16, Denver, CO. POC: Ralph Pound, PO Box 1531, Tupelo, MS 38802, 601-842-0572/8247.

Forrestal (CV-59) reunion, AUG 17-23, Pensacola, FL. POC: MSCS T. P. O'Brien, 2325 Calvin Ave., Norfolk, VA 23518, 804-583-1070.

Coast Guard SAR Pilots Exhibit

I am assembling an exhibit in the National Museum of Naval Aviation, Pensacola, Fla., to honor U.S. Coast Guard search and rescue pilots who served in Vietnam. If you possess anything which you could donate for permanent display, please contact me.

MM1 Lonnie L. Mixon II
Bldg. 3231/CMAA
NAS Pensacola, FL 32508

Salamaua (CVE-96) reunion, AUG 27-30, Kansas City, Mo. POC: Walt Johnson, 7327 Reeds Rd., Overland Park, KS 66204, 913-432-4525.

V-5 Preflight 50th anniversary, AUG 27-30, Salina, KS. POC: John Ryberg, PO Box 586, Salina, KS 67402-0586, 913-827-9301.

VC-70 reunion, AUG 27-30, Kansas City, MO. POC: Bill Merris, 1336 Winterhaven Dr., Farmers Branch TX 75234-5054, 214-247-4581.

VC-87 reunion, AUG 27-30, Kansas City, MO. POC: Fred Stock, 6195 N. Lakeshore Dr., Hillsboro, MO 63050, 314-285-5515.

VP-57 (Korea 1953) reunion, Late Summer 1992, NAS Whidbey Island, WA. POC: Jim Fenely, 3246 Hyde Park Dr., Clearwater, FL 34621, 813-785-5971.

Forrestal (CVA/CV-59) reunion, AUG 17-23, Pensacola, FL. POC: Art Billingsley, 505 Rose Ave., Fruitland Park, FL 34731, 904-787-3763.

Aviation Boatswain's Mates Association Symposium, AUG 4-7, San Diego, CA. POC: Bill White, 619-421-1407.

Intrepid (CV/CVA/CVS-11) reunion, AUG 8, aboard the carrier in New York City. POC: Fred Hemmerich, 144 Furler St., Totowa, NJ 07512.

Enterprise (CVAN/CVN-65) reunion, AUG 16-19, Mt. Pleasant, SC. POC: Stanley Mros, 1118 Inverness Ln., Hanahan, SC 29406, 803-747-8361.

NAS Twin Cities reunion, AUG 22, MANGB Minneapolis/St. Paul International Airport. POC: Kirk Johnson, 7325 14th Ave. S., Richfield, MN 55423, 612-866-7194/920-4660.

Hoggatt Bay (CVE-75) reunion, AUG 27-30, Providence, RI. POC: Del Canady, 5868 Argyle Way, Riverside, CA 92506-3513, 714-787-8666.

Bunker Hill (CV-17) reunion, SEP 8-16, Asheville, NC. POC: Lloyd Taylor, PO Box 171, Union, SC 29379, 803-427-3817.

Card (CVE-11) reunion, SEP 17-19, Scottsbluff, NB. POC: Joe Macchia, 8290 Melrose Rd., Melrose, FL 32666, 904-475-1279.

MAG-24 and squadrons 50th anniversary, SEP 24-27, St. Louis, MO. POC: George Innes, 15234 Caravaca Rd., La Mirada, CA 90638, 714-521-2300.

VC-5 reunion, SEP 25-27, Va. Beach, VA. POC: Darrell Smith, Box 132 Rt. 1, Keysville, VA 23947, 804-736-8750.

VS-55 reunion, SEP 28-OCT 2, Colorado Springs, CO. POC: Bob Croman, 5014 Elberta Ave., Canton, OH 44709, 216-494-0673.

NAVAL AVIATION NEWS

May-June 1992