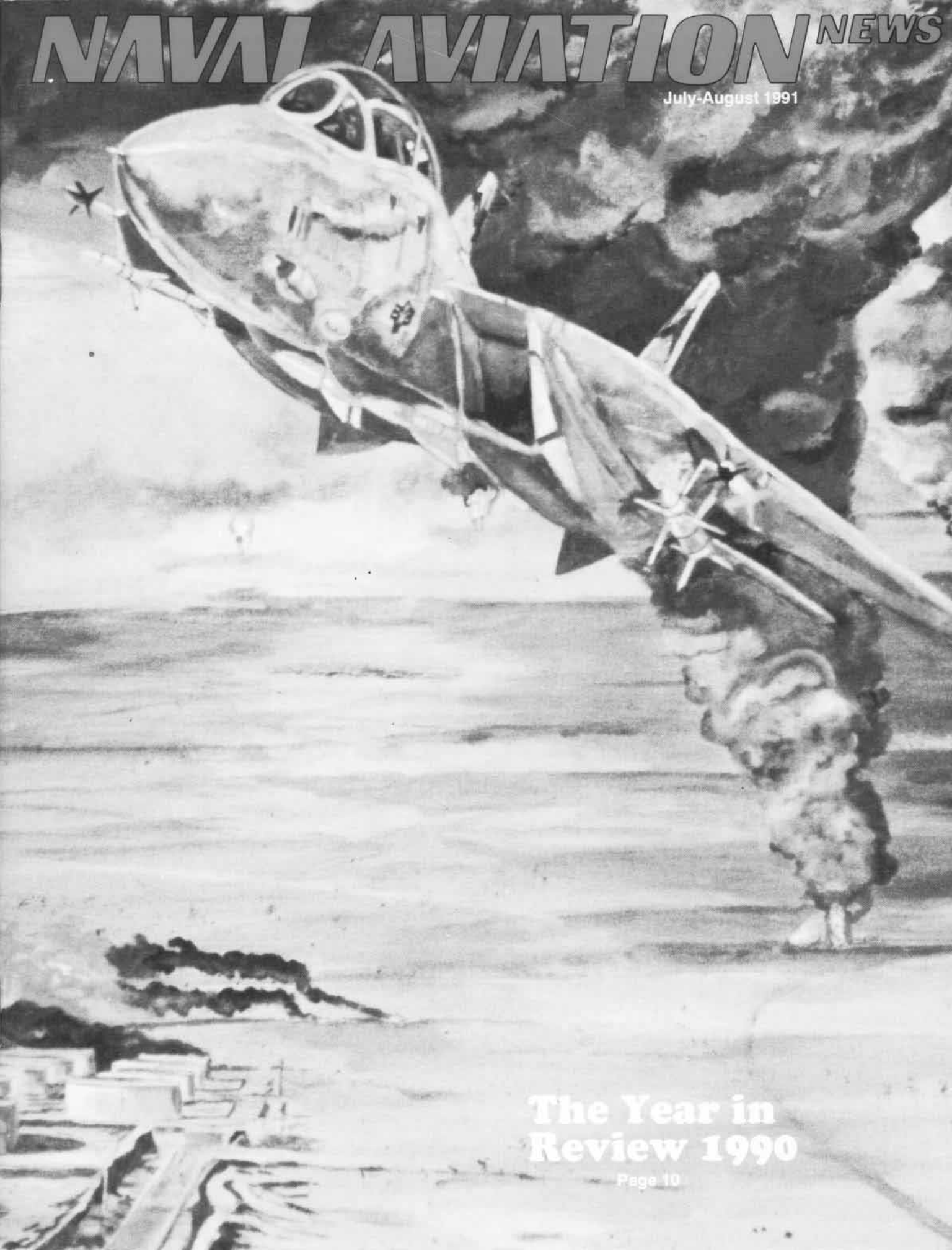
NAVAL AVIATION NEWS
July-August 1991



The Year in Review 1990

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NAVAL AVIATION NEWS

Flagship Publication of Naval Aviation

Oldest U.S. Navy Periodical, Volume 73, No. 5

COVERS – Front: combat artist Cdr. Chip Beck depicts a VF-1 F-14A over the burning oil fields in Kuwait. Back: a CH-53E *Super Stallion* of HC-4 lifts off from *Saipan* (LHA-2) in the Mediterranean.

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Naval Aviation News considers for publication unsolicated manuscripts, photo essays, artwork and general news about aircraft, organizations, history and/or human endeavors which are the core of Naval Aviation. All military contributors should forward articles about their commands only after internal security review and the permission of the commanding officer. Manuscripts will be returned upon request.

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The Shape of Wings to Come

By VAdm. Dick Dunleavy, ACNO (Air Warfare)

The direction in which Naval Aviation is heading is a hot topic that comes up as I visit the fleet. One of the major concerns is the structure of the carrier air wing of the future.

With fewer decks and wings to face future regional threats, we need to pack more punch on our carrier decks. We're headed toward 12 carriers and 13 air wings. Power projection is Naval Aviation's Number One priority. The *Roosevelt*-style wing with 20 F-14s, 20 FA-18s, and 20 A-6s has been magnificent, but it's aging and no longer affordable. The cancellation of the A-12 has set us back years in coming up with an A-6 replacement. So, modernization and beefing up our firepower are going to be tough, but here's our plan.

Modernization of the medium attack force remains our most critical need. The AX, a stealthy, subsonic replacement for the A-6, will be optimized for the all-weather strike mission, with as much multimission capability as can be afforded. Possible candidates include "Son-of-A-12," an ATF (advanced tactical fighter) derivative, or a fresh proposal. We won't see the AX in service until about 2003.

In the meantime, we are pressing for rewinging more A-6s, upgrading F-14s, increasing FA-18C/D procurement, and beginning development of a beefier, extended-range *Hornet*, the FA-18E/F, which should appear in 1998. This is the most affordable way to go to achieve the goal of having 60 strike aircraft in each of our wings.

Right now, a typical wing's power projection element consists of 20 F-14s, 24 FA-18s, and 16 A-6s. We need to "neck-down" the different models from three to two to meet our goal. By 2010, the F-14 will be gone, and each wing will have 42 FA-18E/Fs and 18 AXs.

We are also focusing on the wing's support aircraft. The Advanced Tactical Support aircraft, proposed to replace the E-2, EA-6B, S-3, and ES-3 is not funded and the state of technology does not yet support development. In the meantime, we are investigating life-extension, sensor upgrades and new production for the E-2, and new procurement for the EA-6B. The present inventory of S-3s meets our known requirements for the next 25 years.

In the aftermath of *Desert Storm*, Naval Aviation will remain the nation's primary instrument in maintaining regional stability. In the present austere fiscal environment, we are looking for new, innovative, and cost-effective ways of doing business; we cannot continue to do business as usual. Stay on board, and keep strokin'.

An FA-18A from VFA-87 recovers aboard Theodore Roosevelt (CVN-71) during Operation Provide Comfort.

Osborn

Shadows in the Moonlight

A pilot and radar intercept officer (RIO), both highly experienced, with a fleet readiness squadron tour behind them, were on a night field carrier landing practice (FCLP) hop in an F-14 after being out of the *Tomcat* cockpit for two years. The pilot worked hard turning "fair" passes into "OKs" while the RIO struggled against FCLP boredom by scribbling down a description of each approach in landing signal officer (LSO)-type shorthand. By the fifth pass, both men were feeling comfortable in the pattern.

On No. 1's sixth try, two other *Tomcats* (401 and 402), ahead of them in the pattern, called "last pass" and switched to the tower for full-stop landings. No. 1 made a touch and go and noticed that 401 and 402 were on the downwind leg for their full-stop landings in the "low" pattern. No. 1 figured 401 and 402 were aiming for the parallel right runway since the tower had not transmitted on the LSO's frequency their intent to land on the left, FCLP, runway.

As No. 1 reached the 180-degree position, the lights for the left runway came on, 401 having already landed. There were still no transmissions by the tower or LSO concerning the status of the left runway with respect to FCLPs (such as foul-deck or clear-deck calls).

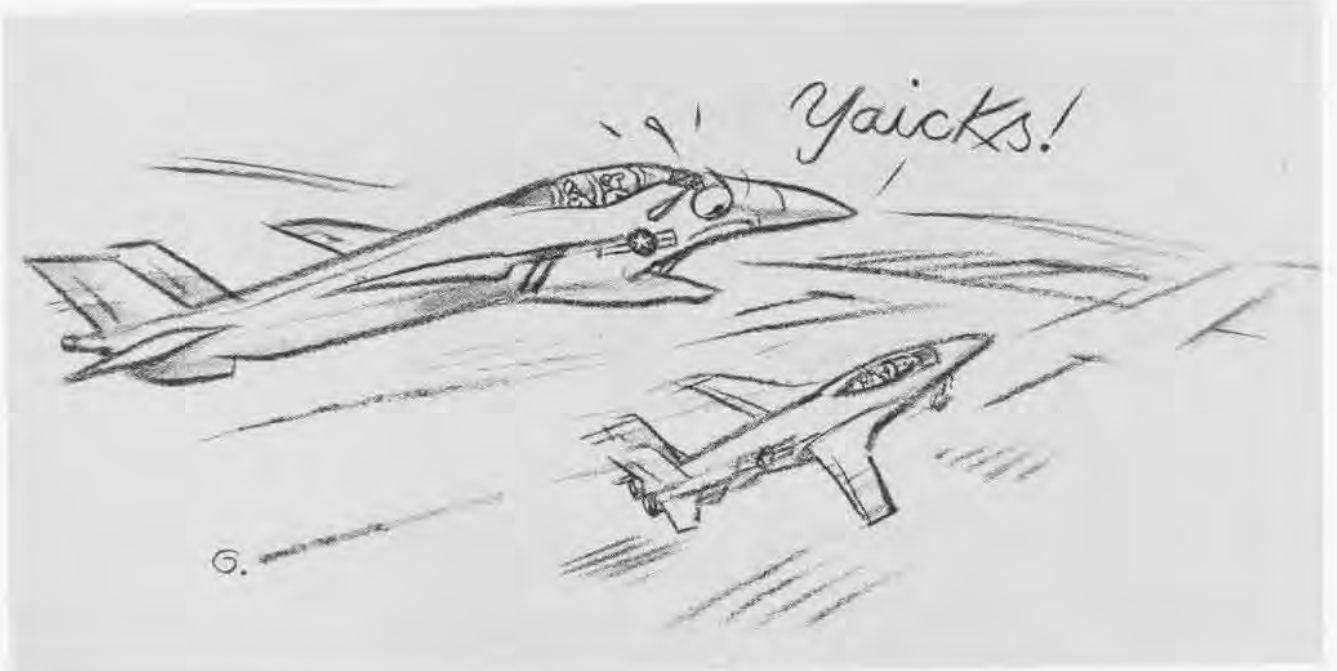
Meanwhile, 402 was at a deep 90-degree position, apparently headed for a full stop on the right runway although there were no transmissions by the tower or LSO to confirm this. No. 1, therefore, believed 402 was destined for the right airstrip although as the *Tomcat* neared the "90," the RIO became uncomfortable about 402's location. He said nothing, though, assuming that his pilot was aware of 402's position.

When No. 1 reached the "45," the RIO asked the pilot if he knew the location of 402 (now on final and beginning to disappear from view under No. 1's right wing, and no longer aligned for the right runway).

"I think he is going to the right," the pilot told the RIO.

"No, I believe he's underneath us going to the left," the RIO responded.

The pilot immediately dipped his wing to check the area. Both he and the RIO experienced the cold chill of surprise when they saw 402 only 100 feet below them! The pilot rapidly leveled the wings, added power, and waved off.



Grampaw Pettibone says:

After not flyin' for a spell, a pair of veterans were doin' their thing in a Tomcat and beginnin' to feel good in the cockpit when the "fat, dumb and happy" mindset, made famous by ole Dilbert, reared its dangerous head. Had the RIO not wondered about the whereabouts of 402, No. 1 and 402 might have had a real air-to-air engagement – in spades!

They were lucky. They admitted their complacency. It shouldn't happen again to these guys, or to you!

Prowling with a Hawkeye

They were in the Persian Gulf combat zone at night: an E-2C *Hawkeye* at 22,000 feet with all navigation equipment inoperative, except for pitot static and the back-up gyro, and an EA-6B *Prowler* coming off station after electronic warfare duty. Another E-2C asked the *Prowler* to assist the ailing *Hawkeye*. There was weather in the area and St. Elmo's fire, which may have caused the E-2C's standby compass to fail.

In the vicinity of the carrier, the *Prowler* climbed through an overcast, sighted the *Hawkeye*, and took position well off its left wing. It was difficult to keep the E-2C in sight from a distance because of cloud layers. The EA-6B slowed to 210 knots and the E-2C began to fly wing on it from about a mile away, at which point the dissimilarities between the aircraft became more vivid. The *Prowler* experienced increasing difficulty in remaining slow enough to stay with the *Hawkeye*. The ship advised the *Prowler* to guide the *Hawkeye* down through the overcast.

As the two planes descended, in and out of the layers, the *Prowler* began a slow turn to the left and suddenly went IFR (instrument flight rules) into the clouds. The *Hawkeye*, fortunately, found a hole, made its way down through it, sighted the ship, and made a safe landing.

The *Prowler*, meanwhile, was gripped by St. Elmo's fire, resulting in a "frozen" pitot static system, which came back on the line as it descended through 10,000 feet. The *Prowler* bolted on its first approach but successfully trapped on the second.

Grampaw Pettibone says:

Flyin' combat is risky enough. But you can get mangled just as easy gettin' to and from the combat zone. The Prowler crew wanted to help their shipmates, which is fine and dandy. But as one of the Prowler aircrewmen said afterwards about the formation flying effort between a jet and a turboprop aircraft, "We were wallowing around up there like an overloaded truck!" Which means to Ole Gramps they were close to a stall or worse, what with St. Elmo, dark of night, and overcast layers fillin' the sky.

Maybe this was a time say, "Unable to assist," and get help from another E-2. Besides, those Hawkeye pilots are among the finest in the fleet and can handle no-gyro approaches. Isn't that why we practice 'em? I'm not sayin', "Don't help out a shipmate," but I am sayin', "Don't push your bird beyond what it can handle."

Gramps' Mailbag

Gramps receives articles periodically which range from accounts of near accidents to letters of commendation for acts of real professionalism. If you would like to share an experience, send your letter to: Grampaw Pettibone, c/o Naval Aviation News, Bldg. 159E, Room 512, Washington Navy Yard Annex, Washington, D.C. 20374-1595.

USMC photo

An FA-18C from VMFA-235 on patrol over Persian Gulf oil fields.

Flyers Provide Comfort to Kurds, Bangladeshis

Even as most Navy and Marine Corps aviation units deployed for Operation *Desert Storm* gradually withdrew from the war zone, some soon found themselves busily engaged in relief efforts on behalf of the Kurdish refugees in northern Iraq and southern Turkey, and in reconnaissance and peacekeeping air patrols. Others paused on their trip home to help Bangladesh recover from a devastating cyclone.

With a formal cease-fire in place on April 11, the withdrawal of Naval Aviation units in the region continued. *Midway* (CV-41) returned to its home port of Yokosuka, Japan, on April 17; *America* (CV-66) returned to Norfolk, Va., on April 18. *Ranger* (CV-61) was relieved in the Arabian Sea in late April by *Nimitz* (CVN-68), which left Bremerton, Wash., on February 25 with CVW-9 aboard and swung west from the southern California operating area on March 5.

Provide Comfort

When President George Bush committed U.S. forces to provide relief and security to Kurdish refugees fleeing Iraqi forces, *Theodore Roosevelt* (CVN-71) entered the Mediterranean from the Red Sea and provided air patrols and TARPS (tactical air reconnaissance pod system) missions in support of the operation, designated *Provide Comfort*. *Guadalcanal* (LPH-7) arrived off Turkey and provided CH-46E and CH-53E helicopters from HMM-264(C) to lift relief supplies. Sigonella-based HC-4, which has been continuously supporting American efforts in one crisis or another for over a year, also dispatched three CH-53Es to augment the relief effort. Two VQ-2 EP-3Es also provided reconnaissance support to the operation. Tactical Air Control Squadron 21 aboard *Guadalcanal* supplied air traffic controllers to Silopi airfield in Turkey to direct the constant arrivals and departures of helicopters carrying relief supplies.

The potential danger involved in *Provide Comfort* was accentuated on May 7 when an A-6E crew patrolling over the refugee areas reported that it observed ground-based antiaircraft fire aimed at their aircraft on two occasions. The aircraft was not damaged. CVW-8 aircrews from *Theodore Roosevelt* were busily engaged in security patrols and reconnaissance missions over the refugee camps in Turkey and northern Iraq.

Productive Effort

As *Provide Comfort* continued, a powerful cyclone hit impoverished Bangladesh, killing an estimated 139,000 people. Amphibious Ready Group Three, transiting home from *Desert Storm* operations, was diverted to Bangladesh, arriving May 15 to assist in relief operations, designated Operation *Productive Effort*. *Tarawa* (LHA-1) launched helicopters to search for isolated survivors and carry relief supplies to affected areas. CH-46Es from HMM-265, RH-53Ds from HMH-772, SH-3Hs from HC-1 Det 3, and UH-1Ns and AH-1Ws from HMLA-169 all participated in the operation for two weeks.

Mine Clearing

Mine-clearing operations continued in the northern Persian Gulf long after the cease-fire. *LaSalle* (AGF-3) provided a deck for HM-14 MH-53Es to operate from until *New Orleans* (LPH-11) arrived to replace *Tripoli* (LPH-10), which had been damaged during the war by a mine. *Tripoli* returned to duty in early April as flagship of the mine-clearing operation. By late May, most of the more than 1,000 mines laid by Iraq had been swept.

SH-60F/HH-60H Deploys

The deployment of *Nimitz* to the Indian Ocean marks the

JO1 (SW) Gregg Snaza

CH-46Ds from an HC-11 detachment aboard Kansas City (AOR-3) approach the deck of Ranger (CV-61) in the Arabian Sea during April 1991.

first deployment of the SH-60F antisubmarine warfare helicopter, which will eventually replace the SH-3H on all carrier decks. HS-2, the first fleet squadron to transition to the new helicopter, is also deploying with two HH-60H strike rescue versions, marking the first major carrier deployment of that helicopter as well. The HH-60Hs deployed to land bases during *Desert Storm* from reserve squadrons HCSs 4 and 5 have returned to the U.S.

Forrestal's Last Deployment

Forrestal (CV-59), which maintained the readiness to deploy if needed during *Desert Storm*, got under way for her last deployment on May 30 with CVW-6 aboard. Upon return from the Mediterranean, the carrier will replace *Lexington* (AVT-16) as the Navy's training carrier.

Another MiG-Mad Marine

In addition to the three Navy aerial victories noted in *Naval Aviation News*, May-June 1991, another Naval Aviator has been credited with shooting an Iraqi aircraft during *Desert Storm*. Marine Capt. Chuck McGill, an exchange pilot assigned to the Air Force's 58th Tactical Fighter Squadron of the 33rd Tactical Fighter Wing, shot down a MiG-29 fighter on January 17, 1991, while flying an F-15C (Serial 85-0107).

A VF-84 F-14A prepares for launch from Theodore Roosevelt (CVN-71) on a TARPS reconnaissance mission over northern Iraq. VS-24 S-3Bs were used to drop processed TARPS photography to ground commanders on the scene.

MIA to KIA

The last two Americans listed as missing in action during the Persian Gulf War, Navy flyers LCdr. Michael S. Speicher and LCdr. Barry T. Cook (see *NANews*, May-Jun 91, p. 6 table), were reclassified by the Secretary of the Navy in May as killed in action, finalizing the war's combat toll of American military personnel to 146.

Corrections to May-Jun 91 Issue

Page 4: The first operational use of the AGM-84E standoff land attack missile was successfully accomplished by *John F. Kennedy*-based VAs 46, 72, and 75.

Page 5 photo: The VF-1 F-14A pictured, credited with the destruction of an Iraqi helicopter, has been identified as BuNo 162603, side number NE-103.

Page 6 table: The correct BuNo of the 09 Feb AV-8B loss is 162081.

Four Air Bases Named for Closure

Four Navy and Marine Corps air stations were among 31 major military installations nominated for closure by Secretary of Defense Dick Cheney in an April 12 announcement. The defense drawdown and declining defense budgets are cited as the driving force necessitating this action.

The four bases nominated for closure are NAS Whidbey Island, Wash.; NAS Moffett Field, Calif.; NAS Chase Field, Beeville, Texas; and MCAS Tustin, Calif. Assigned units will be relocated to other bases or disestablished.

The nominations were sent to an independent panel which will report by July 1 to President Bush, who, if he accepts the list in its entirety, will send it to Congress, which will then have 45 days to consider the recommendations. The bases will then be closed or realigned as recommended, unless Congress passes a law disapproving the list.

Air RDT&E to Realign

The Secretary of the Navy has approved a massive consolidation plan for streamlining and restructuring the Navy's research, development, test, and evaluation (RDT&E) establishment. If approved by Congress, all of the familiar air RDT&E establishments will be

PH2 Milton R. Savage

A CH-53E from HMM-264(C) lands at Zakhu, Iraq, on April 28 in support of Operation Provide Comfort.

part of a new command, the Naval Air Warfare Center.

The RDT&E establishment will be consolidated by October 1, 1991, under the Naval Research Lab and four warfare centers: Naval Air Warfare Center (NAWC), Naval Surface Warfare Center, Naval Undersea Warfare Center, and Naval Command, Control, and Ocean Surveillance Center.

NAWC will report to Commander, Naval Air Systems Command as the Navy's full spectrum RDT&E, engineering, and fleet support center for air platforms, autonomous air vehicles, missiles and missile subsystems, weapons associated with air warfare, and for sensor systems used to conduct antisubmarine warfare from air platforms.

The following activities will be disestablished and consolidated within NAWC: Naval Weapons Center, China Lake, Calif.; Naval Air Development Center, Warminster, Pa.; Naval Air Test Center, Patuxent River, Md.; Pacific Missile Test Center, Point Mugu, Calif.; Naval Air Engineering Center, Lakehurst, N.J.; Naval Air Propulsion Center, Trenton, N.J.; Naval Ordnance Missile Test Station, White Sands, N.M.; Naval Weapons Evaluation Facility, Albuquerque, N.M.; and Naval Avionics Center, Indianapolis, Ind.

NAWC will be organized into two major divisions. The Aircraft Division, primarily responsible for aircraft, engines, avionics, and aircraft support, will be located at NAS Patuxent River, Md., with operating sites at Lakehurst, N.J., and Indianapolis, Ind., and a facility at Trenton, N.J. The Weapons Division, primarily responsible for aircraft weapons and weapons systems, simulators, and targets, will have major operating sites at Point Mugu and China Lake, Calif., and a facility at White Sands, N.M.

NavAirRes to End MAU/SAU Program

In mid-March Commander, Naval Air Reserve Force, RAdm. Richard Chambers, announced that most of the squadron augmentation units (SAU) and master augmentation units (MAU) would be disestablished by September 30, 1991. The units are being cut as a consequence of budget decisions that are expected to result in the elimination of about 1,500 Selected Reserve billets nationwide.

SAUs were implemented as units that would augment designated active duty squadrons in event of mobilization. Having no aircraft of their own, they trained with their gaining units or fleet readiness squadrons (FRS). SAU aircrews were used during Operation *Desert Storm* to ferry replacement aircraft to the war zone, and at least one remained to fly combat missions. The only SAUs that are not being cut are the VS SAUs, which would fly aircraft assigned to the S-3 FRSs in event of mobilization; they are being retained because the two reserve carrier air wings have no VS squadrons assigned.

The two VP MAUs at NAS Brunswick, Maine, and NAS Moffett Field, Calif., have aircraft assigned and use them to train crews designated to augment fleet P-3C squadrons. VP MAU Brunswick was disestablished on June 30, 1991, and VP MAU Moffett, which provided one aircraft and crew for *Desert Storm*, will be disestablished by September 30, 1991.

Lex Logs Last Landing

On March 8, *Lexington* (AVT-16) trapped a C-2A *Greyhound*, the last aircraft to make an arrested landing aboard the 48-year-old carrier. The next day, *Lexington* pulled into its home port of Pensacola, Fla., ending what would be its last at-sea period.

It was not decided until March 20 that *Lexington* would not return to sea. The decision to suspend operations was made primarily because of the prohibitive cost of keeping the carrier in operation. *Lexington*, which has served as the Navy's training carrier since December 1962, is scheduled for decommissioning on November 26, 1991, and will be replaced in 1992 by *Forrestal* (CV-59). Other Atlantic Fleet carriers will be made available for carrier qualifications in 1991 while *Forrestal* makes its last deployment to the Mediterranean.

The ultimate fate of *Lexington* will be decided by the Secretary of the Navy.

The 493,760th and last landing on *Lexington* was made by a crew from VRC-40, comprised of Lt. Kathy P. Owens, Lt. Paul Villagomez, AMH1 Donnie E. Kicklighter, and AD2 Mark F. Pemrick. The same crew also made the ship's last launch.

Seahawks Mobilize for EA-6B UDP

March 11 marked an unusual event when VMAQ-4, the reserve Marine electronic warfare squadron based at NAS Whidbey Island, Wash., was mobilized and ordered to transition to a new aircraft and prepare for an overseas deployment, all in three months.

The Marine Corps Unit Deployment Program (UDP), which rotates aviation units to Japan from bases in the U.S., was strained because of Operation *Desert Storm*. As a result, the EA-6B detachment in Japan, VMAQ-2 Det X, had its six-month deployment doubled to a year while the rest of the squadron was deployed to the war zone. In order to relieve the detachment, the *Seahawks* of VMAQ-4, augmented by personnel from MAG-42 Det C, were instructed to transition from the EA-6A *Intruder* to the EA-6B *Prowler* in three months, a process that would normally take 18 months.

The *Seahawks* transferred their EA-6As to VAQ-33 at NAS Key West, Fla., and on April 2 began flight operations with three EA-6Bs. In May, three more EA-6Bs joined the squadron, which deployed to MCAS Iwakuni, Japan, in early June.

Other Marine Corps reserve squadrons activated during Operation *Desert Storm*, including HMH-772 and HMLs 771 and 776, are also being used to fill UDP commitments.

River Rattlers Retire Last Reserve Corsairs

The retirement of the A-7 *Corsair II* from the Naval Air Reserve was marked in a redesignation ceremony held April 13 at NAS New Orleans, La., when the *River Rattlers* of VA-204 received the designation VFA-204. The redesignation was official as of May 1. A granite tombstone marking the event was paraded in a "funeral procession" complete with a Dixieland jazz quartet.

VFA-204 is transitioning to the FA-18A *Hornet* and received its first strike fighter in March

Grim Watchdogs Become Greywolves

The *Grim Watchdogs* of VAQ-142 were officially disestablished at NAS Whidbey Island, Wash., on March 31, with the ceremony held on April 30. The VAQ-142 personnel and aircraft then formed the cadre of a new electronic warfare "aggressor" squadron, VAQ-35, which was officially established on June 1, also at NAS Whidbey Island.

The *Greywolves* of VAQ-35 will operate EA-6B *Prowlers* to train shipboard radar operators in countering electronic jamming. VAQ-35 joins VAQs 33 and 34 as part of the Fleet Electronic Warfare Support Group. The use of the EA-6B in this role will allow the retirement by October 1991 of the ancient ERA-3B *Skywarriors* operated by VAQs 33 and 34.

VAQ-142 was established on June 1, 1988, as the Navy's 13th operational EA-6B squadron and made one Mediterranean deployment as part of CVW-6 aboard *Forrestal* (CV-59) during 1989-90. On October 1, 1990, the *Grim Watchdogs* were assigned to CVW-13 until the wing's disestablishment in January 1991. Cdr. Brian Moss was the last C.O. of VAQ-142.

F-14A+ = F-14B

Effective May 1, all F-14A *Tomcats* which had undergone the A+/A(Plus) conversion were redesignated F-14B. Redesignation was required because the F-14A+/F-14A(Plus) designations were not authorized type model/series formats nor compatible with logistics computer program formats.

The new F-14B designation is not to be confused with the F-14B prototype Buno 157986, which was first flown in 1973 as a proposed follow-on to the F-14A but never entered production. The aircraft did, however, serve as an engine development platform for the F-14A+ and F-14D.

In another development, two F-14Ds, BuNos 163415 and 163416, have been redesignated NF-14D to reflect their permanent test configuration.

Established...

VS-35

VS-35 was established at NAS North Island, Calif., on April 4, 1991, as the Navy's newest *Viking* squadron. Initially equipped with the S-3A, the squadron will soon transition to the S-3B. The *Blue Wolves* have been assigned the tail code VS pending assignment to a West Coast carrier air wing. Cdr. David G. Heine is the first C.O. of VS-35, the third S-3 squadron to bear that designation.

VQ-5

VQ-5 was established at NAS Agana, Guam, on April 15 as the Navy's first ES-3A squadron. Detachments from VQ-5 will eventually fill the gap in Western Pacific carrier-based electronic reconnaissance created when the EA-3Bs of VQ-1 were retired from carrier operations in 1987. VQ-5's first skipper is Cdr. John Teates.

VR-54

VR-54 was established at NAS New Orleans, La., on June 1 as the Naval Air Reserve's first C-130 fleet air logistics support squadron. Cdr. Charles White, Jr., is the first C.O. of the *Revelers* which will eventually operate six new C-130T *Hercules* transports.

Disestablished...

VP-19

A May 17 ceremony marked the disestablishment of VP-19 (which will be official on August 31) at NAS Moffett Field, Calif., after 40 years of active service. Cdr. Richard E. Brooks is the last C.O. of *Big Red*.

VP-19 was established as a reserve squadron at NAS Livermore, Calif. It later moved to NAS Oakland and was redesignated VP-871. Called to active duty on April 17, 1951, for Korean War service, the squadron acquired its *Big Red* nickname as it dropped red flares over Korea from its P4Y-2 *Privateers* to illuminate targets for night strikes.

Big Red was redesignated VP-19 on February 4, 1953, transitioned to the P2V-5 *Neptune*, and moved to NAS Alameda, Calif. In 1963, VP-19 transitioned to the P-3A *Orion* and moved to NAS Moffett Field. Following transition to the P-3B, the squadron flew many missions in support of operations off Vietnam and during the *Pueblo* crisis. In 1975, VP-19 became the first squadron to operate the P-3C Update I.

After decades of flying all over the Pacific and Indian oceans, VP-19 capped its history with combat missions in the Persian Gulf during *Desert Storm*.

VP-44

VP-44 was disestablished on May 31 at NAS Brunswick, Maine, after 40 years of service. Cdr. Alan M. Harms was the last C.O. of the *Golden Pelicans*.

Established on January 31, 1951, at NAS Norfolk, Va., as part of the Korean War build-up, VP-44, the fourth squadron so designated, was equipped as a seaplane squadron operating the PBM *Mariner*. In 1952, it became the first squadron to operate the P5M-1 *Marlin*, and in 1961 became a land-based squadron with the P2V *Neptune*. At NAS Patuxent River, Md., in August 1962, VP-44 and VP-8 became the fleet's first P3V-1 (P-3A) squadrons, responding that fall to the Cuban Missile Crisis. VP-44 moved to NAS Brunswick in 1970.

In 1978, VP-44, the Navy's last fleet P-3A squadron, became the Navy's first P-3C Update II squadron. VP-44 has ranged all over the Atlantic and Mediterranean, with one 1980-81 deployment to Kadena, Okinawa, providing *Harpoon*-capable aircraft in support of carrier battle groups in the Indian Ocean. VP-44 also became the first squadron to deploy the revolutionary APS-137 Inverse synthetic aperture radar to the Atlantic and Mediterranean.

VP-48

A May 23 ceremony marked the disestablishment of VP-48

(which will be official August 31) at NAS Moffett Field, Calif. Cdr. Chalker W. Brown is the last skipper of the *Boomers*.

VP-48 started out as reserve squadron VP-731 that was called to active duty on October 3, 1950, for service in the Korean War. Flying PBM-5 *Mariner* seaplanes, the squadron made three deployments to the war zone. On February 4, 1953, VP-731 was redesignated VP-48, transitioning to the P5M-1 *Marlin* in June 1954, followed by the P5M-2 (SP-5B) in 1960. The *Boomers* made two deployments to Vietnam in support of the *Market Time* interdiction effort before changing home port from NAS North Island, Calif., to NAS Moffett Field and transitioning to the P-3A *Orion*.

VP-48 made three more deployments to the war zone before transitioning to the P-3C in 1972, and became the first P-3C squadron to deploy to the western Pacific. The *Boomers* operated all over the Pacific and Indian oceans over the next two decades in antisubmarine warfare, antishipping, surveillance, and rescue roles, transitioning to the P-3C Update III retrofit version in 1989.

VA-122

VA-122 ended 41 years of service to the fleet when it was officially disestablished on May 31. The *Flying Eagles*' last C.O., Capt. Jeffrey Harrison, closed out the long history of the A-7 fleet readiness squadron in a ceremony held April 5 at NAS Lemoore, Calif.

The squadron was established on May 25, 1950, as VC-35, a unit that provided night-attack and electronic countermeasures detachments of AD *Skyraiders* to carriers, seeing extensive action over Korea. Those

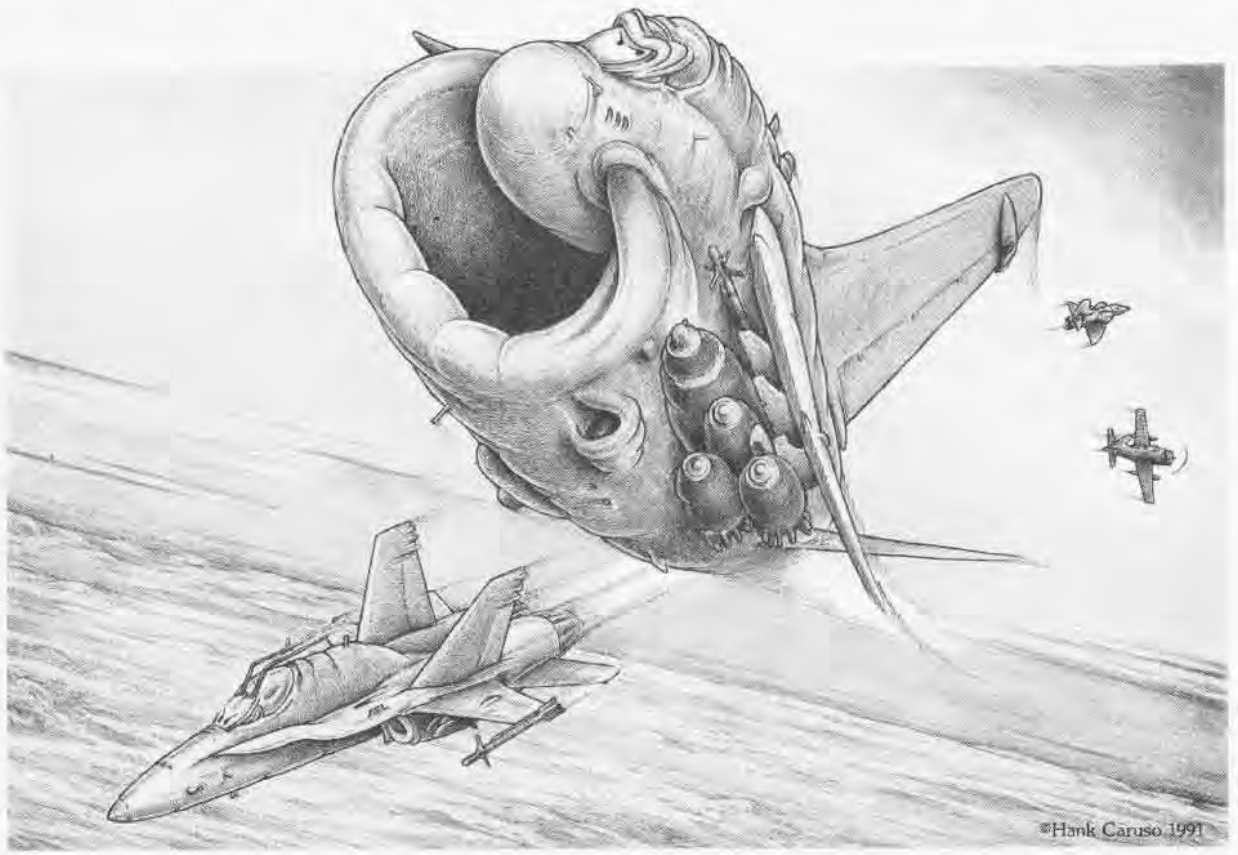


Illustration © Hank Caruso

Passing on the Spirit..."When I was asked to create a commemorative lithograph for the disestablishment of VA-122, my instructions were simply to show the continuity of the light attack community spirit – from the A-1 "Spad" and A-4 *Skyhawk*, through the A-7, and on to the FA-18 *Hornet*. As the picture began to take shape, however, I realized that the A-7 seemed to be drawing itself – not as a "retiree" but as a player, still confident and capable of hitting hard and deep. The *Hornet* will establish its own heritage as it matures in its operational roles. But, for now, it's still an adolescent when compared with the *Corsair II*, which has achieved the status of legend in the light attack community. Although the spirit behind the mission may have been passed, the legend remains where it belongs – with the A-7." *Hank Caruso*

detachments continued through the 1950s, with the squadron being redesignated VA(AW)-35 on July 1, 1956. On June 29, 1959, the unit was redesignated as VA-122 and became the Pacific Fleet's replacement training squadron for the AD (A-1), a role that continued until 1967, just before attack "Spads" were phased out of the fleet in in 1968.

Receiving the Pacific Fleet's first A-7A *Corsair II* on November 15, 1966, VA-122 began training pilots and technicians for the A-7, with the squadron soon becoming known as "Corsair College," training over 5,000 pilots and 50,000 technicians to fly and fix the A-7. With the demise of VA-125 in 1977 and VA-174 in 1988, VA-122 assumed the entire A-7 training load, which gradually diminished as squadrons transitioned to the FA-18 or were disestablished. Training for the few *Corsair IIs* remaining in VAQ-34 and various test and development centers was assumed by VAQ-34, which itself will soon convert to the FA-18.

NANEWS will farewell VAs 46 and 72 and the A-7 in the next issue.

For the Record...

- On April 22, McDonnell Douglas delivered the **1,000th *Hornet*** strike fighter built at its St. Louis, Mo., facility. The aircraft, FA-18D BuNo 164327, was delivered to VMFA(AW)-242 at MCAS El Toro, Calif.
- The **V-22** test fleet had accumulated over 500 hours of flight time on April 29 while conducting its Flying Qualities and Performance Evaluation. Operational tests by the Marine Corps are planned for the summer.
- The **HS-3** *Tridents* at NAS Jacksonville, Fla., commenced transition in April from the SH-3H to the **SH-60F**. As the first operational East Coast SH-60F squadron, HS-3 will be on line with six *Seahawks* by October, and will eventually deploy with two **HH-60H** strike rescue helicopters as well.
- **HS-17**, recently assigned to the now-disestablished CVW-13, will be disestablished on July 2, 1991, in a ceremony at NAS Jacksonville, Fla.
- **VP-92**, home-based at NAS South Weymouth, Mass., deployed to NAS Bermuda on January 26, becoming the first reserve squadron to assume the duties of **PATRON Bermuda**. Previously a deployment site for active-duty VP squadrons, Bermuda will be served by rotating reserve squadrons.
- Three reserve patrol squadrons are transitioning this year from the P-3B to the **P-3C**, making five of the 13 reserve VP squadrons equipped with the P-3C. **VP-65** at NAS Point Mugu, Calif., will operate the non-update version; **VP-68** at NAF Washington, D.C., is receiving the Update I version; and **VP-92** at NAS South Weymouth, Mass., is receiving the Update II version.
- **HMMs 163 and 166**, MCAS Tustin, Calif., are the first squadrons to receive the **"Bullfrog"** version of the **CH-46E** *Sea Knight* helicopter. The "Bullfrog" features enlarged sponsons which double the fuel capacity, allowing for longer range. Flotation devices and a modified flight computer are also included in the helicopter.
- ***Kitty Hawk*** (CV-63), the fourth carrier to undergo the Service Life Extension Program, sailed from Philadelphia Naval Shipyard on March 29 on sea trials, the first time at sea in three and one-half years.
- **Naval Aviation Depot, Pensacola**, Fla., rolled out a T-2C and a TA-4J on April 30, the last fixed-wing aircraft to undergo depot-level maintenance at Pensacola, which will now service only rotary-wing aircraft. The TA-4J was the last of 2,776 *Skyhawks* to be refurbished there.
- **Naval Aviation Depot, Norfolk**, Va., will soon be the sole depot for overhauling **F-14** *Tomcats*. The NADep at NAS North Island, Calif., has inducted its last F-14 for Service Depot-Level Maintenance.
- The remains of **LCdr. Nicholas M. Carpenter** were buried on April 19 at Arlington National Cemetery, Va., after identification in January from a set of 20 remains returned by Vietnam in September 1990. LCdr. Carpenter was shot down over North Vietnam on June 24, 1968, while flying a VA-35 A-6A from *Enterprise* (CVAN-65).
- **VS-37** was assigned from CVW-14 to **CVW-15** as of April 1, 1991.
- Tail codes **SS** and **ET** have been assigned to **VQs 5 and 6**, respectively, for use on their ES-3A aircraft which will enter service this year.

VFA-146 FA-18Cs arrived in the Persian Gulf region in March aboard Nimitz.

The Year in Review 1990

By Judith A. Walters

In 1990, the euphoria of Soviet *glasnost* and *peristroika* and the resulting lessening of tensions between the U.S. and the Soviet Union gave way to a more sober analysis of the world situation. Continued nationalistic upheaval in the Soviet republics made the declining Soviet economy even more problematic and threatened to devolve the Soviet Union itself. Old ethnic antagonisms resurfaced in eastern Europe as countries took their first tentative steps from socialism to capitalism. In South Africa, Nelson Mandela, freed after 27 years, brought hope to the country's blacks, but fighting between the African National Congress and the Zulu-based Inkatha movement continued. In Liberia, too, armed conflict erupted and the U.S. Navy and Marines evacuated U.S. citizens and other noncombatants during Operation *Sharp Edge*.

Yet none of these problems involved a conflict between the U.S. and the Soviet Union. This allowed for a reduction in troop strength, especially in Europe, and a climate for a decrease in arms production.

Several of the Navy's most expensive aircraft procurement programs did not survive the year. The Navy terminated its contract with Lockheed for the P-7A, which was to replace the P-3 maritime patrol aircraft. Funds for the V-22 *Osprey*, however, not in the president's budget, were restored by Congress for continued test and development. By year's end, allegations of the Navy's mismanagement of the A-12 program ultimately resulted in its cancellation by the Secretary of Defense in 1991.

A new *Nimitz*-class carrier, *George Washington* (CVN-73), was launched soon after *Coral Sea* (CV-43) was retired. Faced with declining budgets, the new Chief of Naval Operations (CNO), Admiral Frank B. Kelso, planned to eventually decrease the Navy's deployable carrier force to 12.

In space, NASA, not directly effected by foreign politics, continued sending up shuttles with Navy personnel onboard, and the shuttle crews deployed the Navy's Syncom communications satellite and retrieved the Navy's Long-Duration Exposure Facility.

The new geopolitical alignment, however, required a new defense policy. The president stressed the necessity of deterrence, crisis response, a forward presence, and force reconstruction as its key points. "Reduced U.S.-Soviet tensions," said Adm. Kelso, "will allow greater freedom in deployment patterns and the shifting of resources among theaters in response to world events."

The new policy did not languish in theory for long. Iraq's invasion of Kuwait dominated U.S. attention for the rest of the year. During Operation *Desert Shield*, the largest military build-up since the Korean war, troops from the U.S. and United Nations (UN) countries massed to protect Saudi Arabia and the Persian Gulf states from Iraqi might. Rather than being an adversary in the crisis, the Soviet Union, by and large, supported U.S. and UN policy.

As the year ended, the world was counting down to the 15 January UN deadline. The ultimatum, if not accepted, meant war with Iraq.

January

01 The two subspecialty ratings for Aviation Support Technicians – Electrical Systems (ASE) and Hydraulic Systems (ASM) – were merged to form the general rating: Aviation Support (AS).

09-20 While in space, the crew of the shuttle *Columbia* deployed a Navy Syncom communications satellite and

George Washington (CVN-73) was christened at Newport News, Va., in July.

Cdr. John Leenhouts

An A-7 pilot yanks and banks over the desert during Desert Shield.

retrieved the Navy's Long-Duration Exposure Facility. The mission set a new duration record of 10 days, 21 hours. The crew commander was Navy Capt. Dan Brandenstein, LCdr. James D. Wetherbee was the pilot, and the mission specialists were Marsha Ivins, Bonnie Dunbar, and G. Davis Low.

23 Secretary of Defense Dick Cheney announced that the aircraft carrier *Independence* (CV-62) would replace the forward-deployed *Midway* (CV-41) in Yokosuka, Japan, sometime in 1991.

25 A helicopter crew from *Guadalcanal* (LPH-7) rescued three fishermen after their boat went under three miles off Cape Henry, Va.

25 Helicopter Anti-Submarine Squadron Light (HSL) 45, Detachment 10; HSL-33, Detachment 3; and HSL-35, Detachment 1 responded to a distress call from the Chinese merchant vessel *Hauzhu*, reported to be sinking 40 miles off the northern coast of the Philippines. Nineteen crew members were recovered.

February

25 Patrol Squadron (VP) 6, based at NAS Barbers Point, Hawaii, welcomed the arrival of the first P-3C Update II.5 to be assigned to the Pacific Fleet. The aircraft was the first of eight to be transferred to VP-6 during the transition from the P-3B (Mod) aircraft.

25 The Pacific Missile Test Center, Point Mugu, Calif., retired its last non-drone F-4 *Phantom II* (BuNo 153074) called "Bloodhound 90." The aircraft had been used for test and development during its entire career.

March

08 Embarking on *Eisenhower* (CVN-69) for a Mediterranean/Red Sea cruise, VFs 142 and 143 became the first deployed F-14A+ squadrons.

09 NAS Whidbey Island, Wash., received its first rewinged A-6E. The new wing is largely made of composite material, but the moving surfaces, such as the flaps, are made of aluminum. The new wing is designed to replace the aging metal wings and is expected to be stronger and longer lasting with increased resistance to corrosion.

21 The SH-2G helicopter was introduced at a flyout ceremony at the Kaman Aerospace Corporation's production facility in Bloomfield, Conn. The SH-2G is an upgraded version of the SH-2F, which is part of the Light Airborne Multi-Purpose System (LAMPS) MK I system. Improvements include a sonobuoy data processing system, changes in the tactical navigation system, more powerful engines, composite rotor blades, an infrared target detection system, and several countermeasures systems.

22 Crew 10 of reserve Patrol Squadron 64, Willow Grove, Pa., completed the last antisubmarine warfare mission conducted by a Navy P-3A *Orion* aircraft.

23 Helicopter Anti-Submarine Squadron 10 graduated its first class of antisubmarine warfare crewmen trained to operate the SH-60F.

23 The Navy accepted the first production F-14D *Tomcat* at a rollout ceremony at Grumman's Calverton, L.I., N.Y., facility. The F-14D differs from the F-14A in engine, avionics, and weapon systems.

27 Helicopter Anti-Submarine Squadron 2 became the first Navy squadron to receive the SH-60F inner-zone combat aircraft for operational deployment with the fleet at a ceremony at NAS North Island, Calif. The SH-60F, made by Sikorsky, was a derivative of the SH-60B *Seahawk* Light Airborne Multi-Purpose System (LAMPS) MK III helicopter.

April

02 Secretary of Defense Dick Cheney announced that President Bush had nominated VAdm. Jerome L. Johnson, Commander, U.S. Second Fleet, for Vice Chief of Naval Operations. Johnson, a Naval Aviator, was also nominated for promotion to the rank of admiral.

04 The only known remaining F3F-2 was salvaged off the coast of Del Mar, Calif., from a depth of 1,800 feet.

17 The Lockheed Aeronautical Systems Company formally delivered the last P-3 *Orion* (BuNo 163925) for the Navy in a ceremony at Palmdale,

JO1 Kip Burke

HMM-261(C) CH-46Es and a CH-53D aboard Saipan (LHA-2) rehearse Operation Sharp Edge off Liberia in June 1990.

Calif. It was the 548th P-3 accepted by the Navy since deliveries began in August 1962.

20 Secretary of Defense Cheney announced President Bush's nomination for Commander-in-Chief, U.S. Atlantic Command, and Supreme Allied Commander, Atlantic: Adm. Leon A. Edney, Vice Chief of Naval Operations. Adm. Edney is a Naval Aviator.

20 The remains of nine crew members of Patrol Squadron 1, who crashed on Vancouver Island, British Columbia, while on a routine training mission on November 4, 1948, were finally laid to rest at Arlington National Cemetery. After years of failed efforts, family members finally turned to then-Vice President George Bush, a former Naval Aviator. He and former Secretary of the Navy William Ball III saw to it that an expedition was ordered and the remains recovered.

24-29 The space shuttle *Discovery* was launched from Cape Canaveral, Fla. The mission was commanded by Loren Shriver. The crew consisted of pilot Col. Charles F. Bolden, Jr., and mission specialists Navy Capt. Bruce McCandless, naval reservist LCdr. Kathryn Sullivan, and Steven Hawley. As part of its mission, the crew deployed the Hubble space telescope on 25 April.

26 *Coral Sea* (CV-43) was decommissioned at a ceremony held at NS Norfolk, Va. Chief of Naval Operations Adm. C. A. H. Trost delivered the farewell speech. *Coral Sea* was commissioned in October 1947.

JO3 Oscar Sosa

A VAW-121 E-2C is readied for launch from Dwight D. Eisenhower (CVN-69) during Fleet Ex '90.

May

10 Six pioneers in Naval Aviation were enshrined in the Naval Aviation Museum Foundation's Hall of Honor at NAS Pensacola, Fla. They were Capt. Henry C. Mustin, Igor I. Sikorsky, Capt. Frank A. Erickson, George A. Spangenberg, retired Adm. James S. Russell, and retired RAdm. Alan B. Shepard.

10 The only F-14 *Tomcat* on public display was dedicated at the National Museum of Naval Aviation during a special ceremony.

15 Because of a system design change and new capabilities in the AIM-7 missile, the Naval Air Systems Command established the model designation AIM-7R.

16 The Naval Air Systems Command established the model designation BQM-147A for a 42-pound remotely/automatically piloted air vehicle. The BQM-147A is a delta platform flying wing with a 99-inch span.

17 Because of a system design change and new capabilities in the RIM-7 missile, the Naval Air Systems Command established the model designation RIM-7R.

18 The Naval Air Systems Command established the model designation BQM-145A for the medium-range unmanned aerial vehicle. It is a programmable reconnaissance drone, which can be launched from various tactical aircraft as well as from the ground.

18 The two-seat night-attack F/A-18D *Hornet* was introduced into service at MCAS El Toro, Calif. It will replace the A-6 *Intruder* in the Marine Corps.

June

03 Three days after President Bush ordered an amphibious task force off the coast of Liberia; *Saipan* (LHA-2), *Ponce* (LPD-15), *Sumter* (LST-1181) began their watch over the events in Liberia ready to assist any additional evacuation of U.S. citizens should they be threatened by the rebel uprising there.

05 The Grumman Corporation inducted the first F-14A for remanufacture into an F-14D. It was the first of four to be converted under FY-90 funding.

05 An SH-60F from VX-1 rescued two downed aviators from the aircraft carrier *Kennedy*. The SH-60F was being evaluated as a replacement for the SH-3 *Sea King*, the Navy's aging carrier-based antisubmarine warfare/sea search and rescue helicopter.

24 The wreckage of the Navy's rigid airship *Macon* (ZRS-5) was located by the Navy submersible *Sea Cliff* (DSV-4) off the coast of Point Sur, Calif., where the airship had crashed on February 12, 1935. At the time, *Macon* was carrying four Curtiss F9C-2 *Sparrowhawk* biplane fighters, some of which were spotted near *Macon*'s wreckage.

26 The first ship launch of the Standoff Land Attack Missile was conducted from a *Harpoon* canister aboard the guided missile cruiser *Lake Champlain*. The launch was controlled from a LAMPS MK III helicopter, with video images downlinked to the ship's command information center via the helo's Walleye data link pod. The test was conducted at the Pacific Missile Test Center's sea test range.

July

12 Cdr. Rosemary Bryant Mariner relieved Cdr. Charles Hughes Smith as C.O. of Tactical Electronic Warfare Squadron 34. Cdr. Mariner is the first U.S. military woman selected to command an operational aviation squadron.

16 The largest earthquake to strike the Philippines in 14 years rocked Manila and destroyed many northern areas of Luzon. Marine helicopters assigned to MAGTF 4-90 and HMM-164(C) hauled food, water, and medical supplies. CH-46E, CH-53D, and CH-53E helicopters were used for transports, while searches for survivors were conducted by UH-1N and AH-1W helicopters and OV-10 observation planes. Navy SH-3G helicopters assigned to Fleet Composite Squadron (VC) 5 at NAS Cubi Point, R.P., also flew resupply and medical missions. The VC-5 helos

delivered cement-cutting saws and trained operators to help free victims trapped in the rubble.

20 The Navy terminated a contract with Lockheed Aeronautical Systems for the P-7A for default. The P-7A, formerly known as LRAACA (long-range, air antisubmarine warfare-capable aircraft), was the planned replacement for the P-3 maritime patrol aircraft.

21 First Lady Barbara Bush broke the traditional bottle of champagne over the bow of the Navy's new *Nimitz*-class carrier *George Washington* (CVN-73) at the ship's christening ceremony held at Newport News, Va., where the president was the principle speaker. *Washington* is the Navy's seventh nuclear-powered carrier.

PH2 Mark Austin

24 V-22 *Osprey* number two flew into NAS Patuxent River, Md., for a three-day stay to complete air speed calibration and telemetry compatibility testing.

31 Combat Support Squadron (HC) 9, the Navy's only combat search and rescue helicopter unit, was disestablished and its mission passed to two Navy reserve special operations squadrons: HCS-5 at NAS Point Mugu, Calif., and HCS-4 at NAS Norfolk, Va. HC-9 was established in August 1975.

August

02 The NAVSTAR navigation satellite was boosted into orbit by a Delta rocket. This was the latest in a series of spacecraft enabling U.S. military units to pinpoint their location.

05 Operation *Sharp Edge* was authorized by the State Department to evacuate noncombatants caught in the civil war in Liberia. *Saipan* (LHA-2) and other ships were stationed off the Liberian coast. Marines from the 22nd Marine Expeditionary Unit (MEU) were flown into the American embassy compound in Monrovia, Liberia. The MEU's air combat element, HMM-261(C), was comprised of CH-46Es from HMM-261, CH-53Ds from HMH-362, UH-1Ns and AH-1Ts from HMLA-167, and AV-8Bs from VMA-223. On 28 November, a ceasefire was accepted by the opposing Liberian factions and on 30 November the limited evacuation of noncombatants from Monrovia terminated, with a total of 2,609 evacuated, including 330 U.S. citizens. Operation *Sharp Edge* ended on January 9, 1991.

07 The EP-3E *Aries II*, an electronic version of the P-3C, arrived at NAS Patuxent River, Md., to begin four months of extensive testing. It will replace the EP-3E *Aries I* in VQs 1 and 2.

10 A deactivation ceremony for VMFP-3 at MCAS El Toro, Calif., ended the service of the RF-4B *Phantom II* for the Marine Corps.

Artist's conception of the A-12.

17 The Navy released selected details on the A-12 *Avenger*, including an artist's rendering of the aircraft. The *Avenger* was to replace the A-6E *Intruder*, the Navy's primary medium attack aircraft for the past 27 years. Low-observable technology, greater speed, and advanced weapon and survivability systems were to enable the A-12 to penetrate the most sophisticated air defenses. The *Avenger* was

CWO2 Ed Bailey

A CH-53E Super Stallion approaches Saratoga (CV-60) on station in the Red Sea in support of Desert Shield.

designed to be effective against all known and projected threat weapon systems and, like the A-6E, was to be manned by two crewmen, a pilot and a bombardier navigator.

21 The dedication ceremony for the Blue Angel Atrium was held at the National Museum of Naval Aviation, NAS Pensacola, Fla. The seven-story glass and steel atrium features four *Blue Angel* A-4F *Skyhawks* suspended from the ceiling in diamond formation.

29 Secretary of the Navy H. Lawrence Garrett III announced plans to decommission the training carrier *Lexington* (AVT-16) in mid-1991. *Forrestal* (CV-59) is to replace *Lex* as the Navy's only training carrier. *Forrestal*, homeported in Mayport, Fla., will then be reassigned to Pensacola, Fla.

PH1 David J. Cummings

Abraham Lincoln (CVN-72) undergoes post-shakedown modifications at Newport News Shipbuilding and Dry Dock Co., Va., in May 1990.

September

04 Secretary of the Navy H. Lawrence Garrett III announced that the aircraft carrier *Kitty Hawk* (CV-63) was to change her home port to San Diego after completing the Navy's Service Life Extension Program in Philadelphia, Pa.

25 *Abraham Lincoln* (CVN-72), the Navy's sixth nuclear-powered *Nimitz*-class carrier, left NAS Norfolk, Va., for her new home port of NAS Alameda, Calif.

October

04 The first A-6 composite wing aircraft rebuilt by Naval Aviation Depot (NADep), Norfolk, Va., was delivered to Attack Squadron 176. Forty-four aircraft were scheduled to receive the new wing at NADep Norfolk. The remaining aircraft would receive their new wings at NADep Alameda, Calif.; Grumman at Calverton, N.Y.; Grumman at St. Augustine, Fla.; and Boeing Military Aircraft Company in Wichita, Kans.

06-10 The space shuttle *Discovery* rocketed into orbit from Cape Canaveral and dispatched the European-built robot Ulysses from its cargo bay. The Ulysses spacecraft was to explore the polar regions of the sun. *Discovery*'s five-man crew consisted of: commander Navy Capt. Richard N. Richard, copilot Marine Lt. Col. Robert D. Cabana, and mission specialists Navy Capt. William M. Shepherd, Coast Guard Cdr. Bruce Melnick, and Air Force Maj. Thomas D. Akers.

07 The only known remaining TBD *Devastator* was located in 500 feet of water off the coast of Miami, Fla.

12 The West Wing of the National Museum of Naval Aviation was dedicated in a ceremony at Pensacola, Fla. The new wing is devoted to carrier aviation and the WW II era.

12 Twenty years of service in the Naval Air Reserve for the P-3A *Orion* came to an end when VP-69 at NAS Whidbey Island, Wash., transferred its last P-3A to the National Museum of Naval Aviation, NAS Pensacola, Fla. The P-3B will replace VP-69's P-3As.

31 The only known remaining SB2U *Vindicator* was salvaged from 130 feet of water in Lake Michigan.

November

15-20 The space shuttle *Atlantis* rocketed into orbit carrying a reconnaissance satellite and five military astronauts. The commander of the mission was Air Force Col. Richard Covey, with pilot Navy Cdr. Frank Culbertson, and mission specialists Air Force Lt. Col. Carl Meade, Marine Col. Robert Springer, and Army Maj. Charles Gemar.

16 The Navy's newest fighter, the Grumman F-14D *Super Tomcat*, was formally accepted for fleet service in a ceremony at NAS Miramar, Calif.

December

04 Marine Maj. Gerald Hammes, piloting V-22 *Osprey* number four, made the first shipboard landing on board *Wasp* (LHD-1). Hammes was assisted by Boeing Helicopter's chief test pilot Dick Balzer. On 7 December, Marine Maj. Robert Price and Bell Test Pilot Dick Peasely landed aircraft number three on *Wasp*.

14 Secretary of Defense Dick Cheney stated in a memo to Navy Secretary H. Lawrence Garrett III that the Department of Defense would cancel the troubled A-12 aircraft unless the Navy proved the plane was worth buying. The new aircraft was being developed by the McDonnell Douglas and General Dynamics corporations. It was to replace the A-6 *Intruder*.

2 Aug
Iraq invaded Kuwait. At the time, eight U.S. Navy Middle East Force ships were in the Persian Gulf. The carrier battle group of *Independence* (CV-62), with CVW-14 aboard, was in the Indian Ocean and *Dwight D. Eisenhower* (CVN-69), with CVW-7, was in the Mediterranean.

2 Aug
Independence's battle group was directed to proceed to the northern Arabian Sea in support of Operation *Desert Shield*.

5 Aug
Independence's battle group arrived on station in the Gulf of Oman.

7 Aug
Saratoga (CV-60) left the U.S. for a previously scheduled deployment to the eastern Mediterranean, with CVW-17 aboard.

7 Aug
Eisenhower and her battle group transited the Suez Canal.

8 Aug
Eisenhower entered the Red Sea.

15 Aug
Leading a carrier battle group, *John F. Kennedy* (CV-67) deployed from her home port, Norfolk, Va., with CVW-3 aboard. The battle group would be available for potential relief of the *Eisenhower* battle group or additional tasking to be determined by the situation in the Middle East.

16 Aug
Consistent with UN Security Council Resolution 661, a multinational maritime intercept operation involving Naval Aviation forces began intercepting ships going to or from Iraq and Kuwait.

22 Aug
Saratoga transited the Suez Canal to take up her station in the Red Sea where she would relieve *Eisenhower* who would then proceed home.

30 Aug
Kennedy's battle group transited the Strait of Gibraltar en route to the Mediterranean Sea.

7 Sep
Amphibious assault ships *Iwo Jima* (LPH-1) and *Guam* (LPH-9) transited the Suez Canal.

14 Sep
Nassau arrived in the Gulf of Oman.

14 Sep
Kennedy's battle group transited the Suez Canal into the Red Sea.

16 Sep
Iwo Jima and *Guam* arrived in the Gulf of Oman.

The A-7E began its last deployment in response to the Iraqi invasion of Kuwait with VAs 46 and 72.

Cdr John Leenhouts

3 Sep
Eisenhower transited the Strait of Gibraltar en route to home port.

6 Sep
Amphibious assault ship *Nassau* (LHA-4) transited the Suez Canal.

1 Oct
Independence transited the Strait of Hormuz en route to the Persian Gulf.

3 Oct
Independence conducted flight operations in the Persian Gulf. She was the first carrier to do so since 1974, when *Constellation* (CV-64) operated there.

4 Oct
Independence left the gulf after spending three days in its relatively confined and shallow waters. A Pentagon spokesman said the aircraft carrier had successfully completed its mission which was "to demonstrate to our friends and allies in the region that it is possible to put a carrier in the Gulf and carry out operations."

8 Oct
The two U.S. Marine Corps UH-1N *Huey* helicopters based on the amphibious assault ship *Okinawa* (LPH-3) in the Gulf of Oman disap-

PH1(AC) Scott Allen

VMA-331 AV-8B Harriers recover and refuel aboard Nassau (LHA-4) during Operation Desert Shield.

peared with eight men aboard during "routine night training operations." No survivors were found.

28 Oct

U.S. Marines from the amphibious transport ship *Ogden* (LPD-5) boarded the Iraqi vessel *Amuriyah*, bound for Iraq through the gulf. The vessel refused to halt despite summons from U.S. and Australian ships. The allied ships fired shots across *Amuriyah*'s bow and warplanes from *Independence* buzzed low in warning passes. The Marine boarding party found no banned cargo and the Iraqi craft was allowed to proceed.

1 Nov

Midway (CV-41), with CVW-5 aboard, replaced *Independence* in the northern Arabian Sea.

8 Nov

President Bush announced a decision to double the number of carrier battle groups deployed in support of Operation *Desert Shield*. *Ranger* (CV-61) with CVW-2, *America* (CV-66) with CVW-1, and *Theodore Roosevelt* (CVN-71) with CVW-8 were scheduled to be on station by 15 January 1991. The three were to join *Saratoga*, *Kennedy*, and *Midway* which had replaced *Independence*.

15 Nov

U.S. and Saudi forces began *Imminent Thunder*, an eight-day combined amphibious landing exercise in northeastern Saudi Arabia which involved about 1,000 U.S. Marines, 16 warships, and more than 1,100 aircraft. Close air support was provided by Marine aircraft as well as planes from the carrier *Midway*, which had entered the gulf from the northern Arabian Sea for the exercise.

29 Nov

The U.N. Security Council approved a resolution authorizing the use of military force unless Iraq vacated Kuwait by 15 January 1991.

8 Dec

Ranger, with CVW-2 aboard, departed San Diego, Calif., on an unscheduled deployment in support of *Desert Shield*.

20 Dec

Independence returned to San Diego home port from her Persian Gulf deployment.

21 Dec

An Israeli-chartered liberty ferry shuttling 102 crew members from the Israeli port of Haifa back to *Saratoga* capsized and sank off the coast of Israel. Israeli military and police officers rushed out in boats and helicopters to pull sailors from the water. Helicopters flew injured men to two hospitals in Haifa. Twenty U.S. sailors died. In addition, a crew member was missing and presumed drowned.

28 Dec

America, with CVW-1 aboard, and *Theodore Roosevelt*, with CVW-8, departed Norfolk, Va., on deployment in support of *Desert Shield*.

1990 Carrier and Air Wing Deployments

Enterprise (CVN-65)

CVW-11 (Tail Code: NH)
World Cruise
17 Sep 89-16 Mar 90

Squadrons	Aircraft
VF-114	F-14A
VF-213	F-14A
VA-22	A-7E
VA-94	A-7E
VA-95	A-6E/KA-6D
VAW-117	E-2C
VAQ-135	EA-6B
HS-6	SH-3H
VS-21	S-3A

Forrestal (CV-59)

CVW-6 (Tail Code: AE)
Mediterranean
04 Nov 89-12 Apr 90

Squadrons	Aircraft
VF-11	F-14A
VF-31	F-14A
VA-37	A-7E
VA-105	A-7E
VA-176	A-6E/KA-6D
VAW-122	E-2C
VAQ-142	EA-6B
HS-15	SH-3H
VS-28	S-3A

Carl Vinson (CVN-70)

CVW-15 (Tail Code: NL)
WestPac/Indian Ocean
01 Feb 90-31 Jul 90

Squadrons	Aircraft
VF-51	F-14A
VF-111	F-14A
VA-97	A-7E
VA-27	A-7E
VA-52	A-6E/KA-6D
VAW-114	E-2C
VAQ-134	EA-6B
HS-4	SH-3H
VS-29	S-3A

Constellation (CV-64)

CVW-9 (Composite)
Around Cape Horn (west to east)
12 Feb 90-07 Apr 90

Squadrons	Aircraft
VF-33	F-14A
VFA-82	FA-18C
VA-165	A-6E/KA-6D
VAW-112	E-2C
VAQ-138	EA-6B
HS-75	SH-3H
VS-33	S-3A
VRC-30 det	C-2A

Dwight D. Eisenhower (CVN-69)

CVW-7 (Tail Code: AG)
Mediterranean/Red Sea
(Desert Shield)
08 Mar 90-12 Sep 90

Squadrons	Aircraft
VF-143	F-14A+
VF-142	F-14A+
VFA-136	FA-18A
VFA-131	FA-18A
VA-34	A-6E/KA-6D
VAW-121	E-2C
VAQ-140	EA-6B
HS-5	SH-3H
VS-31	S-3B

Independence (CV-62)

CVW-14 (Tail Code: NK)
WestPac/IO/Persian Gulf
(Desert Shield)
23 Jun 90-20 Dec 90

Squadrons	Aircraft
VF-154	F-14A
VF-21	F-14A
VFA-113	FA-18C
VFA-25	FA-18C
VA-196	A-6E
VAW-113	E-2C
VAQ-139	EA-6B
HS-8	SH-3H

PH2 Dennis D. Taylor

CVW-11 aircraft crowd the deck of Abraham Lincoln (CVN-72) during her transfer to the Pacific Fleet.

Squadrons	Aircraft
VS-37	S-3A
VRC-50 det	C-2A

Saratoga (CV-60)

CVW-17 (Tail Code: AA)
Mediterranean/Red Sea
(Desert Shield/Storm)
07 Aug 90-28 Mar 91

Squadrons	Aircraft
VF-74	F-14A+
VF-103	F-14A+
VFA-83	FA-18C
VFA-81	FA-18C
VA-35	A-6E/KA-6D
VAW-125	E-2C
VAQ-132	EA-6B
HS-3	SH-3H
VS-30	S-3B

John F. Kennedy (CV-67)

CVW-3 (Tail Code: AC)
Mediterranean/Red Sea
(Desert Shield/Storm)
15 Aug 90-28 Mar 91

Squadrons	Aircraft
VF-14	F-14A
VF-32	F-14A
VA-46	A-7E
VA-72	A-7E
VA-75	A-6E/KA-6D
VAW-126	E-2C
HS-7	SH-3H
VAQ-130	EA-6B
VS-22	S-3B

Abraham Lincoln (CVN-72)

CVW-11 (Composite)
Around Cape Horn (east to west)
25 Sep 90-20 Nov 90

Squadrons	Aircraft
VF-114	F-14A
VF-213	F-14A
VFA-305	FA-18A
VA-95	A-6E/KA-6D
VAW-117	E-2C
HS-17	SH-3H
VAQ-135	EA-6B
VS-29	S-3A
VRC-30 det	C-2A

Midway (CV-41)

CVW-5 (Tail Code: NF)
Indian Ocean/Persian Gulf
(Desert Shield/Storm)
02 Oct 90-17 Apr 91

Squadrons	Aircraft
VFA-195	FA-18A
VFA-151	FA-18A
VFA-192	FA-18A
VA-185	A-6E/KA-6D
VA-115	A-6E/KA-6D
VAW-115	E-2C
VAQ-136	EA-6B
HS-12	SH-3H
VRC-50 det	C-2A

Ranger (CV-61)

CVW-2 (Tail Code: NE)
Indian Ocean/Persian Gulf
(Desert Shield/Storm)
08 Dec 90 -

Squadrons	Aircraft
VF-1	F-14A
VF-2	F-14A
VA-155	A-6E
VA-145	A-6E
VAW-116	E-2C
VAQ-131	EA-6B
HS-14	SH-3H
VS-38	S-3A
VRC-30 det	C-2A

America (CV-66)

CVW-1 (Tail Code: AB)
Red Sea/Persian Gulf
(Desert Shield/Storm)
28 Dec 90-18 Apr 91

Squadrons	Aircraft
VF-102	F-14A
VF-33	F-14A
VFA-82	FA-18C
VFA-86	FA-18C
VA-85	A-6E/KA-6D
VAW-123	E-2C
HS-11	SH-3H
VAQ-137	EA-6B
VS-32	S-3B

Theodore Roosevelt (CVN-71)

CVW-8 (Tail Code: AJ)
Red Sea/Persian Gulf/Med
(Desert Shield/Storm)
28 Dec 91-

Squadrons	Aircraft
VF-41	F-14A
VF-84	F-14A
VFA-15	FA-18A
VFA-87	FA-18A
VA-65	A-6E
VA-36	A-6E
VAW-124	E-2C
HS-9	SH-3H
VAQ-141	EA-6B
VS-24	S-3B
VRC-40 det	C-2A

F-14A Tomcats from the VF-14 Tophatters over John F. Kennedy (CV-67).

1990 Patrol Squadron Major Deployments

A P-3C over mountains of the Arabian peninsula. P-3s deployed to the region two days after the Iraqi invasion of Kuwait.

Atlantic Fleet

NAS Bermuda		
Aug 89-Feb 90	VP-5	P-3C UIIIR
Feb 90-May 90	VP-49	P-3C UIIIR
May 90-Nov 90	VP-23 det *(Desert Shield/Unitas XXVI)*	P-3C UII
NAS Roosevelt Roads, P.R.		
May 90-Nov 90	VP-23 det	P-3C UII
Nov 90-May 91	VP-26 det	P-3C UII
NAS Keflavik, Iceland		
Nov 89-May 90	VP-44	P-3C UII
May 90-Aug 90	VP-49	P-3C UIIIR
Aug 90-Feb 91	VP-56	P-3C UIIIR
NS Rota, Spain		
Dec 89-Jun 90	VP-10	P-3C UII
Jun 90-Jan 90	VP-45	P-3C UIIIR
NAF Lajes, Azores		
Dec 89-Jun 90	VP-10 det	P-3C UII
Jun 90-Nov 90	VP-45 det	P-3C UIIIR
Nov 90-May 91	VP-26 det	P-3C UII
NAS Sigonella, Sicily		
Jul 89-Jan 90	VP-24	P-3C
Jan 90-Jun 90	VP-16	P-3C UII.5
Jun 90-Dec 90	VP-11 *(Desert Shield)*	P-3C UII.5
Dec 90-Jun 91	VP-8 *(Desert Shield/Storm)*	P-3C UII.5

Pacific Fleet

NAS Adak, Alaska		
Dec 89-Jun 90	VP-17	P-3C
Jun 90-Dec 90	VP-47	P-3C UIII
Dec 90-Jun 91	VP-6	P-3C UII.5
NAF Misawa, Japan		
Aug 89-Feb 90	VP-46	P-3C UI
Feb 90-Aug 90	VP-9	P-3C UI
Aug 90-Mar 91	VP-19 *(Desert Shield/Storm)*	P-3C UI
NAF Kadena, Okinawa, Japan		
Jul 89-Feb 90	VP-40 det	P-3C UIII
Feb 90-Jun 90	VP-22 det	P-3B
Jun 90-Sep 90	VP-48 det	P-3C UIIIR
NAS Cubi Point, R.P.		
Nov 89-May 90	VP-50	P-3C UIIIR
May 90-Sep 90	VP-1	P-3C
Sep 90-Jan 91	VP-48 det	P-3C UIIIR
NAF Diego Garcia, B.I.O.T.		
Nov 89-May 90	VP-50 det	P-3C UIIIR
May 90-Sep 90	VP-1 det	P-3C
Sep 90-Nov 90	VP-1 *(Desert Shield)*	P-3C
Nov 90-May 91	VP-4 *(Desert Shield/Storm)*	P-3CUI

The flight line at Masirah, Oman, site for maritime patrol operations in support of Desert Shield/Storm.

Aviation Command Changes in 1990

Fleet Activities

Established	
HSL-49	23 Mar 90
Disestablished	
HC-9	31 Jul 90
Deactivated	
VMFP-3	01 Oct 90
Redesignated	
VA-22 to VFA-22	04 May 90
VA-94 to VFA-94	28 Jun 90
VA-105 to VFA-105	17 Dec 90
VA-37 to VFA-37	28 Nov 90
VMA(AW)-242 to VMFA(AW)-242	14 Dec 90

Shore Activities

Established	
U.S. Naval Air Pacific Repair Actitivy, Atsugi, Japan	07 May 90

EA-6Bs deployed to the Persian Gulf area were indispensable in providing electronic jamming support for coalition forces in the region.

Bureau Numbers Issued in 1990

Numbers below were assigned by the CNO during 1990 for future Navy and Marine Corps aircraft procurement:

Numbers	Qty	Type	Name	Contractor
164586-164596	11	AH-1W	Super Cobra	B
164597-164598	2	KC-130T	Hercules	L
164599-164604	6	F-14D	Super Tomcat	G
164605-164608	4	DC-9-33	Skytrain II	McD
164609-164620	12	SH-60F	Seahawk	S
164621-164626	6	E-2C	Hawkeye	G
164627-164672	46	FA-18C	Hornet	McD
164673-164692	20	FA-18D	Hornet	McD
164693-164746	54	FA-18C	Hornet	McD
164747-164758	12	FA-18D	Hornet	McD
164759-164760	2	KC-130T	Hercules	L
164761	1	C-28A		C
164762-164763	2	C-130T	Hercules	L
164764-164775	12	MH-53E	Sea Dragon	S
164776-164791	16	CH-53E	Super Stallion	S
164792-164795	4	MH-53E	Sea Dragon	S

Contractor codes:
B = Bell C = Cessna G = Grumman L = Lockheed
McD = McDonnell Douglas S = Sikorsky

Hal Andrews
Honorary Naval Aviator Number 22

His association with the Navy began in 1944 when the 19-year-old native of Ithaca, N.Y., joined the service and became an aviation electronics technician. After serving in WW II and the Korean War, he finally found his niche as a civilian aeronautical engineer for the Navy, retiring in 1986 after a 30-year career. Today, he continues to support Naval Aviation as a consultant in aeronautical systems and research.

On April 29, 1991, Hal Andrews was honored for the significant position which he has attained in the field of Naval Aviation technology. During a surprise ceremony in the office of the Assistant Chief of Naval Operations (Air Warfare), Vice Admiral R. M. Dunleavy designated Mr. Andrews Naval Aviator Number 22. Well wishers included Ellen, his wife of over 40 years; VAdm. W. C. Bowes, Commander, Naval Air Systems Command (NavAir); some of VAdm. Dunleavy's staff; the Naval Aviation History Office; and present and past members of *Naval Aviation News*. Also in attendance was retired JOCS Joe Oglesby, a former journalist on the magazine, who goes back to the late fifties with the honoree.

After some personal remarks, VAdm. Dunleavy read the official designation letter and Ellen pinned on the Wings of Gold. Obviously caught off guard, and with much emotion, Hal spoke: "Goal orientation is great, but this honor takes me past mine. A challenging, satisfying – and fun – career, with the accompanying special association to my historical aviation hobby interests, clearly makes this above and beyond.

"All the words are nice and, with the honor, appreciated. Whether or not I believe them, credit is due to a lot of others. These include those in BuAer/BuWeps [Bureau of Aeronautics/Bureau of Weapons] who trained me and those past and present *Naval Aviation News* staff who accepted me and helped me develop other skills, still imperfect, but not their fault!

"Of equal importance were those at NavAir and in industry, NASA, its NACA [National Advisory Committee for Aeronautics] predecessor, and Navy field activities, particularly the Naval Air Test Center with whom I worked to get ideas translated into reality.

"Through it all, Ellen – whose recognition by Admiral Dunleavy I especially appreciate – and our three children helped me in so many ways, particularly with support in spite of all-too-often absent husbanding and fathering.

"While never a qualified pilot (and in view of the presenter, Naval Flight Officer wings might have been more appropriate), part of the fun of my career has been being shown what flying qualities are really all about by a number of fine test pilots, both in Navy and industry.

"My early BuAer/BuWeps career training depended on superiors/mentors/role models who showed me the special advantages of the organization's unique combined military/civilian operation. They also made clear the importance of the civilian engineers' technical expertise. The viewpoint introduced by the many fine aviators who cycled through the old Main Navy complex, Jefferson Plaza, and the Pentagon was another important ingredient.

"These wings, given to me, are an emblem that honors each of those who have guided and supported me through the years."

The well-deserved honor recognizes the engineer's inestimable contributions to myriad naval aircraft programs during his career. But it also marks a long history with *Naval Aviation News* that began in the late 1950s.

As a young engineer, he approached the magazine staff with suggestions on editorial content. It wasn't long before this gifted aviation buff was writing articles for the magazine and was asked to join the staff as a contributing editor and technical advisor. His name first appeared on *NANews'* masthead in the April 1960 issue; since then, he has published more than 100 articles on naval aircraft and Naval Aviation. Over the years, he has voluntarily read almost every issue before press time. Even in retirement, he continues the practice. His passion for precise facts and details and sage editorial advice have helped *NANews* maintain its reputation for technical accuracy and well-written text for over 30 of its 72 years of publication. Managing Editor Sandy Russell said, "We really have confidence in Hal's eagle eye. When he can't find many mistakes, I feel that we've passed a difficult test."

JOCS B. A. Cornfeld

VAdm. R. M. Dunleavy, ACNO (Air Warfare), presents the official certificate to Hal Andrews – designating him Honorary Naval Aviator No. 22 – while Mrs. Andrews looks on.

Hal's vast knowledge has been called upon during many historical projects, such as celebrations of the 50th and 75th year anniversaries of Naval Aviation, and the 50th anniversary of the first transatlantic flight when he was responsible for the newly restored NC-4's safe display outdoors on the Mall in Washington, D.C. He retired as the Naval Air Systems Command's Technical Director under the Assistant Commander for Research and Technology. Through the years, he worked on the F11F, FJ, F4D, F3H, TT-1, F-8, T-2, E-2, A-6, F-4, EA-6, F-111, F-14, FA-18, advanced systems leading to the V-22, T-45 and A-12, and V/STOL aircraft programs, including the X-22 and YAV-8B.

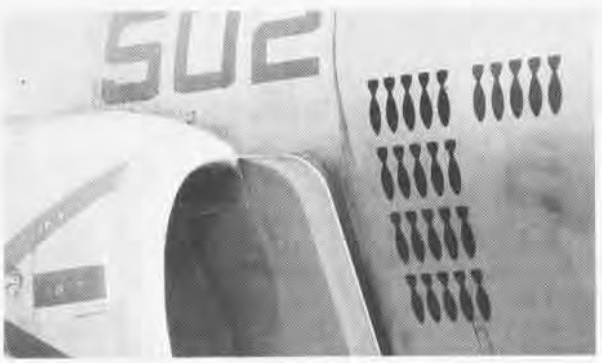
There's no question that Hal Andrews belongs in this elite group and deserves to wear the Wings of Gold to which he has dedicated so much of his life. In his official designation letter, VAdm. Dunleavy said it best:

"Your ability to recall dates and aircraft statistics is indicative of your extraordinary knowledge. But the man behind this brilliant mind is not the characteristic technical type who is able to communicate only with peers. The interest that you have shown in your associates at all levels has earned you the reputation of a real 'people person' and all-around nice guy. You're a unique individual who has made a lasting impression on the world of Naval Aviation technology." ■

Gulf War Mission Markings

A-6E AJ-500, VA-65, Roosevelt, displays Garfield armed with Teddy's big stick.

Camels signify missions on A-7E AC-404 BuNo 159971, VA-72, Kennedy; and A-6E NE-405 BuNo 161670, VA-155, Ranger.

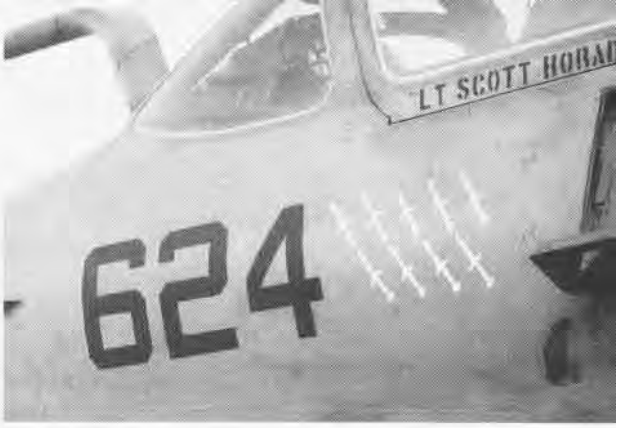


Traditional bomb symbols mark the nose of A-6E AC-502 BuNo 162192, VA-75, Kennedy; and A-6E AB-504 BuNo 158046, VA-85, America.

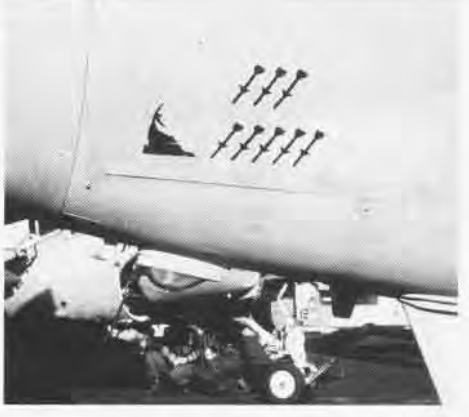
SH-3H AJ-616, HS-9, Roosevelt, is credited with the detection of 10 Iraqi mines.

As in wars past, Navy aircraft that participated in Operation *Desert Storm* were adorned with mission markings and, to a lesser extent, "nose art." Capt. Steve Ramsdell, who visited all six of the *Desert Storm* carriers, took time to photograph some of the short-lived markings. Here are a few samples from *John F. Kennedy* (CV-67), *Ranger* (CV-61), *America* (CV-66), and *Theodore Roosevelt* (CVN-71).

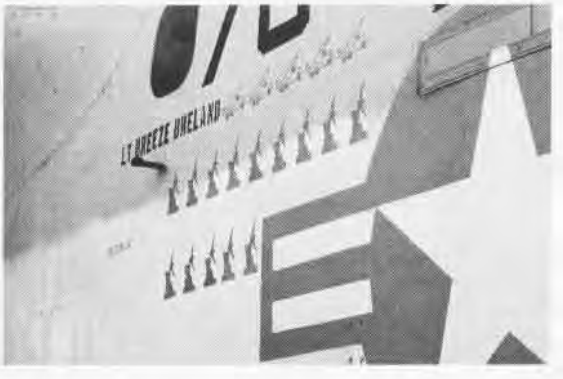
Photos by Capt. Steve Ramsdell



HARM missile strikes are logged on EA-6B AB-624 BuNo 162938, VAQ-137, America; and EA-6B AC-621 BuNo 163399, VAQ-130, Kennedy.



Radar sites were detected by S-3B AB-702 BuNo 159766, VS-32, America; and S-3B AC-704 BuNo 160149, VS-22, Kennedy, which is also credited with detection of five SCUD launchers.



A-6E NE-501 BuNo 162182, VA-145, Ranger is credited with seven radar sites and one Iraqi patrol boat.

Bombs and HARM missiles adorn A-7E AC-301 BuNo 160714, VA-46, Kennedy.

SBD Dauntless

By Hal Andrews

Without question, the epitome of carrier tactical aircraft in terms of combat results achieved is the WW II Douglas SBD *Dauntless*. During 1942, the first year of the war in the Pacific, *Dauntless* aircrews, flying their dive-bombing attacks and taking advantage of those times when fortune smiled on them, sank a total of six Japanese carriers in three separate battles. Four of these went down at Midway, the first major WW II defeat for the Japanese Imperial Navy.

Rugged, simple, and a fine flying machine, SBDs were a mainstay of the carrier air groups through two and half years of the war, and with the Marines in their island campaigns until the war's last weeks. While not a fighter, it was no slouch in air-to-air combat. Records are incomplete, but its crews were credited with well over a one-to-one kill ratio against the Japanese opponents. Many of these were the vaunted Mitsubishi A6M *Zeros*; the rear seat radioman-gunner aircrewmen, firing their flexible .30-caliber machine guns, accounted for a good share. Flown extensively by the Army Air Force and air forces of other countries, it saw limited combat service with them and was never as successful as it was with the Navy and Marines for whom it was created. In fact, contrary to one of aviation's standard myths that the Marines always got the old Navy airplanes, Marine squadrons were the first to receive the brand new SBD-1s in 1940.

Carrying over from the Northrop BT-1s from which it was developed (*Naval Aviation News*, September-October 1989), the SBD was an all-metal, low-wing monoplane with most features typical of its time. Powered by a Wright-R-1820 Cyclone engine, the engine as used in the SBD was developed from an initial 1,000-hp rating to 1,350 hp in the final SBDs built. This increase overcame much of the impact of ever-increasing weight as equipment, armor, and armament were added to meet wartime needs.

The pilot had two forward-firing machine guns, either .30 or .50-caliber in the SBD-1s, mounted ahead of the cockpit and synchronized to fire through the propeller's arc. The crewman had a single, flexible .30, later replaced by a twin .30 mount. One bomb, up to 1,000 lbs., could be carried in the centerline rack; the displacement gear fork swung down to release it below the propeller arc in a dive. One wing rack under each wing could carry up to a 325-lb. depth bomb.

Ordered from the Douglas El Segundo Division (which the original Northrop Company had become) in April 1939, the SBD-1's design underwent extensive revisions based on the continuing flight development of the XBT-2 prototype. While definition of desirable stability and control characteristics was in its infancy, an iterative process involving both company and Navy test pilots was undertaken to provide flying qualities that would not require special piloting skill, especially "around the boat."

Late in the design period, concern over flight characteristics with maximum fuel and military load led to a decision to move the engine forward five inches to ensure longitudinal stability. All the effort would pay off in an airplane that wouldn't require either changes or special piloting concerns as it grew with wartime equipment/armament additions and changes.

With the pressure of war in Europe, the option for additional production SBDs was exercised, and completion of the second production SBD expedited so that it could join the first in the company flight development and demonstration testing and subsequent Navy Board of Inspection and Survey (BIS) trials. Flight testing at El Segundo was in May 1940, including final tuning of the new configuration using both airplanes; the second was resplendent in the colorful markings of VMB-2's squadron commander, a practice for production airplanes at the time that would be lost forever with Naval Aviation's subsequent wartime expansion. Preliminary demonstrations were completed at El Segundo and both aircraft were ferried to NAS Anacostia, D.C., in early June for Navy BIS trials.

With demonstration tests completed, Navy trials started at Anacostia in late June using the first SBD-1, the second going to the Naval Aircraft Factory (NAF) at Philadelphia, Pa., in early July for carrier-type tests. Using the shore-based catapult and arresting systems there, it would conduct this phase of the trials.

On July 23, the SBD program suffered one of its few setbacks. During a dive test with a 1,000-lb. bomb, the flotation bags inflated, resulting in excessive shock and vibration, rapidly followed by engine failure. While the pilot was uninjured in the subsequent forced landing, the first SBD went back to Douglas for extensive repairs. The second returned from the NAF to complete the dive and bomb-dropping tests, going back and finishing arresting tests by mid-August. With the usual range of items for correction, the newest scout bomber was ready for service.

Deliveries began to VMB-2, which was pleased to replace its fabric-covered, fixed-gear biplanes and to be the first with Naval Aviation's latest modern, high-performance dive-bomber. Following delivery for the Marines of the 57 SBD-1s, 87 SBD-2s were delivered, most going initially to Navy carrier squadrons starting in late 1940. With increased fuel capacity and deletion of the alternate provision for .30-caliber guns in place of the two cowl-mounted synchronized .50s, these were otherwise essentially identical to the -1s. Before they were delivered, 174 SBD-3s had been ordered. Their main changes were armor protection and self-sealing fuel tanks, reflecting early European combat experience, and these were later backfitted to many earlier SBDs.

Deliveries of -3s continued through 1941, with orders for a duplicate Army version as the A-24 adding to the total. A different paint scheme and a pneumatic tail wheel – the latter also used on land-based SBDs in lieu of the standard solid rubber one – were the obvious differences. However, major increases in production of the *Dauntless*, as the Navy named the SBD in September, weren't scheduled. The new SB2A and SB2C dive-bombers under development received these large orders.

Pearl Harbor changed everything and SBDs were ordered in the hundreds, supplemented by additional A-24s. By Spring 1942, *Dauntless* production had begun its big increase as the first carrier aircraft battle of naval forces took place in the Coral Sea. There and in June at Midway, the victorious dive-bomber crews flew either -2 or -3 *Dauntlesses*; at Midway, most of the gunner's single .30 flexible machine guns had been replaced with

SBD-5

new twin guns – later installed on all SBDs. Before the end of the year, SBD crews had accounted for a sixth Japanese carrier in the eastern Solomons and played a significant role in successfully defending our Guadalcanal bases. Production switched in the fall to the SBD-4, featuring a 24-volt electric system in place of 12-volt to accommodate greater electrical power demands of the increased wartime electrical systems.

Additional power in the R-1820 series engines became available in 1943, 1,200 hp versus 1,000 hp for takeoff, much needed to accommodate the increasing weight – and drag – of the wartime configurations. The revised engine installation in the SBD-5s included a new cowling, eliminating the top-mounted airscoop of the earlier *Dauntlesses*. ASB radar, with its YAGI array antennas under the outboard wing panels, already being installed on fleet SBDs, became standard on later -5s. Radar added new capabilities – and a new task for the rear seat crewman. Twin external wing tanks could also be carried, replacing the field installed single wing tank provisions on the left wing bomb racks of the earlier airplanes.

Increased armament was one focus of attention through most of the SBD's wartime service. Racks carrying multiple small bombs were fitted to the two wing bomb racks for ground attack. Later provisions for carrying a 1,600-lb. armor-piercing bomb on the center rack were qualified, though not for catapulting. Pods carrying twin .50 guns were developed to be carried on the wing bomb racks, though infrequently used in combat. More often used were rockets mounted on underwing racks installed between the bomb racks and the radar antennas. As with other carrier aircraft, photo versions of the SBDs were provided by field modification, P models of all series being built, with SBD-3Ps most numerous. The camera installation was in the lower aft fuselage, as in most WW II carrier combat types.

SBD-5s were ordered in the thousands as introduction of the SB2C was further delayed. The pace of production increased, reaching 350 or more a month in mid-1943. It was supplemented by additional A-24s for which production was shifted to Douglas' Tulsa, Okla., plant. A further increase in R-1820 power, dependant on higher octave fuel, became available. A single -5 became the XSBD-6 with the 1,350-hp -66 engine, and the last 1,450 -5s on order were shifted to -6s. By early 1944, the SB2Cs were finally in combat in numbers, and the final 1,000 SBD-6s were canceled as production began to wind down. The last SBD-6s were delivered in August, after carrier combat operations had ended in June.

Marine squadrons continued to use SBDs, mostly -5s and -6s, in island combat operations for another year, particularly in support of Army ground forces in the Philippines. Offshore Navy patrol squadrons also used SBDs in many areas. As the island campaigns in the Pacific wound down, so did the SBD's employment, the final Marine *Dauntless* squadrons being withdrawn August 1, 1945. All SBD operations were rapidly phased out as the war ended.

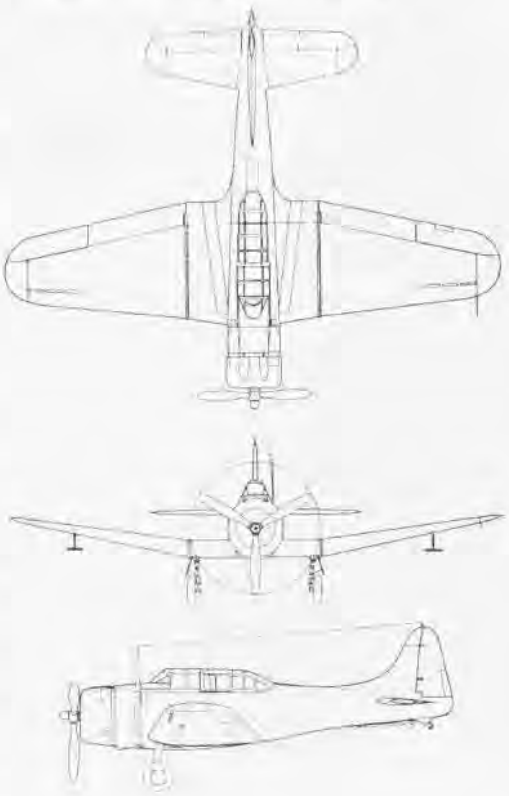
In addition to the U.S. services, several other countries operated *Dauntlesses*, either SBDs or A-24s, though in limited numbers. The Free French were the largest foreign wartime users, SBD's being flown by both Army and Navy squadrons. One New Zealand squadron also flew SBDs in the Southwest Pacific, though only for a limited period. A small number went to Britain but were never operational. Others, all A-24s, were used by Mexico and Chile. France continued to fly *Dauntlesses* in combat as fighting began in Indochina, finally retiring them in 1949. The Latin American *Dauntlesses* continued flying into the fifties.

The few remaining in postwar service here were in various test roles. The last Navy SBD was operated at the Navy's flight test activity (by then the Naval Air Test Center, Patuxent River, Md.) as had been the first. In May 1948, it was flown out to be put in storage for the National Air (and Space) Museum, where it can be seen today, proudly posed as in flight in the Sea-Air Gallery.

With the advent of the Air Force's current YF-22 and 23 Advanced Tactical Fighter prototypes, it's interesting to note that the handful of Army *Dauntlesses* still in use when the Army Air Force became the U.S. Air Force were redesignated as F-24s, since the Air Force didn't have A series attack aircraft prior to the 1962 joint services designation system.

SBD

Length	
SBD-1/-2	32'2"
SBD-3/-4	32'8"
SBD-5/-6	33'0"
Height (tail down)	12'11"
Wing span	41'6"
Engine/horsepower	Wright Cyclone 9-cylinder radial
SBD-1/-2	R-1820-32, 1,000 hp
SBD-3/-4	R-1820-52, 1,000 hp
SBD-5	R-1820-60, 1,200 hp
SBD-6	R-1820-66, 1,350 hp
Maximum speed	
SBD-1/-4	245 mph
SBD-5/-6	252 mph
Ceiling	26,000'
Range	
SBD-1	985 st. mi.
All others	1,400 st. mi.
Armament	Two .50 cal. fixed forward, one or two .30 cal. flexible mounted in rear cockpit, 1,600 pounds of bombs on swinging bomb cradle under fuselage and 325 pounds on each of two under-wing stations.
Crew	Pilot and observer/gunner



Aviation Ordnance 1939-1941

Douglas SBD-1s – numbers 7, 4, and 9 of VMB-1 from Quantico, Va. – on May 18, 1941, shortly before the colorful paint scheme was replaced with overall light gray.

By John M. Elliott

With memories of the First World War fresh in mind, the United States entered a period of isolationism that was to last until the Japanese attack on Pearl Harbor. The general feeling was that with a large ocean between the U.S. and Europe, or the Far East, we were invulnerable to attack and would not become involved in another foreign war. There was to be no further intervention in the affairs in Europe. The primary mission of the military was the defense of this country. However, there were several countries within the Western Hemisphere in which we did position troops and conduct military operations in the name of establishing a responsible government and ensuring political relations throughout the hemisphere in keeping with our national interests.

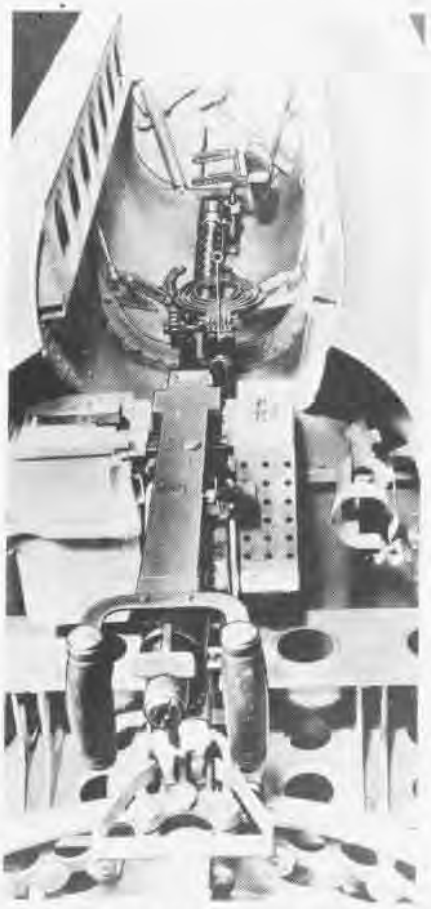
Perhaps part of the false sense of security and adequacy of our military was based on the operation of these troops. Against the rebel factions of these underdeveloped countries, the weapons being used by our troops were more sophisticated and sufficient for the immediate task at hand. Little consideration seems to have been given to the advances in armaments being made in Europe. In no other field was this lack of appreciation for new technology more apparent than in aviation.

Naval Aviation entered WW II with the weapons that had been in existence at the end of the last war. Armor-piercing, demolition, antipersonnel and depth bombs, long-delay and hydrostatic fuzes, in addition to normal contact types, had been developed during WW I. Aircraft machine guns of .50 caliber, as well as lead computing sights for free gunnery, were all in place. The U.S. Navy had pioneered in the delivery of aerial torpedoes and specialized aircraft for their delivery. What then had been accomplished in the intervening 20 years?

Although studies had been made of aircraft armor for many years, it was impracticable to install it in naval aircraft until 1940. Prior to that time, aircraft performance was not able to support the additional weight of armor. But aircraft performance had improved to a point where the consideration of armor was feasible, and experience in the European war indicated it to be a necessity.

By March 1940, the protection of pilots was accepted as the maximum that could be afforded due to the weight of the armor. Complete protection of all vital components of the aircraft was not considered practicable. The installation of armor in naval aircraft was ordered in 1941. By the time we entered WW II, armor was being installed by the contractors in all combat aircraft being delivered. At this time, the armor was only designed to provide protection against .30-caliber weapons, although the requirement for protection against .50-caliber armor-piercing ammunition had been established in April 1939.

One of the anticipated most significant weapons and the most crushing disappointment was the aerial torpedo. A torpedo attack against a ship, with the resulting heavy underwater explosion, could have devastating results. Unfortunately, as we entered WW II, we possessed a torpedo which was most likely the worst in any navy.



SBD-1 original single .30-caliber free gun installation. Note 100-round magazine on gun and holder for six more.

In order to get the torpedo in the water in one piece with a reasonable expectation that it would function properly, it was necessary to release it from a height of less than 100 feet and a speed under 90 knots. Like its counterpart used by submarines and surface ships, that did not necessarily mean that it would run true to the target. The biggest problem, though, was if it did arrive at the target after these restrictions, it might not explode. It was not until well into the war that these problems were solved to a reasonable extent, and by that time the aerial delivery of torpedoes was seldom used. How could these problems not have been realized during the intervening years?

The problem of poor control in all U.S. torpedoes was well known. The disaster of malfunctioning exploder mechanisms was not as well known, and to a great extent this was a matter of economy. Torpedoes were expensive weapons. To conserve money, torpedoes expended during training contained a dummy warhead. At the completion of the torpedo's run to the target, it would bob to the surface due to the buoyancy of an air flask, so it could be retrieved and used again. The expenditure of live warheads was not large enough to adequately expose the deficiencies in their operation.

It was recognized that the airplane was a means of delivering ordnance to the target. In 1937, the Douglas TBD *Devastator* was the best torpedo bomber known, but time and technology passed it by. No matter what aircraft was used, the one major flaw was in the delivery technique. The long, low, slow, steady course necessary to set up the delivery made the aircraft a sitting duck to every gun that could be brought to bear. The only really successful torpedo attacks by aircraft during the war were made against ships not expecting an attack or ones that were softened up for this last blow.

While all the various types of aerial bombs had been developed by the end of WW I, those used by the Navy were strictly U.S. Navy designs. During the days prior to the Army/Navy Standard (AN Standard) program, Navy bombs would not fit on Army aircraft and vice versa. The fuzes for these bombs developed by the Bureau of Ordnance were complex and expensive, due to the stringent safety precautions imposed. Some Army fuzes were fully armed as the bomb fell free of the aircraft and a spring-loaded "jump out" pin was ejected. This concept was completely unacceptable in Naval Aviation operating off a carrier. Using an Army-type fuze, a bomb accidentally dropped upon takeoff would be fully armed when it entered the water and could explode as the carrier sailed over it. Navy fuzes, on the other hand, required several hundred feet of free air travel to become armed. During the travel, the explosive train within the fuze was aligned with the firing pin to arm the fuze. This concept was adopted in the AN Standard nose fuze but not in the family of tail fuzes necessary for the various size bombs.

Depth bombs for use against submarines were another problem. These bombs had a transverse fuze operated by water pressure. It was necessary that the depth at which the bomb was to explode be set in the fuze prior to the bomb being hung on the aircraft. Adjusting this depth setting due to an operational change was a slow and time-consuming task. The five bolts that secured the fuze head to the bomb had to be removed and the exploder mechanism withdrawn from the transverse fuze well and disassembled. Depth was set by a combination of springs of various colors that indicated their strength. By using the appropriate springs, depth settings from 25 to 150 feet, in steps of 25 feet, could be set into the fuze. Then this all had to be reassembled, ensuring a watertight seal around the head of the fuze and side of the bomb.

As we entered WW II, tail hydrostatic fuzes were being introduced which could be set by turning a depth-setting knob on the side of the fuze. Once airborne, though, there was no way in which the depth setting could be changed on any of the fuzes. During the latter part of the war, depth bombs with contact nose fuzes were employed against caves for their blast effect, which was much greater than general purpose bombs of the same weight.

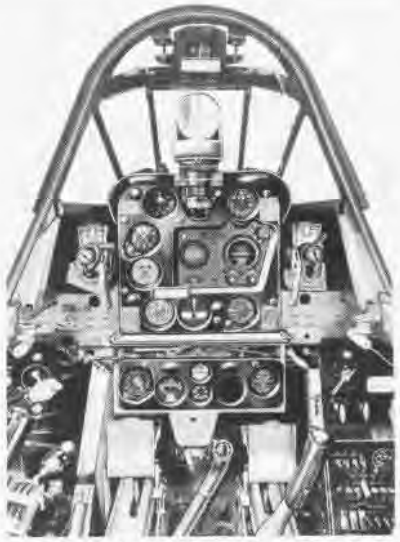
At the beginning of the war, AN Standard bombs – which could be used by the Army, Navy, and British – were coming into use. Many of the old individual service types were in the magazines and caused compatibility problems. Where there was a similar type in both services, a standard design was adopted. The Navy retained its 1,000 and 1,600-pound armor-piercing bombs with Navy tail fuzes for use against capital ships and other heavily reinforced targets. Both of these could be carried by the SBD *Dauntless* dive-bomber.

The introduction of a heavily armored aircraft by the Germans during the closing days of WW I made the rifle-caliber machine gun obsolete as an aerial weapon. The United States was among the first to realize this change. General John J. Pershing, Commander in Chief of the American Expeditionary Force, was among the first to see that the lightweight rifle-caliber bullets would be ineffective against armored aircraft. He immediately directed that development be started on a machine gun having a bore of at least one-half inch.

By the late 1920s, the Browning .30-caliber machine gun was developed into a successful weapon capable of firing 1,000 rounds per minute. Then, practically all machine gun development ceased in this country. This was partly due to a lack of funds but even more a result of the peaceful lethargy that settled over this country after the war. After all, who was going to penetrate our ocean barriers?

A large caliber machine gun was considered to be a weapon for special objectives, such as balloons and other targets to be engaged at altitudes below 20,000 feet, while the rifle-caliber gun would be used by high-flying aircraft against similar aircraft. Development was slow and .50-caliber guns were used only experimentally until 1937.

The normal gun installation during the years between the wars consisted of one or two .30-caliber guns firing forward and one of the same type gun firing aft. To illustrate the lack of appreciation for gun power, the TBD-1 was delivered in 1937 with a single .30-caliber forward-firing gun. Some defense while slowly flying down the gun barrels of a battleship!



SBD-6 pilot's instrument panel with Mk 8 illuminated gun sight and Browning .50-caliber machine guns installed. Chart board between two sections of instrument panel is partly withdrawn. Note the gun charging handles and canvas pouch tied around the lower rear of the guns to absorb oil and prevent it from dripping on the pilot's leg.

With the introduction of the F3F-3 in 1938, .50-caliber guns began to be installed, but they were all mounted on the forward fuselage and had to be synchronized to fire between the blades of the revolving propeller. In many cases, the early use of .50-caliber guns resulted in a mixed battery of one .50 and one .30-caliber gun.

It was not until the introduction of the Brewster F2A-1 *Buffalo* in the spring of 1940 that free-firing .50-caliber machine guns were installed in the wings of U.S. Navy fighter aircraft. Even then, the armament consisted of a pair of synchronized .30s in the cowl and a .50-caliber gun in each wing. In August 1940, with the delivery of the first Grumman F4F-3 *Wildcat*, the Navy finally received an aircraft with two .50-caliber guns in each wing. The idea of synchronized guns was hard to give up. The SBD, which was delivered in 1940 with two .50-caliber guns, continued to have this installation until production terminated in 1944. Even the Grumman TBF-1 *Avenger* entered service in 1942 with a synchronized .50-caliber gun.

A synchronized gun installation had many problems both in maintenance and operation. Ammunition had to be manufactured with closer tolerances than for use in other machine guns or rifles. While the settings varied from aircraft to aircraft, the disadvantages and problems with the installation were similar. Basically, the gun would fire while a selected propeller blade was in line with the gun bore. By the time the projectile reached the plane of the rotating propeller, the blade had moved out of the way.

This was a major operational problem. The pilot had to ensure that the engine was turning fast enough for the blade to be out of the way, but not too fast or the next blade would be struck. All of this careful timing was controlled by a rather simple mechanical system. An engine-driven cam, through a cam follower, imparted a pull on a wire which snaked its way up to the gun. This then pulled a slide which in turn moved an arm into the gun to release the firing pin. Because of these mechanical actions, wearing of parts, and the possibility of adjustments changing, it was necessary to check every gun prior to each day's operation.

From the above, it can be seen that the gun was really a single-shot weapon rather than a machine gun. The system had to wait until the gun had fired, extracted and ejected the spent cartridge case, fed a new round into the chamber, and was locked ready to fire. Then, when the correct propeller blade came by, the gun would receive a pulse to shoot another round. This presented another operational problem to a pilot in combat who would like to fire as many rounds as possible while having his guns bear on the target. Attempts to make it possible for the gun to fire on any blade rather than just one were less than successful. The slight increase in gun-firing rate and the possibility of accidentally hitting a blade did not justify trying to adjust the system so that the gun could fire on any blade of a three-blade propeller. This practice was discontinued.

In those aircraft with a second crew member as a radio-gunner, the installation was not much improved from that of the rear-seat gunner in a DH-4 in France during WW I. True, the Lewis gun, with its 97-round ammunition drum, had been replaced by a Browning with a 100-round magazine. While this did increase the rate of fire by approximately 300 rounds a minute, the operation of the guns was still strictly by manpower. Instead of having to squat to fire overhead, the gunner could now lower his adjustable seat. But to do so, he had to let go of his gun with one hand to release the seat.

There had been twin Lewis gun installations, but we entered WW II without a twin-gun installation in any of the two and three-seat aircraft. This was not to be improved upon until just prior to the Battle of Midway in June 1942. Antiquated as this system may have been, rear-seat gunners were able to shoot down the much heralded Japanese *Zero*.

Gun sights hadn't progressed much, either. The rear-seat gunner was still equipped with a ring and post sight as had been his counterpart in WW I. The difference was changes in the rings to accommodate the higher speeds. Pilots had progressed to a telescope sight for both bombing and gunnery. While this did give an enlarged view of the target, which was nice for bombing, it reduced his overall vision during

TBD-1 0358 of VN-5D8, Corry Field, Pensacola, Fla., Spring 1939.

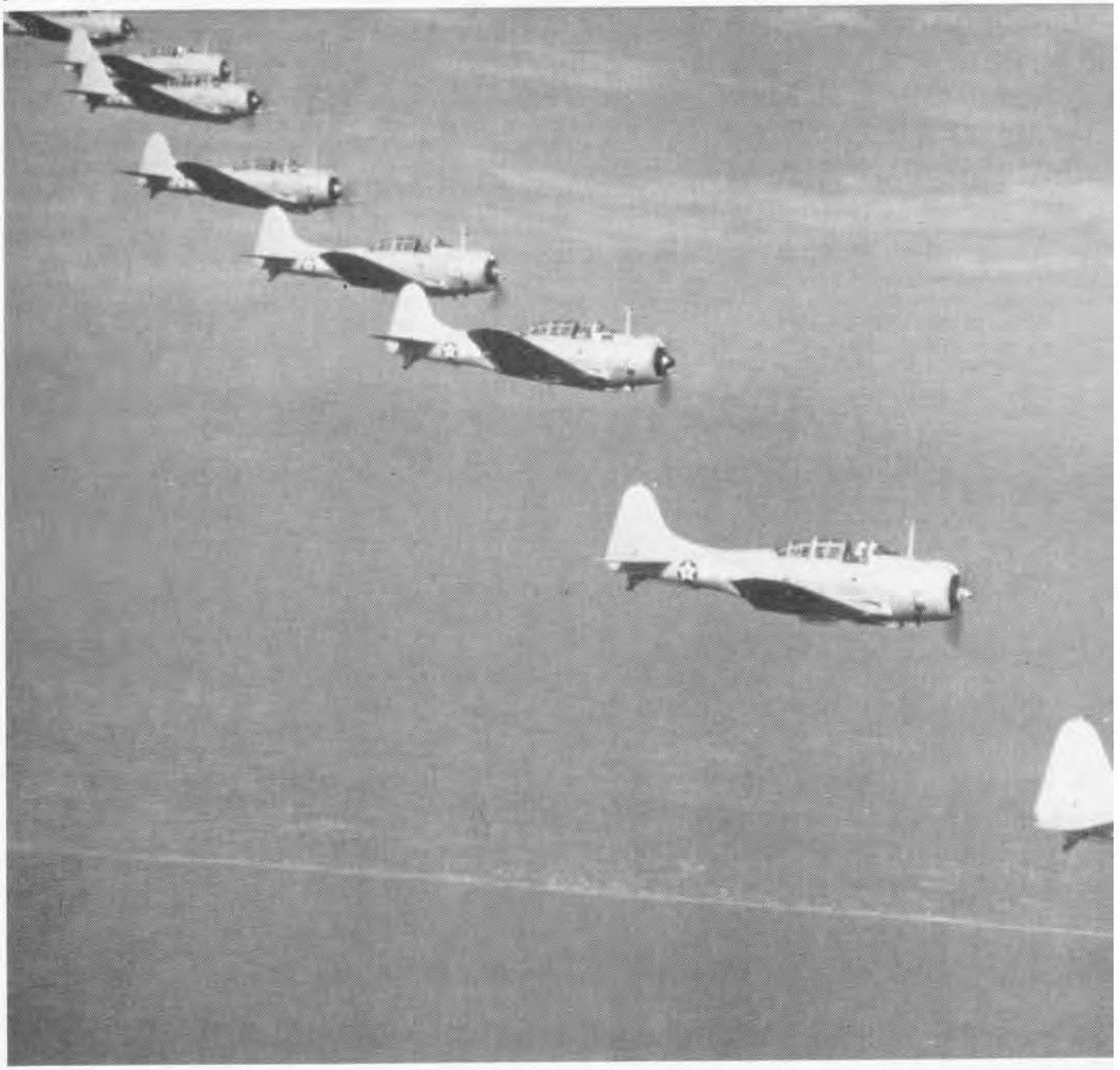
gunnery while he had one eye glued to the scope. Just to be on the safe side in the event the telescope lens became fouled, auxiliary ring and post sights were attached to the barrel of the telescope. Optical illuminated gun sights were not to be a reality until just prior to the attack on Pearl Harbor.

The dropping of bombs, as well as arming their fuzes, was done mechanically. It was not until just before the Battle of Midway that an electrical bomb release system was installed in the dive-bombers, and even then the mechanical system was retained as a back-up until the end of the war.

Prior to WW II, the use of aircraft parachute flares to provide illumination for night attack, reconnaissance, night rescue, and emergency landings figured heavily in training. In the course of the war, however, they were seldom used. Smoke screens had been of great importance in training exercises. While the SBD continued to be equipped for this, the capability was not used.

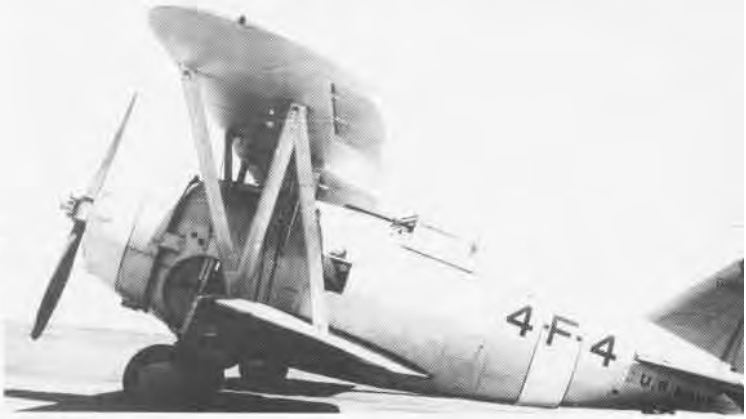
During the late 1930s, rudimentary work was being accomplished on what would evolve into guided missiles. At this time, it meant the remote control of an entire aircraft which would be flown into the target. Such a system was actually developed and tried in the Solomons in 1944.

Rockets on aircraft had been used

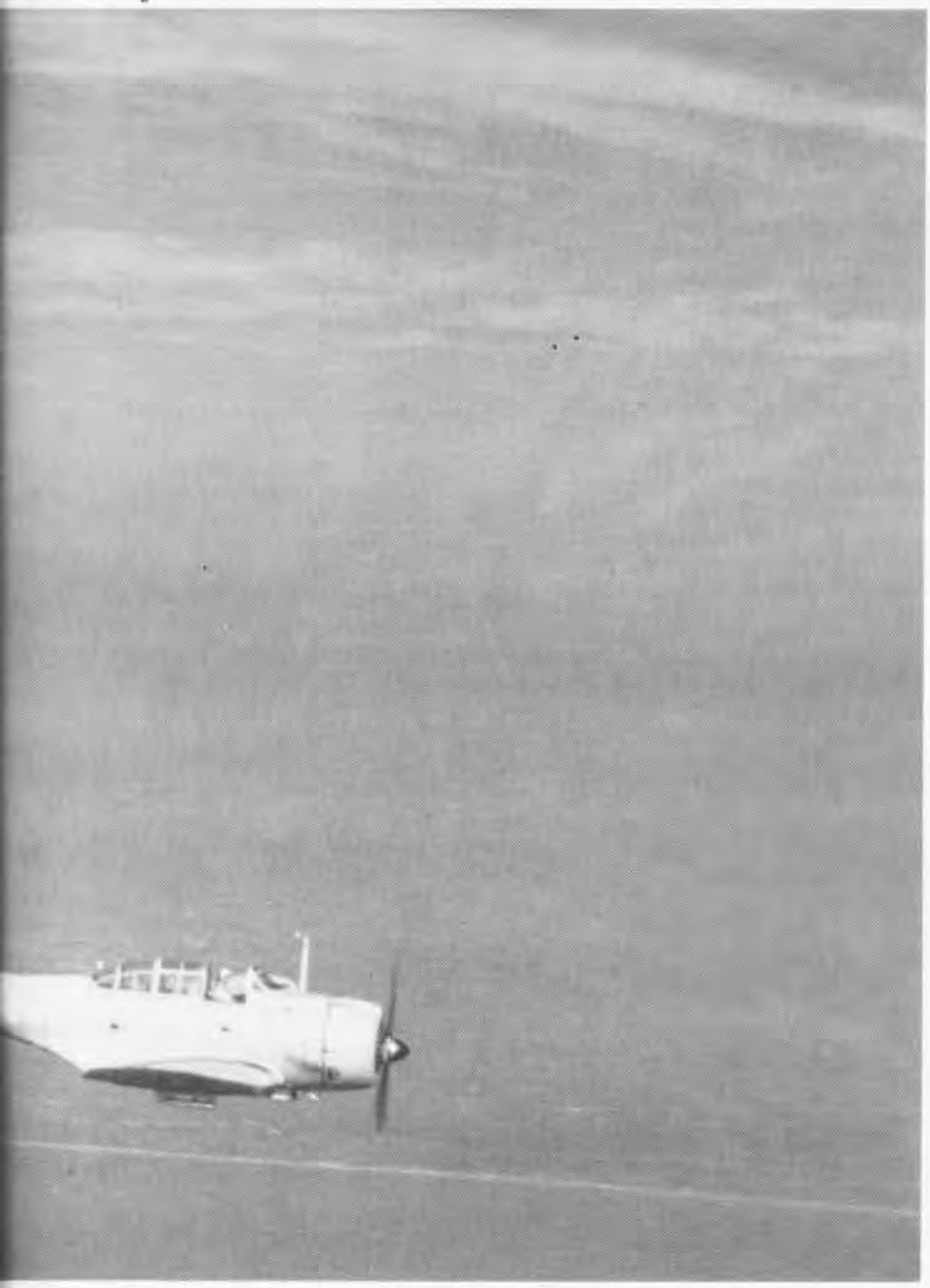


against Zeppelins during WW I, but the idea was not tried again until after 1943. Napalm bombs and VT (variable time) fuzes were still to be developed during the war. U.S. Naval Aviation was to enter WW II with basically the weapons it had 20 years earlier. ■

Mr. Elliott was assistant historian in the Naval Aviation History Office until his retirement in 1990.



Grumman F3F-1. Section leader, second section VF-4, denoted by the insignia fuselage band and full white cowl.



A flight of SBD-2s in 1941.

50 Years Ago — WW II

July 1: The first landing, takeoff, and catapult launching from an escort carrier were made aboard USS *Long Island*.

July 1: Patrol Wing, Support Force, was redesignated and established as Patrol Wing 7 at Argentia, Newfoundland.

July 7: The First Marine Aircraft Wing was organized at Quantico, Va. It was the first of its type in the Marine Corps and the first of five wings organized during the war period.

July 8: Patrol Wing 8 was established at Norfolk, Va.

July 12: Naval Air Station, Quonset Point, R.I., established.

July 15: United States Naval Air Station, Argentia, Newfoundland, established.

July 29: The Secretary of the Navy approved the installation of a Radar Plot aboard carriers as "the brain of the organization" protecting the fleet from air attack. The first installation was planned for the island structure of *Hornet* (CV-8).

August 10: The Second Marine Aircraft Wing was activated at San Diego, Calif.

Awards

The *Tridents* of VP-65 received the **Liberty Bell Trophy** for antisubmarine warfare excellence and the **AVCM Donald M. Neal Golden Wrench Award** for maintenance excellence.

USMC Maj. Gen. Harold Blot received the American Helicopter Society's **Paul E. Haueter Award** for 1991. The award recognizes his long-standing interest in V/STOL aircraft and his work to further V/STOL in the Marine Corps and Navy.

The following are the CY-90 winners of the **CNO Aviation Safety Awards:**

ComNavAirPac: VAs 27, 95; VAQs 130, 139; VAWs 110 ,114 (third consecutive year); VF-21 (second consecutive year); VFA-25; VP-17; VRC-30; VS-38; VX-5; HC-5; HS-8; and HSL-35.

ComNavAirLant: VAs 75, 105; VAW-125; VFs 103, 45; VFA-86; VP-45; VS-31 (second consecutive year); VX-1 (third consecutive year); HC-2; HM-14; HS-5; and HSLs 36, 46.

CGFMFPac: HMHs 462, 463 (second consecutive year); HMLAs 267, 369 (second consecutive year); HMMs 262, 268; and VMFAs 235, 314.

CGFMFLant: HMMs 162, 261, 365; VMA-231; VMFAs 333, 451 (third consecutive year); and SOES Cherry Point.

CNATra: HT-18 (second consecutive year); VTs 19, 21, 27, 31 (third consecutive year), and 86.

ComNavAirResFor: HS-75; VA-204; VAW-78; VF-202 (fourth consecutive year); VP-69; and VR-59.

CG 4th MAW: HML-776 and VMGR-234.

ComNavAirSysCom: Pacific Missile Test Center.

Cowinners of the 1990 **Readiness through Safety Award** are CNATra and ComNavAirLant. CNATra also won the **Adm. James S. Russell Aviation Flight Safety Award** for 1990.

Three Naval Postgraduate School grads are among 10 NASA astronauts that recently received an international aeronautics award for outstanding performance and accomplishment. The **Komarov Diploma** will go to Cdr. Michael Coats and mission specialists Robert Springer and James Buchli – all crew members on the STS-29 shuttle which flew in March 1989. The diploma is in honor of Soviet Cosmonaut Vladimir Komarov who lost his life on the flight of Soyuz 1. It was established in 1970 by the Federation Aeronautique Internationale.

VAW-78 received the 1990 **Commander, Carrier Air Wing Reserve 20 Golden Wrench Award** for setting the aviation maintenance excellence standard throughout the wing from October 1989 to December 1990.

For the second consecutive year, HSL-94 won the **Admiral Alfred M. Pride ASW Award** (this time for 1990) as the best LAMPS MK I squadron in the Naval Reserve. Sponsored by Kaman Aerospace Corporation and the Naval Reserve Association, this award is presented annually to the reserve LAMPS squadron with the highest mission readiness.

AC1(AW) Naomi R. Hite received the **Adm. Robert B. Pirie Air Traffic Controller of the Year Award**, and Marine Sgt. Gary M. Miller (ET) won the **VAdm. William P. Lawrence Air Traffic Control Technician of the Year Award** for 1990.

Dual winners for the 1990 **Grampaw Pettibone Award** are Capt. Robert Joslin, USMC, and Lt. Tim Roorda, USN. The award is presented to the individual or organization contributing the most toward aviation safety awareness through publications.

The 1990 **Battle Es** for carriers were presented to: *Midway* (CV-41), ComNavAirPac; and *Dwight D. Eisenhower* (CVN-69), ComNavAirLant.

The **Noel Davis Trophy** winners for 1990 are: HSL-94, NAS Willow Grove, Pa.; VAW-88 and VF-302, NAS Miramar, Calif.; VFA-305, NAS Point Mugu, Calif.; VP-68, NAF Washington, D.C.; and VR-57, NAS North Island, Calif. The award honors the pioneer reserve aviator who was killed in a plane crash while preparing for the first New York to Paris flight.

The 1990 **Grand Slam Award** winner is the VF-102 *Diamondbacks*. The award is presented to the AirLant squadron that demonstrates capability in live air-to-air weapons employment against towed targets and unmanned drones.

The winners of the CY-90 **Adm. Flatley Memorial Award** are *John F. Kennedy* (CV-67) and *Peleliu* (LHA-5). The award is presented annually to recognize CV/CVN and LPH/LHA ships which excel in overall contributions to aviation safety.

NAS Jacksonville, Fla., received the CY-90 **Commander in Chief's Installation Excellence Award**.

Rescues

Three Air Force crew members are safe after being rescued by the crew of an **HS-75 Det Alpha** helo when their B-52 went down in the Indian Ocean about 20 miles north of Diego Garcia. The aircraft with six crew members on board was forced to ditch after it developed mechanical problems. An SH-3H *Sea King* helo quickly located three survivors. Some wreckage was still burning and heavy fuel covered the area about 100 yards across. All three survivors were in rafts inside the wreckage area, with parachutes still attached.

After being rescued by the helo crew, the survivors were flown to

Naval Support Force, Diego Garcia, for medical evaluation.

HS-75 deployed Det Alpha in early December to provide search and rescue support for Operation *Desert Shield*.

Records

Several units marked **safe flying time**.

Squadron	Hours	Years
HMH-362:	32,000	8
HML-776:	16,000	10
HMM-162:	10,000	2
HMT-301:	94,000	16
HS-8:	33,500	10
HS-9:	43,000	13
HS-11:	13,000	4
HS-17:	18,000	6
HSL-34:	13,719	2
HSL-37:	6,600	1
HSL-41:	50,000	8
HSL-42:	40,000	4
NAS Alameda:	18,000	15
NAS Bermuda:	10,000	13
NAS Glenview:	15,000	20
NAS Mayport:	3,000	3
NAS Norfolk:	160,000	9
VA-22:	9,000	3
VA-34:	22,500	5
VA-145:	4,000	1
VA-204:	43,000	10
VAQ-138:	15,000	9
VC-1:	25,000	8
VF-213:	17,000	6
VFA-303:	47,020	16
VMA(AW)-332:	46,000	12
VMFA-115:	30,000	7
VMFA-235:	20,000	5
VMFA-333:	44,000	11
VMGR-234:	58,000	19
VP-19:	158,000	22
VP-46:	197,000	27
VP-50:	17,000	3
VP MAU Moffett:	10,000	4
VS-38:	17,000	3

Flight engineer **AMHC Bryan Morrison** of VP-48 recently reached his 5,000th hour milestone in the P-3 on a routine training flight.

Anniversary

Current and former members of the **VP-65** *Tridents* celebrated the squadron's 20th birthday at Point Mugu, Calif. VP-65 first flew P-2 *Neptunes* and then transitioned to P-3 *Orions* in 1974.

Cdr. Bernie Satterwhite, Jr., C.O., VA-185, makes his 1,000th carrier arrested landing after a Desert Storm combat mission.

Scan Pattern

On March 8, 1932, 17-year-old Jay Beasley took his first solo biplane flight in Fort Worth, Texas. Fifty-nine years later, on March 1, 1991, Hangar 1000 at NAS Jacksonville, Fla., was renamed the **Jay Beasley Maritime Patrol Hangar**. P-3 communities on the East Coast came to Jacksonville to pay tribute to the man who has logged over 20,000 flight hours, 9,400 of which were flown in P-3s.

Beasley has earned both the Navy Distinguished Service Medal and the Distinguished Public Service Medal and yet has never worn a military uniform. With the exception of six years as a pilot for American Airlines, he has been employed by Lockheed – the P-3 manufacturer – as a test pilot, instructor pilot, and consultant since 1943.

Honorary Naval Aviator No. 11, Beasley retired from the test pilot program in 1975 but was reactivated as an instructor pilot in 1980 at the Navy's request. Still a consultant for Lockheed, Beasley spends his time giving lectures to P-3 pilots. Jay Beasley's attitude and modesty was evident when he said, "Be sure to write this story about the Navy and not me."

The **Naval Aviation Depot's (NADep) Decal Shop** at Norfolk, Va., provides the artwork for decals for the fleet and squadrons. However, the final approval for insignias comes from the Naval Aviation Insignia Board which is under the auspices of the Assistant Chief of Naval Operations (Air Warfare) in Washington, D.C. All NADeps have the facilities to create decals, but the NADep in Norfolk designs most of them.

Established in the 1920s under the Bureau of Aeronautics, these shops have been providing decals for not only Navy planes and ships, but also the Air Force and the Marines.

Felix the Cat insignia

One of the oldest and most recognized decals Norfolk produced is that of "Felix the Cat," which illustrates a black silhouette of a cat releasing a bomb. This insignia was adopted by VB-2B on July 1, 1928.

Change of Command

CAEWWS: Cdr. Mark R. Milliken relieved Cdr. Christopher J. Remshak.

CinCLantFlt: Adm. Paul D. Miller relieved Adm. Powell F. Carter.

ComMAtWing-1: Capt. Louis P. Lalli relieved Capt. W. Craig Chewning.

ComPAtWing-2: Capt. William G. Bozin relieved Capt. Norbert R. Ryan, Jr.

HMT-302: Lt. Col. James A. Storey relieved Lt. Col. George G. Jacobson.

NADep Jacksonville: Capt. W. R. Albertolli relieved Capt. D. C. Wynne.

NADep North Island: Capt. Charlie Sapp relieved Capt. Robert E. Hall.

NAR Point Mugu: Capt. James E. James relieved Capt. Timothy G. Palmer.

NAS North Island: Capt. Theodore C. Sexton relieved Capt. Joseph R. DeNigro.

Saratoga: Capt. James M. Drager relieved Capt. Joseph S. Mobley.

VA-75: Cdr. Kolin M. Jan relieved Cdr. Robert E. Besal.

VAQ-130: Cdr. Jon F. Lemen relieved Cdr. Roger A. Pierce.

VAW-110: Cdr. Christopher J. Remshak relieved Cdr. Terry E. Magee.

VF-1: Cdr. Steven C. Gaylor relieved Cdr. Ron D. McElraft.

VF-33: Cdr. L. H. Schmidt relieved Cdr. D. O. Snodgrass.

VF-154: Cdr. John C. Dailey relieved Cdr. Selwyn S. Laughter.

VF-201: Cdr. Robin M. Macklin relieved Cdr. Robert A. Deutsch.

VF-202: Cdr. Jim Jones relieved Cdr. Rick Owens.

VFA-82: Cdr. E. L. Standridge relieved Cdr. Jim A. Ross.

VFA-106: Cdr. J. Barry Waddell relieved Cdr. W. N. Deaver, Jr.

VFA-125: Cdr. David C. Kendall relieved Capt. Alan R. Gorthy, Jr.

VMFA-122: Lt. Col. John M. Gautreaux relieved Lt. Col. David A. Proffitt.

VP-6: Cdr. James S. Cooper relieved Cdr. Jeffery M. O'Brien.

VP-49: Cdr. Ed Waller relieved Cdr. Bob Coonan.

VP-68: Cdr. Robert J. Walker relieved Cdr. Daniel Puzon.

VR-61: Cdr. Kevin R. McCauslin relieved Cdr. Roy A. Seth.

VS-21: Cdr. Carmine L. Petriccione relieved Cdr. Steven R. Hinson.

VT-7: Cdr. Kenneth M. Peters relieved Cdr. John D. Whitney.

In ceremonies at NAF Washington, D.C., Maryland Governor William Schaefer declared April 20, 1991, as Reserve Appreciation Day and the official kickoff of the Naval Air Reserve's 75th Anniversary. The celebration will continue throughout the summer, coming to a close in September at an anniversary ball.

ANA Bimonthly Photo Competition

Above, GySgt. Thomas Rice, HMLA-167, MCAS NR, Jacksonville, N.C., won the third bimonthly ANA Photo Contest with this shot of HMLA-269 returning to MCAS New River from USS Nassau. Two Coronado, Calif., residents received honorable mention: AW2 Paul D. Dash for his photograph, above left, of two rescue swimmers on the "string" practicing night hoisting from an HSL-47 SH-60B; and Lt. Chris Hove, who captured the S-3s, left, in close quarters aboard an aircraft carrier.

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.

PROFESSIONAL READING

By Cdr. Peter Mersky, USNR-R

Francillon, Rene J. *McDonnell Douglas Aircraft Since 1920*, Volume II. U.S. Naval Institute, Annapolis, MD 21402. 1990. 482 pp. Ill.

Originally published as one volume in 1979, this updated version of the biography of one of the world's aerospace giants *demands* space in any aviation library, along with Volume I which deals with the Douglas Aircraft Company. The two companies merged in 1967.

Dr. Francillon's work is heavily researched, and the photos and general arrangement drawings are in keeping with this series' high-quality format. The book's jacket painting is the best in the series, too, showing two F-4B *Phantoms* of VFs 151 and 161 off the Vietnam coastline at the end of the war in 1973. Wilf Hardy's artwork is unmistakable and renders full justice to the highly colorful markings of the period.

Besides McDonnell aircraft, the book also covers the products of Hughes Aircraft, known primarily for its helicopters and the eccentric nature of its founder, billionaire Howard Hughes. McDonnell-Douglas acquired the Hughes company in 1984.

McDonnell's more well-known aircraft receive full biographies, including the F-4 and F-15, but Navy jets like the F2H *Banshee* and the abortive F3H *Demon* are also covered. Short, but well-detailed paragraphs on each type's operational career add to this book's value as a reference that no researcher should be without.

Mikesh, Robert, and Shorzoe Abe. *Japanese Aircraft, 1910-1941*. U.S. Naval Institute, Annapolis, MD 21402. 1990. 293 pp. Ill. $39.95.

This new title in the growing Putnam series also has one of the more unusual subjects. Although Japanese aircraft of WW II have been well covered in recent years, Japan's rich prewar aviation heritage has seldom been described in the West.

The three decades of aircraft development in Japan before WW II are succinctly described, with emphasis on the individual types. This book has only a little operational detail, which is unfortunate considering that Japanese military aircraft were involved in combat operations in China for nearly nine years before Pearl Harbor.

Unlike the other titles in the Putnam series, this volume includes very few general arrangement drawings, which would have enhanced the book's use as a reference. The jacket cover painting is also somewhat curious, depicting two Mitsubishi Type 96 fighters which are not included in the book. Also, artist Keith Woodcock's otherwise well-rendered painting shows the pilots much too small in their capacious cockpits. These relatively minor criticisms aside, *Japanese Aircraft* fills a gap in coverage of Japanese aviation and serves as a primer for the more well-known years of the Pacific war.

WEATHER FRONT

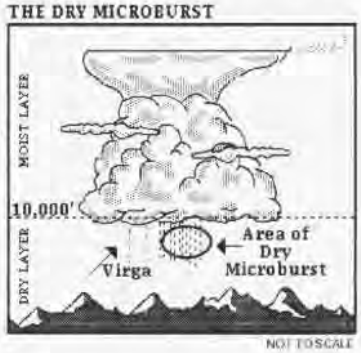
Identifying the Microburst

By Capt. Neil F. O'Connor, USN(Ret.)

A midsummer afternoon thunderstorm over your naval air station can be a serious hazard, particularly to inbounds and outbounds. Lurking beneath every thunderstorm – aside from lightning and torrential rains – are the downdrafts. Precipitation beginning to fall from the cloud is your signal that a downdraft has developed. Since air in the downdraft remains cooler than surrounding air, it is accelerated and may exceed 2,500 feet per minute. Intense downdrafts are a hazard when the outflow activity from the base of the cloud is confined to an area about the length of a runway (12,000 feet). Concentrated downdrafts within this range are called microbursts.

There are two principal types of microbursts, each with special visible characteristics: the dry and the wet microburst. The dry microburst is associated with thunderstorms formed over semiarid regions and the southwest portion of the U.S. These are cumulonimbus clouds, frequently based at 10,000 feet. The only form of precipitation is virga: water or ice particles that fall from the cloud but evaporate in the dry air before reaching the earth. If a dry microburst is occurring, it can be detected by an expanding dust ring under a virga shaft. It should be noted that a high-based thunderstorm that is producing very heavy rain at the surface is of particular concern to air safety. This was the type of cloud that produced the wind shear that downed Delta Flight 191 at Dallas, Texas, in August 1985.

THE DRY MICROBURST



NOT TO SCALE

THE WET MICROBURST

NOT TO SCALE

The wet microburst is the most easy to detect visually. The characteristics are low clouds, heavy rain, and a foot-shaped bulge between the cloud base and the surface extending outward from the center of the main rain shaft. This peculiar profile marks strong horizontal winds characteristic of a microburst that carries precipitation outward from the impact center of the downdraft. A wet microburst can also be detected when passing over a relatively dry surface by a curved plum of dust that may be raised in advance of the storm. Your skill in identifying a microburst may be the final line of defense in avoiding a microburst-related accident.

Persian Gulf

I have read *Naval Aviation News* since 1961 when I was 14 and dreamed of being a U.S. Naval Aviator. That dream was not possible but reading *NANews* all these years I feel like a tiny part of this special community.

Your magazine has helped me to know all that U.S. Naval Aviation means to the freedom and democracy of the world. So I think there is no better place to express my congratulations for the victory in the Persian Gulf and for the key part played by the U.S. Navy and its carriers and air groups. I believe the victory was possible mainly because of the strong determination of the American people, and all U.S. armed forces, who were motivated by their *ideals* – the secret weapon that Saddam would like to have.

I congratulate you for the spirit of your magazine and thank the U.S. Navy – especially Naval Aviation – in the name of the still free people in the world. Special thoughts to those heroes who gave their lives.

Fermin Gil
Blanco Encalada 5282
1431 Cap. Federal, Argentina

Desert Shield/Storm Book

As editor of the forthcoming book, *Letters from the Storm: Writings by American Men and Women in the Persian Gulf*, I am seeking first-person accounts – letters, diaries, essays, jokes, and other writings – by American troops who have taken part in *Desert Shield/Storm* or the aftermath. A portion of the proceeds from the book will be donated to a nonprofit organization that aids American service members and their families.

Contributors may send submissions on paper, IBM-compatible 3-1/2" or 5-1/4" diskette, or audiocassette to: Letters from the Storm, 4401-A Connecticut Ave., N.W., Suite 296, Washington, D.C. 20008. Include name, rank, age, address, and unit. Confidentiality will be respected. Those who wish their materials returned should include a stamped, self-addressed envelope.

Operation Sharp Edge

Your March-April 1991 issue stated **For the Record...** ["Airscoop", p. 9] that Navy support for Operation *Sharp Edge* ended on January 9, 1991, with the departure of *Nashville* (LPD-13) and HC-4 off Mamba Station. However, my squadron, VR-22 from Rota, Spain, continued flying weekly logistics missions into Springs Payne Airfield, Monrovia, Liberia, in support of the American Embassy and a Marine Corps Fleet Anti-terrorism Support Team (FAST) until February 17. During the last four days, VR-22 shuttled two C-130s into and out of Liberia for the last time, bringing in much-needed relief supplies and evacuating the FAST company to a waiting Navy C-9 in Freetown, Sierra Leone.

It is only fitting that VR-22 closed out the Navy's participation in Operation *Sharp Edge*. On May 31, 1990, a VR-22 aircraft flew a Marine Corps Forward Command Element Team into Roberts International, Monrovia, and, thus, has the dual distinction of flying the first aircraft in and the last aircraft out.

Lt. Richard A. Lynch
VR-22, Box 9334
FPO New York 09540-3610

Reunions, Conferences, etc.

HC-6 Det. 97 aboard Sylvania (AFS-2), 1965-69, planned reunion. POC: John Pierce, 6631 Halloway Ln., Lansing, MI 48917, 517-321-5102.

Princeton (CV-37) reunion planned. POC: Robert Butler, 1401 Brion Pl., Camanche, IA 52730.

HS-17 disestablishment ceremony, JUL 2, Hangar 122 Mod 1, NAS Jacksonville, FL. POC: Lt. Ronald Casper, AV 942-4600/1/6/9 or (904) 772-4600/1/6/9.

Vietnam Helicopter Pilots Assn. reunion, JUL 4-7, Reno, NV. POC: VHPA, 7 W. 7th St., Suite 1990, Cincinnati, OH 45202, 513-721-VHPA.

VAQ-132 reunion, JUL 15-20, Oak Harbor, WA. POC: Lt. Steve Nicolia, VAQ-132, NAS Whidbey Island, WA 98278, 206-257-3480.

Enterprise (CV-6) reunion, JUL 24-28, Denver, CO. POC: Mel Hofer, 13711 E. Marina Dr. #A, Aurora, CA 80014.

PB4Y1 Liberator/PB4Y2 Privateer all-squadron reunion, AUG 22-25, Santa Clara, CA. POC: Ronald Sathre, 31262 San Andreas Dr., Union City, CA 94587, 415-471-7727.

Essex (CV/CVA/CVS-9) reunion, AUG 28-31, Portland, OR. POC: Bob Morgan, 6361 S.W. 106th Pl., Ocala, FL 32676.

Aviation Supply Office 50th anniv. reunion, SEP 91, Philadelphia area. POC: Phil Sheridan, ASO, 700 Robbins Ave., Philadelphia, PA 19111.

Lake Champlain (CV/CVA/CVS-39) reunion, SEP 5-8, Burlington, VT. POC: Phillip Nazak, Box 34, Vestal, NY 13851-0034, 607-729-4783.

VPB-18 reunion, SEP 6-8, Canton, OH. POC: Ernest Moore, 384 High St., Doylestown, OH 44230, 216-658-6682.

Enterprise (CVAN/CVN-65) reunion, SEP 8-11, San Diego, CA. POC: Richard Zalinkanskas, 691 Salem Rd., Union, NJ 07083, 201-964-7608.

Thetis Bay (CVE-90/CVH-1/LPH-6) reunion, SEP 11-15, Kerrville, TX. POC: Ollie Carnes, 4023 Dumont, Odessa, TX 79762, 915-366-0097.

Assoc. of Minemen reunion, SEP 12-15, Long Beach, CA. POC: Cdr. Lyal Stryker, Box 71835, Charleston, SC 29415, 803-797-0841/553-1450.

Princeton (CVL-23) reunion, SEP 18-22, Orlando, FL. POC: Sam Minervini, 251 Marlboro Rd., Wood-Ridge, NJ 07075.

Saginaw Bay (CVE-82) reunion, SEP 19-22, San Antonio, TX. POC: Earl Homman, 4220 Old Mill Rd., Lancaster, OH 43130, 614-654-1651.

VPs 11/51/54/VB-101/VPB-101/PATSU 1-2 reunion, SEP 19-22, Lexington, KY. POC: G. K. Harmon, 1700 E. Main, Greenup, KY 41144, 606-473-7086.

EAA East Coast Fly-In, SEP 28-29, Wilmington, DE. POC: EAA East Coast Fly-In, 2002 Elnora St., Wheaton, MD 20902-2706, 301-942-3309.

Chandeleur (AV-10) reunion, SEP 25-29, Johnson City, TN. POC: Kenneth Boyd, 26300 Old Office Rd., Culpeper, VA 22701, 703-854-5076.

HS-1 40th anniversary, OCT 5, NAS Jacksonville, FL. POC: Lt. Norm Fitzpatrick, HS-1, NAS Jacksonville, FL 32212, AV 942-5356 or 904-772-5352.

Naval Airship Assoc. reunion, SEP 19-21, Pensacola, FL. POC: Robert Clancey, 10045 Fox Run Rd., Pensacola, FL 32514, 904-477-9875.

Naval Air Reserve 75th Anniv. reunion, SEP 27-29, New Orleans, LA. POC: Cdr. Barry LaVigne, COMNAVAIRRESFOR (Code 516), 4400 Dauphine St., New Orleans, LA 70146-5000, 504-948-1393.

VS-25 reunion, SEP 27-29, San Diego, CA. POC: Dick Forsythe, 53 Graymoor Ln., Olympia Fields, IL 60461, 708-748-9163.

Hoggatt Bay (CVE-75) reunion, SEP 19-22, San Diego, CA. POC: D. L. Canady, 5868 Argyle Way, Riverside, CA 92506, 714-787-8666.

Curtiss (AV-4) reunion, SEP 25-29, Mesa, AZ. POC: Francis Pavlu, 9255 N. Magnolia Ave. #293, Santee, CA 92071-3168, 619-448-3685.

Naval Air Reserve 75th Anniversary reunion, SEP 27-29, New Orleans, LA. POC: Cdr. Barry LaVigne, ComNavAirRes-For, Code 516, 4400 Dauphine St., New Orleans, LA 70146-5000, AV 363-1393 or 504-948-1393.

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