

## Air Warfare

No air combat mission can be described as typical. Each takes on a character of its own. The following report, therefore, gives only a glance at Vietnam aerial activities but it reflects the nature of air warfare circa 1967.

When they completed their strikes against the Dong Phong Thuong military storage and transshipment complex in North Vietnam, Navy pilots wrapped up what was then the biggest carrier-based assault of 1967 on enemy supply routes.

Considered by Navy sources to be one is located midway between Hanoi and Vinh on a 150-mile rail line that connects the cities.

Dong Phong Thuong was a marshaling

point for southbound supplies carried by road and rail from Hanoi, and by barges from Haiphong. It was also a major stockpile area for communist war material.

To knock out the complex, aircraft were launched on two-day coordinated strike missions from the carriers *Kitty Hawk*, *Coral Sea* and *Ticonderoga*. F-4 *Phantoms*, F-8 *Crusaders*, A-4 *Skyhawks* and A-6 *intruders* battered the target area.

Primary objectives included two rail bridges and a 200-foot pontoon bridge spanning the nearby Song Lau River, a ferry, five warehouses, four cave storage areas and supply routes.

But there were also other targets. The missions, some of them described by

returning pilots, went as follows:

On the first day, planes from CVW-9 aboard *Tico* struck the railroad bridges, scoring missile hits on the spans and cutting the rail line. Commander Billy Phillips led strike aircraft armed with air-to-surface missiles and Commander Ed McKellar headed a group carrying 1,000-pound bombs. The railroad spur just south of the main bridge was hit by Lieutenant Norman Morton, Lieutenant Junior Grade Kwang Yum and Lieutenant Junior Grade Bill Cain, all from VA-192.

VF-194 pilots Lieutenant Commander Dave Morris and Lieutenant Junior Grade Jack Allen bombed the railroad spur near the main line. "I was pulling out on my bombing run. I looked back at



Lt. Cdr. Jerry Breast

Smoke churns skyward as an A-4 Skyhawk from USS Oriskany (CVA-34) attacks an enemy target in North Vietnam in September 1967.

the target and could see that we knocked out a junction of the spur," Ltjg. Allen reported later.

Lieutenant Junior Grade Joe Phaneuf, also assigned to VF-194, was flying as fighter escort for a photo mission over the target. "I saw considerable damage to the railroad spur," he said.

Air-to-surface missiles and rockets were used to silence radar and antiaircraft sites surrounding the target. They were struck by VA-192 pilots Lieutenant Commander Mike Estocin, Lieutenant Jud Springer and Lieutenant Junior Grade Richard Millson. Several other AA and radar sites were either hit or forced to shut down by pilots on advance missions.

The next day, the railroad bypass bridge was heavily damaged by *Black Falcons* of VA-85 flying from *Kitty Hawk*. Thousand-pounders, dropped from their *Intruders*, sliced up the span.

"We dropped a number of bombs on the bridge and destroyed at least one span, and maybe more," Lieutenant Byron Hodge recalled. Another VA-85 pilot, Lieutenant Junior Grade Roger Brodt, said, "As I pulled off, I checked our hits and they looked real good. The whole bridge was covered with smoke. You couldn't even see it. Everyone hit the area fast. We were in and out almost before the enemy knew what was coming."

*Skyhawks* from VA-112 streaked in on a cable bridge and inflicted heavy damage with 500-pound bombs. "We hit the southern end of the bridge," Lieutenant Junior Grade Carl Jadrnicek said later. "I was the last in on the target and I had a bird's-eye view of our bombs coming off as they hit the bridge. I looked back on the area after I pulled out and could see it burning on the southern abutment."

Bomb assessment photography taken by reconnaissance pilots after the strikes showed that all three bridges were knocked out and the ferry sunk. Two warehouses were completely destroyed, three heavily damaged.

As a bonus, a number of boxcars from three trains — trapped on a spur by previous strikes — were destroyed or derailed.

After the missions were over, rail lines were reported out in six places, including the entrance and exit to the transshipment complex.

Besides silencing many AA batteries protecting the complex, the pilots also knocked out several surface-to-air missile facilities. Some of the Naval

Aviators watched a SAM, launched during an attack, miss its target and explode near a lightly populated area outside the target zone.

Pre-strike photography had indicated that most of the civilian population had evacuated the area while the military complex was being built up during the months before the strike.

Commander Dick Powell, who led the second-day, afternoon strike, said, "The last I saw of the missile, it was heading for earth. I rolled in and had a good bead on the bridge and dropped my bombs. As I pulled out of my run, I looked back and could see a lot of smoke. Even with heavy ground fire from gun batteries, we got in and out without a scratch."

Some were not so fortunate. A VA-85 *Intruder* crew, leading the first *Kitty Hawk* strike, was shot down after it dropped a section of the first rail bridge attacked.

From June 1965 through December 1972, Navy and Marine Corps pilots had shot down 56 MiGs. Air-to-air engagements were abundant in 1972. The Navy/Marine Corps flyers downed 24 MiGs during the year. The 57th and last enemy fighter shot down was a MiG-21 by *Midway's* VF-161 on January 12, 1973.

A Vietnam cease-fire was announced on January 23 and came into effect on the 27th. The carriers *Oriskany*, *America*, *Enterprise* and *Ranger* were on Yankee Station and cancelled all combat sorties. Dating from U.S. involvement beginning in 1961 and terminating on January 27, 1973, the Navy lost 529 fixed-wing aircraft and 13 helicopters to hostile action. The Marine Corps lost 193 fixed-wing planes and 270 helicopters to enemy action. Also on the 27th, Operation *Homecoming*, the repatriation of American POWs, began. This evolution lasted until April 1. The Viet Cong released 591 POWs, 566 of whom were military personnel. Of this number, 145 were Navy personnel. Naval Aviation personnel accounted for 144 of the 145.

Combat sorties did continue, however, in support of the Laotian government at its request. This assistance had no relationship with the Vietnam cease-fire.

After intensive bombing for more than six months, the U.S. ended its combat involvement in Cambodia on August 15, 1973.

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### III. Power Projection

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By the mid-1970s there was a declining material inventory in the Navy and difficulty in retaining experienced personnel. Even so, the F-14 *Tomcat* fighter was introduced and the Marine Corps accepted the AV-8 *Harrier*, capable of vertical and short takeoffs and landings. The F/A-18 *Hornet* was also under development. Two nuclear supercarriers were commissioned in the 1970s, USS *Nimitz* and USS *Eisenhower*.

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The end of a career was marked on February 4, 1974, when one of the Navy's most popular jets, the Grumman TF-9J *Cougar*, made final flights with VT-4 during student carrier qualifications aboard USS *Kennedy*.

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On February 20, VS-41 accepted its first S-3A *Viking*, officially replacing the S-2 *Tracker*. Meanwhile, Fighter Squadrons 1 and 2 aboard *Enterprise* sailed from San Francisco, marking the initial deployment of the Grumman F-14 *Tomcat*, the Navy's newest fighter.

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On May 12 through 14, 1975, *Coral Sea* aircraft flew protective air strikes against Cambodian mainland naval and air installations after an American merchantship, SS *Mayaguez*, with 39 crewmen aboard, was illegally seized in international waters by a Cambodian gunboat controlled by the Communist Khmer Rouge.

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On August 1, 1975, an old aircraft made a new record when a KA-3B *Skywarrior* attached to VAQ-208 completed the longest nonstop flight ever made by a carrier-based tactical jet aircraft. The flight originated at NS Rota, Spain, and ended at NAS Alameda, Calif. The A-3 covered a distance of 6,100 miles and lasted 13 hours.

In January 1976, the Navy awarded an initial funding contract to the McDonnell Douglas Corporation to begin full-scale development of the F-18 air combat fighter.

In early March, a pair of VS-22 *Vikings* landed aboard *Saratoga* off the Italian coast, completing the first Atlantic crossing by the S-3A. The planes departed NAS Cecil Field, Fla., and stopped en route at NAS Bermuda, NAF Lajes and NS Rota.

A Navy task force headed by Japan-based *Midway* made a show of force on August 21, 1976, off the coast of Korea in response to an unprovoked attack on two U.S. Army officers who were killed by North Korean guards on August 18. *Midway's* response was in support of a U.S. demonstration of military concern vis-a-vis North Korea.

On May 4, USS *America* transited the Suez Canal, the largest warship ever to do so. CV-66 was the first U.S. carrier to travel through the canal since June 1, 1967, when USS *Intrepid* navigated the waterway.

On January 13, 1977, when two AV-8A *Harriers* landed aboard *Roosevelt*, it may have been the first time in Naval Aviation history that a fixed-wing aircraft made a bow-on, downwind landing aboard a carrier at sea. This landing, with jets facing aft, demonstrated that V/STOL aircraft could land aboard a carrier without many of the conditions necessary for fixed-wing, non-V/STOL aircraft.

On April 21, 1977, *Roosevelt* returned to the U.S. from its last overseas deployment prior to her decommissioning on October 1, 1977. FDR was the first carrier to launch a jet plane on July 21, 1946.

On November 9, 1978, the Marine Corps' newest light attack aircraft, the AV-8B, flew for the first time at McDonnell Douglas Corporation in St. Louis, Mo. The B version of the *Harrier* has more than double the payload and radius of its predecessor, the AV-8A. Nine days later, the F/A-18 *Hornet* made its first flight from the same plant. The *Hornet* has a combat radius of more than 550 miles and a ferry range of more than 2,000 miles.

The Navy took delivery of the last A-4 *Skyhawk* from McDonnell Douglas on February 27, 1979, setting a record for the longest production run for any U.S. military aircraft. Built as an attack bomber and as a two-place trainer, the A-4 had been in continuous production for 26 years. The final *Skyhawk* off the production line was an A-4M destined for Marine Corps squadron VMA-331. It was the 2,960th *Skyhawk* manufactured by McDonnell Douglas.



The U.S. Marine Corps' AV8A Harrier, received in 1971, was the first V/STOL, fixed-wing plane accepted for combat use by U.S. military forces.

On October 30, 1979, the *Hornet* made its first landings at sea aboard USS *America*. During five days of sea trials 32 traps were recorded.

On November 18, *Midway* and escort ships, which had been operating in the Indian Ocean, arrived in the northern part of the Arabian Sea in connection with a crisis in Tehran, Iran, that ignited on November 4. One Naval Aviator and 14 Marines were among more than 60 Americans taken hostage in the U.S. embassy there.

Sunset came for another venerable jet aircraft, the RA-5C, on November 20 when the last *Vigilante* in the Navy made its final flight. The RA-5C, built by North American, was the Navy's only all-weather, carrier-based reconnaissance aircraft. With this last sortie, the entire reconnaissance inventory of 156 *Vigilantes* was phased out.

On December 3, *Kitty Hawk* joined *Midway* in the North Arabian Sea. The two carrier forces provided the U.S. with A-6 and A-7 attack aircraft and F-4 and F-14 fighters, which could respond to a variety of situations if called upon during the Iranian crisis.

During 1979, Navy carrier forces responded to five crisis situations around



An SH-3G Sea King pulls in divers training for aircrew readiness at NAS North Island.

the world. The following carriers responded for contingency operations due to the Iranian problems: *Constellation* (North and South Yemen); *Saipan*, (Nicaraguan turmoil); *Nassau*, (Russian combat troops in Cuba); *Kitty Hawk* (Korea); and *Midway* and *Kitty Hawk* (North Arabian Sea).

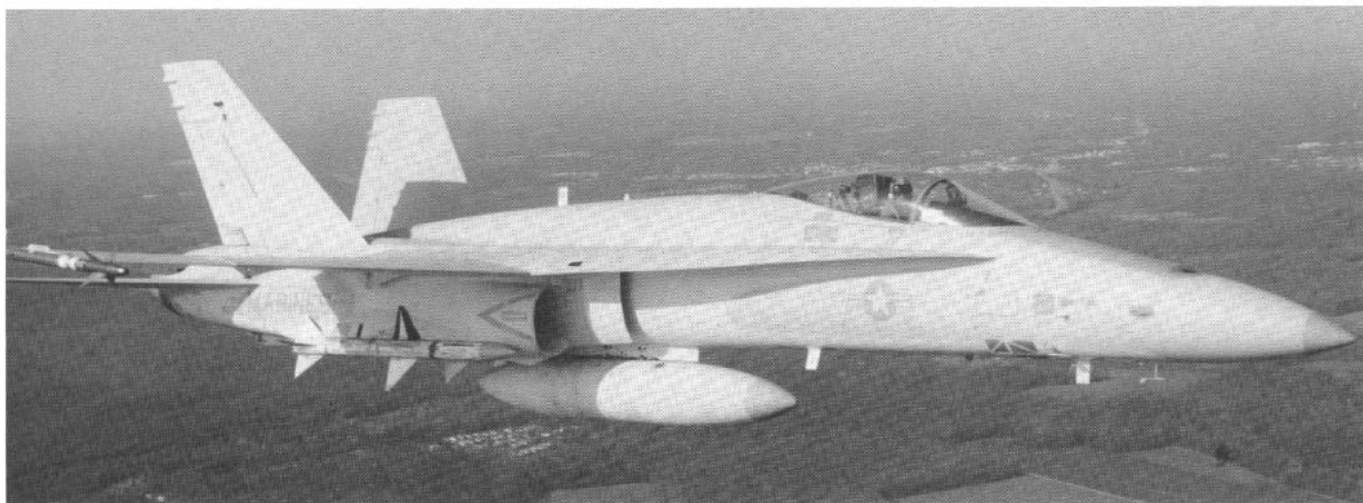
The Navy provided the sharp edge of America's power projection sword.

#### First Hornet Squadron

On November 13, 1980, VFA-125, the Navy's first F/A-18 *Hornet* squadron, was established at NAS Lemoore, Calif. The new unit was tasked with training Navy and Marine Corps personnel to fly and maintain the *Hornet*.

By the end of 1980, carrier operations conducted in connection with the Iranian crisis consisted of 10 tours by eight attack carriers in the Indian Ocean/Arabian Sea. The carriers accumulated a grand total of 723 days on station. Those with over 100 contingency days on station during the year included *Eisenhower*, with two tours totaling 199 days; *Midway*, with two tours representing 118 days; *Constellation* 110 days; and *Nimitz* 108 days. Other carriers involved in contingency operations in the Indian Ocean were *Coral Sea*, *Ranger*, *Independence* and *Kitty Hawk*.

A test pilot at the Naval Air Test Center, NAS Patuxent River, Md., flies an F/A-18 *Hornet* during Board of Inspection and survey trials.



On February 19, 1981, Fighter-Attack Squadron 125 (VFA-125) became the first squadron to receive the F/A-18 *Hornet*.

AV-8B *Harriers* were deployed as a Marine Air Group aboard an amphibious assault ship, USS *Nassau*, for the first time on April 13. MAG-32, composed of VMAs 231 and 542, began a Sixth Fleet deployment.

The *Blue Angels* celebrated their 35th Anniversary on June 15, 1981. The Navy's Flight Demonstration Squadron flies A-4 *Skyhawks*.

Two *Tomcats* from VF-41 aboard *Nimitz* made the headlines when they shot down a pair of Libyan SU-22 *Sukhoi* aircraft over international waters on August 19. The F-14s were on a reconnaissance mission for a missile firing exercise being conducted by U.S. ships from two carrier battle groups when they were fired on by the Libyan planes. The CVW-8 fighters were piloted by Commander Hank Kleemann and Lieutenant Larry Muczynski with their respective RIOs, Lieutenants Dave Venlet and Jim Anderson.

During 1981, Naval Aviation units and carrier forces were clearly visible around the globe. They responded to a number of crisis situations. These included the

hostage situation in Iran, contingency operations in the Indian Ocean, tension between Israel and Syria over Lebanon, the assassination of President Sadat of Egypt, and Vietnamese boat refugee rescue efforts.

On January 8, 1982, the F/A-18 *Hornet* made its first fully automatic landing on a simulated carrier deck field at NATC Patuxent River, Md.

USS *Carl Vinson*, third *Nimitz*-class carrier and the Navy's fourth nuclear-powered carrier, was commissioned on March 13.



The Skyhawk flying Blue Angels pass San Francisco's Golden Gate Bridge.

On June 30, one of the last photographic squadrons, VFP-63, was disestablished. The only F-8 and photographic squadrons still in existence at the time were reserve squadrons VFPs 206 and 306.

In late June, the greatest concentration of U.S. Naval Air power in the Mediterranean Sea took place when the battle group of *Forrestal* and *Independence* joined with *Eisenhower* and *Kennedy*. These ships and supporting elements steamed together in the eastern Mediterranean for several days before *Ike* and *JFK* departed for the U.S.

In late September, the Naval Air Systems Command awarded to McDonnell Douglas, teamed with British Aerospace and Sperry, a pre-full-scale development contract for the undergraduate jet flight training system designed around the *Hawk* aircraft.

October 28, 1982, signaled the 30th anniversary of one of the Navy's most venerable planes, the A-3 *Skywarrior*. The aircraft had operated as a heavy-attack bomber, radar trainer, electronics reconnaissance platform, tanker, electronics jammer, photoreconnaissance platform, airborne weapons test bed and VIP transport.

USS *Carl Vinson*, the newest addition to the carrier fleet, began an odyssey that epitomized Naval Aviation in 1983. Beginning March 1, with CVW-15 aboard, the ship circled the world on the carrier's maiden voyage. The ship traveled 60,000 miles over the Atlantic Ocean, Mediterranean Sea, Indian Ocean, South China Sea, Sea of Japan and the Pacific, visiting four continents in the process. The deployment served to display U.S. Naval Air power and its

An F-14A *Tomcat* performs touch and goes aboard USS *Forrestal*.



ability to respond to crises in all parts of the globe.

An older carrier, *Coral Sea*, did likewise but in a counter-clockwise direction departing San Francisco on March 21. The ship met *Vinson* in the Indian Ocean, bringing together the newest carrier in the fleet and one of the oldest. *Coral Sea*'s home port changed from Alameda, Calif., to Norfolk, Va.

In late March, fighter-attack squadrons were redesignated strike-fighter squadrons.

VFs 201 and 202, Naval Reserve fighter squadrons flying the F-4N *Phantom*, participated in *National Week '83* exercises, marking the first time that tactical air reserve units conducted joint operations with the Sixth Fleet. The squadrons deployed from NAS Dallas, Texas, to NAS Sigonella, Sicily — via NAS Oceana, Va.; Gander, Newfoundland; Lajes, Azores; and Rota, Spain.

In August 1983 the White House announced the names of the Navy's next two nuclear-powered aircraft carriers, under construction at the Newport News Shipbuilding and Dry Dock Co. *Abraham Lincoln* (CVN-72) is scheduled for delivery in 1989 and *George Washington* (CVN-73) in late 1991.

On August 29, the first flight of the AV-8B *Harrier II* production model was conducted at the McDonnell Douglas plant in St. Louis.

### Grenada and Lebanon

U.S. forces experienced combat in 1983 in two parts of the world, Grenada and Lebanon. Beginning on October 25, A-7 *Corsairs* from CVW-6's VA-15 and VA-87 aboard USS *Independence* flew close air support missions for about a week, assisting in the U.S. invasion of Grenada. The recently-established Marxist government in Grenada had shown signs that it would allow the island to become a Cuban-Soviet outpost. The invasion succeeded.



An S-3A Viking, painted in bicentennial colors, banks over Southern California in 1976.

Robert L. Lawson

*Independence* entered the spotlight again in December along with *Kennedy* and its air wing, CVW-3, this time in the Mediterranean as part of the peacekeeping force positioned off the Lebanese coast. The Marine Corps barracks in Beirut had been bombed on October 23, killing 241 U.S. servicemen. A second attack killed 58 French soldiers, also part of the United Nations force in the area.

Tensions rose. Navy F-14s which made periodic photoreconnaissance runs over rebel positions around Beirut were occasionally fired on despite warnings from the U.S. government. Therefore, in a concerted effort on December 4, *Kennedy* and *Independence* planes struck Syrian anti-aircraft gun and missile sites and other targets. Opposition was heavy. A VA-85 *Intruder* was shot down. Lieutenant Mark A. Lange, the pilot, perished. Bombardier/navigator Lieutenant Robert O. Goodman survived but was captured by the Syrians. He

became the first POW in Naval Aviation since the end of the Vietnam conflict 10 years earlier. Commander Ed Andrews, Commander CVW-6, led the attack. His A-7 was hit by enemy fire but he ejected and was rescued from coastal waters.

The two aircraft represented the first loss of Navy fixed-wing aircraft in combat since Vietnam.

VA-85's Lt. Goodman, NFO aboard the A-6 shot down during the attack on Syrian targets on December 4, 1983, was returned to the U.S. on January 4.

On January 12, the first AV-8B *Harrier* of a projected order for 336 of the V/STOL aircraft, was received at MCAS Cherry Point, N.C., by VMAT-203. With over 25 percent of the structural weight composed of carbon epoxy composite material, the AV-8B offers twice the payload and radius of its predecessor, the AV-8A.

The newly configured S-3B Viking made its first flight at Lockheed's Palmdale, Calif., facilities in mid-September. The latest version of the *Viking* features improved avionics and weapons systems, including the *Harpoon* missile.

The Navy signed a contract to initiate full-scale development of the T-45TS jet flight training system by McDonnell Douglas in October. The system's aircraft, the jet-powered T-45, will replace the T-2Cs and TA-4Js used by the training command in the intermediate

and advanced phases of jet flight training.

VF-301's acceptance of its first F-14 *Tomcat* in October marked the introduction of the F-14 into the Naval Air Reserve Force as part of the Navy's total force defense concept.



Marine A-4M Skyhawks in echelon. A-4s first flew in 1954.



On October 27, the nuclear-powered carrier USS *Theodore Roosevelt* (CVN-71) was launched at ceremonies at Newport News Shipbuilding. A week later, the keel was laid for USS *Abraham Lincoln* (CVN-72). *Lincoln* will be followed by USS *George Washington* (CVN-73).

In a typical example of power projection, USS *Nimitz*, with CVW-8 embarked, sortied in response to national tasking on November 30. After the Cuban government denied the U.S. Coast Guard permission to tow a U.S. vessel which had lost power and drifted into Cuban waters, a brief show of force by *Nimitz* diffused the incident.

Throughout 1984, Navy carriers and their air wings deployed to five key global areas: the Atlantic and Indian Oceans, the Western Pacific, the Mediterranean Sea, and off the Central American coast.

Jet technology continued to be fine-tuned in 1985, and the contributions of jet aircraft to Naval Air's storehouse of power highlighted the year.

On January 30, VMA-331, the first of eight AV-8B *Harrier II* squadrons, was established at MCAS Cherry Point, N.C. This transition from the A-4M *Skyhawk* marked the beginning of tactical service for the Marine Corps' newest V/STOL aircraft. By September, the *Bumblebees* had received their authorized full complement of 15 aircraft and had completed their first weapons training deployment.

The AV-8B, an improved version of the AV-8A, has increased range and payload. Extensive aerodynamic and systems changes have achieved accurate, first-

An R. G. Smith painting of a T-45 Hawk.

pass weapons delivery; improved vertical and short takeoff and landing capability; and reduced pilot workload.

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The first two operational F/A-18 *Hornet* squadrons on the East Coast flew into their new home at NAS Cecil Field, Fla., on February 1 from NAS Lemoore, Calif., where their personnel were trained on the new strike fighter. The arrival of the VFA-131 and 132 aircraft marked a major step toward replacing the Navy's A-7E *Corsair IIs* and the Marine Corps' F-4 *Phantom IIs*.

The F/A-18 deployed overseas for the first time on February 21. USS *Constellation* (CV-64), with VFAs 113 and 125 embarked, became the first aircraft carrier to have *Hornets* assigned to its air wing. The 20 F/A-18s replaced two squadrons of A-7E *Corsair IIs*. In addition to performing both the fighter and attack roles, the *Hornet* is easier to maintain, which reduces maintenance man-hours per flight hour by 50 percent over other carrier-based aircraft.

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An EA-3B (BuNo 146451) from VQ-1 Det C aboard USS *Carl Vinson* (CVN-70) turned 25 years old on February 25. Dubbed "Aging Beauty," this *Skywarrior* has recorded over 12,000 flight hours and completed over 1,100 arrested landings. These milestones serve as testimony to the durability of this venerable jet aircraft.

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The Navy's tactical training program was expanded on April 29 when the first three *Kfir* fighters from Israel were accepted by VF-43 at NAS Oceana, Va. The East Coast adversary squadron will eventually operate 12 of the delta-winged fighters, which resulted from the marriage of the basic French *Mirage 5* airframe and the American General Electric J79 engine. VF-43 also operates A-4s, F-5s, T-38s and T-2s.

The One Navy concept got a boost on October 19 when eight F/A-18s were delivered to VFA-303, NAS Lemoore, Calif., the first Naval Reserve squadron to transition to *Hornets*.

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Navy technical evaluation of the S-3B *Viking* began in October 1985. Lockheed's S-3B features improved avionics and weapons systems, including a new acoustic processor, expanded electronic support measure coverage, increased radar processing, a new sonobuoy receiver system, electronic countermeasures, and the *Harpoon* missile.

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On October 10, 1985, America fought back against terrorism — and won. After three days of terror, tragedy and intrigue, President Ronald Reagan gave the go-ahead to bring the hijackers of an Italian cruise liner, *Achille Lauro*, to justice after they killed a U.S. passenger aboard the ship.

Four F-14 *Tomcats* from USS *Saratoga* (CV-60) intercepted the getaway plane, a chartered EgyptAir 737 jetliner. A Navy E-2C *Hawkeye* surveillance aircraft radioed the 737 to follow the Navy planes to Sigonella, Sicily, where Italian authorities took the four hijackers into custody.

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*The evolution from pistons to jets has been technologically significant, and scientific advancements continue to expand the capabilities of jet aircraft. These sophisticated weapon systems — teamed with other state-of-the-art naval aircraft — comprise a winning combination of air power to maintain Naval Aviation's supremacy of the skies.*

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F-14A Tomcats "salute" USS Nimitz (CVN-68) as the carrier is relieved after spending 144 days on station in the Indian Ocean.

