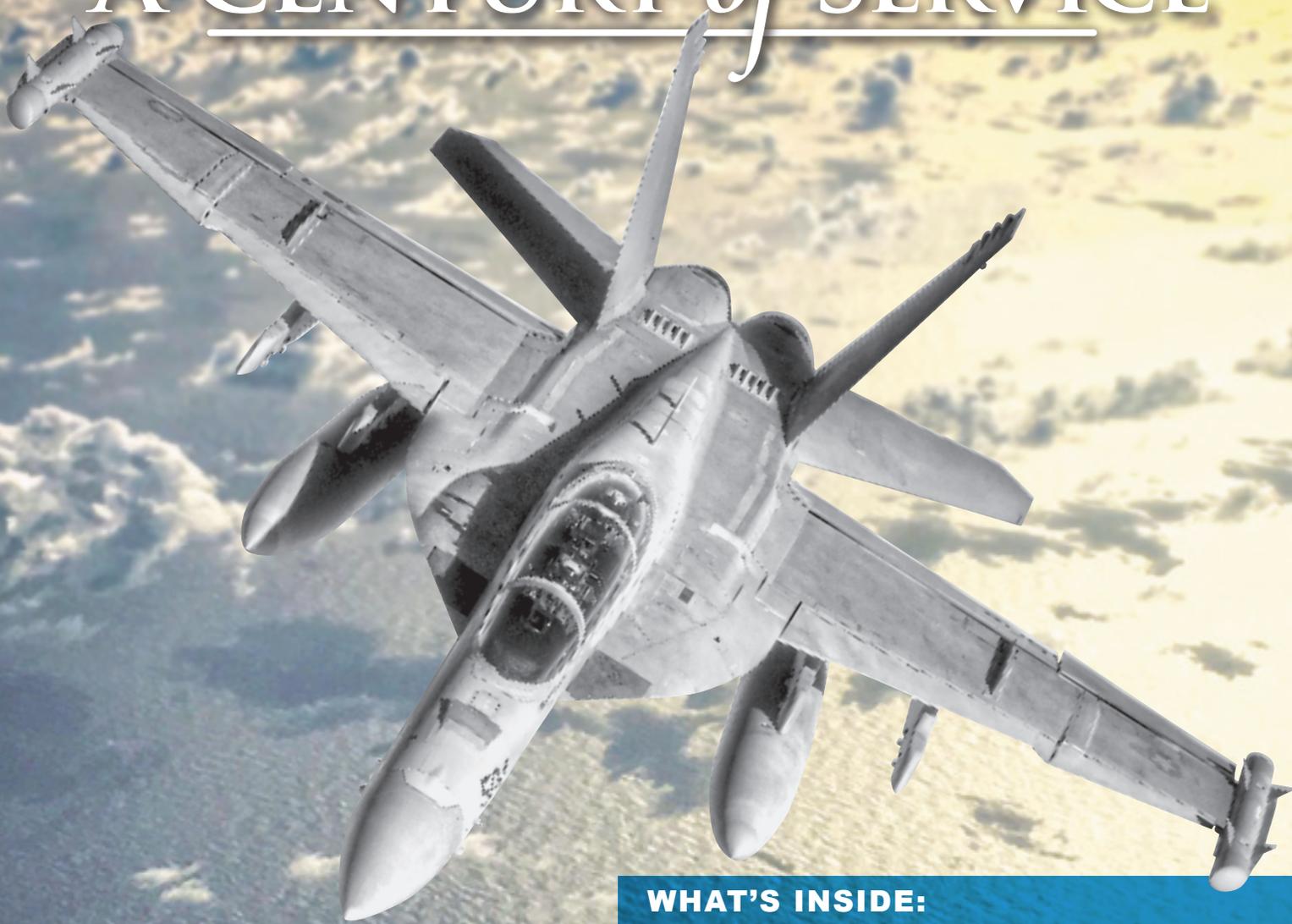


NAVAL AVIATION NEWS

THE FLAGSHIP PUBLICATION OF NAVAL AVIATION

U.S. NAVAL AIR FORCE RESERVE: A CENTURY *of* SERVICE



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- ▶ **Air Boss: Focus on Safety**
- ▶ **CH-53E Reset**

SUMMER 2016



The B-25J Mitchell "Panchito," owned by Larry Kelley and housed at the Delaware Aviation Museum, conducted qualitative evaluation exercises with the Naval Test Pilot School Class 149 between May 31-June 9. A Sailor stationed at Naval Air Station Patuxent River captured Panchito on the taxiway at sunrise.

U.S. Navy photo by AE1 Alicia Glende

NAVAL AVIATION NEWS

SUMMER 2016

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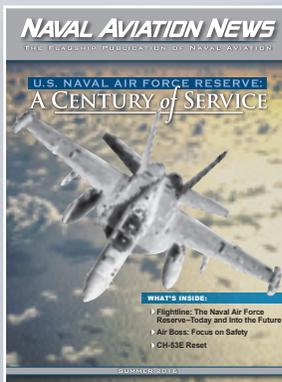
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ON THE COVER



This issue celebrates the 100th anniversary of the U.S. Naval Air Force Reserve (NARF), beginning with the cover photo of an EA-18G Growler of the "Star Warriors" of Electronic Attack Squadron (VAQ) 209, photographed after an in-flight refueling between Hawaii and Guam. Read about VAQ-209's first expeditionary deployment with the EA-18G Growler on page 30. In Flightline, Rear. Adm. W. Michael Crane highlights the adaptive role of the Reserve Component in accomplishing the Naval Aviation mission. In this issue's main feature, part one of a two-part commemorative series, long-time contributor Cmdr. Peter B. Mersky, USNR (Ret.) chronicles the history of the Naval Air Reserve since its inception in 1916 through the Berlin Crisis of 1962. (Cover photo by Lt. Cmdr. Pete Scheu)

On the Back Cover: *Sailors work on an EA-18G Growler assigned to the "Wizards" of Electronic Attack Squadron (VAQ) 133 in USS John C. Stennis (CVN 74) hangar bay for routine maintenance checks. Providing a ready force supporting security and stability in the Indo-Asia-Pacific, John C. Stennis is operating as part of the Great Green Fleet. (U.S. Navy photo by MC3 Kenneth Rodriguez Santiago)*

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Naval Aviation News (USPS 323-310; ISSN 0028-1417) is published quarterly for the Chief of Naval Operations by the Naval Air Systems Command. Periodicals postage is paid at Washington, D.C., and additional mailing offices.

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Postmaster: Send address changes to *Naval Aviation News*, NAVAIR Public Affairs Office, 47123 Buse Road, Building 2272, Suite 346, Patuxent River, MD 20670.

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Flightline

The Naval Air Force Reserve: Today and Into the Future

Rear Adm. W. Michael "Sky" Crane
Commander, Naval Air Force Reserve
Deputy Commander, Naval Air Force Pacific Fleet
Vice Commander, Naval Air Forces

Over the past century, the Naval Air Force Reserve (NAFR) has played, and continues to play, a large part in readiness for Naval Aviation as a whole. Through the decades of ever-changing, ever-evolving budgetary environments, NAFR has adapted and flexed to continue to provide capability and capacity as part of a total force solution to meet the Navy's warfighting requirements.

What NAFR looks like today doesn't reflect what it looked like a decade ago, or a decade before that. With today's budgetary environment pressurized even more than before, NAFR will continue to evolve and change to provide readiness options at best costs for the Naval Aviation Enterprise (NAE). NAFR currently has squadrons with missions ranging from training future and current pilots to providing strategic and operational warfighting readiness and manpower.



An F/A-18D Hornet, assigned to the "Fighting Omars" of Fighter Squadron Composite (VFC) 12, prepares to make an arrested landing on the flight deck of Nimitz-class aircraft carrier USS Ronald Reagan (CVN 76).

U.S. Navy photo by Senior Chief Photographer's Mate Mahlon K. Miller

“To perform its mission successfully, Naval Aviation must be organized, manned, trained and equipped as a total force. This total force will include the Reserve Component now and into the future.”

The Tactical Support Wing provides a strategic reserve of tactical aviation units with operational depth. Strike Fighter Squadron (VFA) 204 is capable of executing its primary strike fighter mission and also regularly executes advanced adversary missions along with Fighter Squadron Composite (VFC) 12, VFC-13 and VFC-111 in support of Active Component operational training requirements. Electronic Attack Squadron (VAQ) 209 recently returned from a two-month deployment to the Pacific where the squadron executed its primary airborne electronic attack mission. (See page 30 for the story.) VAQ-209 recently transitioned from the EA-6B Prowler to the EA-18G Growler, which gives proof today that NAFR squadrons evolve and change as required by the NAE to execute Navy operational requirements.

The Maritime Support Wing (MSW) Patrol Squadrons (VP) 62 and VP-69 have been called on year after year to support the fleet. They currently provide a strategic reserve and an operational reserve capacity in maritime patrol and reconnaissance. Currently both P-3C squadrons are supporting the Active Component’s transition to the P-8A Poseidon, most recently completing a deployment to Kadena Air Base in Okinawa, Japan. MSW’s Helicopter Sea Combat squadron (HSC) 85 provides dedicated rotary wing support to Special Operations Forces (SOF) and is constantly prepared to deploy and support SOF. MSW’s Helicopter Maritime Strike Squadron (HSM) 60 provides a strategic reserve of anti-submarine warfare and anti-surface warfare combat aircraft, and one of its detachments recently returned from maritime support in the 4th Fleet area of responsibility.

The Fleet Logistics Support Wing represents 100 percent of the Navy’s intra-theater air logistics capability and medium-lift capability, and provides solutions to short notice tasking or mission/load requests at no cost to the Active Component. Their mission set has no counterpart in the Active Component

and remains an integral part of fleet readiness.

Current readiness challenges can be attributed to a number of complex factors over time. Fifteen years of continuous combat operations have put more hours on our Navy’s aircraft in less time than expected. Aging aircraft force us



An MH-60R Seahawk from Maritime Strike Squadron 60 taxis in on board Naval Air Station Norfolk.



A C-130T Hercules from Fleet Logistics Support Squadron 64 taxis in on board Naval Air Station Norfolk.

to carefully and strategically manage flight hours while maintaining readiness. These issues will take capital investments to resolve. Additionally, these challenges have directly impacted NAFR, which has adapted yet again. As all of Naval Aviation continues to evolve, NAFR will also continue to adapt while moving forward.

To perform its mission successfully, Naval Aviation must be organized, manned, trained and equipped as a total force. This total force will include the Reserve Component now and into the future. This begs many questions. The first question—looking to the future—is now the time to recapitalize the Reserve Component? If so, is now the time for the Reserve Component to bring more capacity to Naval Aviation? Also, how best will NAFR be a part of the total force solution to deliver strengthened naval power at best cost? NAFR is cost efficient because of its use of Selected Reserve personnel who provide high levels of experience at less cost (think fully ready, but only called when needed). Naval Aviation continues to evolve over time, and in the near future the Navy is developing a strategy to use live, virtual and constructive (LVC) training to more effectively and efficiently train the Navy's future pilots against the latest threat capabilities. Although the plan is still in development, NAFR expects TSW squadrons to play a significant role in the "live" portion of the LVC training based on their extensive experience in the adversary mission. But what other needs might come as Naval Aviation changes over the coming decades? What does NAFR look like 10, 20, 30 years from now? A Navy that is ready today and prepared for the future is essential to operating in the dynamic environment that is our world. I expect that NAFR will continue to adapt and flex, just as it always has done, to support the world's finest Navy. 🦅



Rear Adm. Michael Crane became Commander, Naval Air Force Reserve; Deputy Commander, Naval Air Force Pacific Fleet; and Vice Commander, Naval Air Forces in November 2015. He is a 1984 graduate of Virginia Tech. He then worked as a civil engineer through 1986. He was commissioned an ensign in December 1986 through Aviation Officer Candidate School, and designated a naval aviator in October 1988.

His career as a naval aviator includes assignments at Fighter Squadron (VF) 101, VF-143, VF-43, Fighter Squadron Composite (VFC) 12, Fleet Logistics Support Squadron (VR) 56 and culminated in command of VFC-12. Subsequent command tours include Navy Reserve (NR) Commander Strike Force Training Atlantic, Navy Expeditionary Combat Command's Expeditionary Training Group and NR U.S. Fleet Forces Command (USFFC) Joint Task Force Detachment 100.

Non-command tours include NR Commander Second Fleet (C2F), Joint Forces Air Component Commander, Reserve Component (RC) Director for the merger of USFFC and C2F, RC USFFC and C2F Chief Staff Officer, and NR Chief of Naval Operations, Operations and Plans (N3/N5) Chief Staff Officer. He served on active duty as the director of operations for the Air Launched Weapons Team to manage weapons readiness as an enterprise under Commander, Naval Air Forces (CNAF). Additionally, he served as a facilitator for CNAF's character and integrity initiative.

Promoted to flag rank in October 2013, Crane served as deputy commander, Naval Air Force Atlantic through October 2015.

His education includes Joint Professional Military Education and a Masters of Arts in National Security and Strategic Studies from the U.S. Navy War College. He has accumulated more than 3,500 flight hours in multiple U.S. Navy aircraft. His awards include the Legion of Merit, Meritorious Service Medal, Navy Commendation Medal, Navy Achievement Medal and other personal and unit awards and citations. 🦅

Grampaw Pettibone

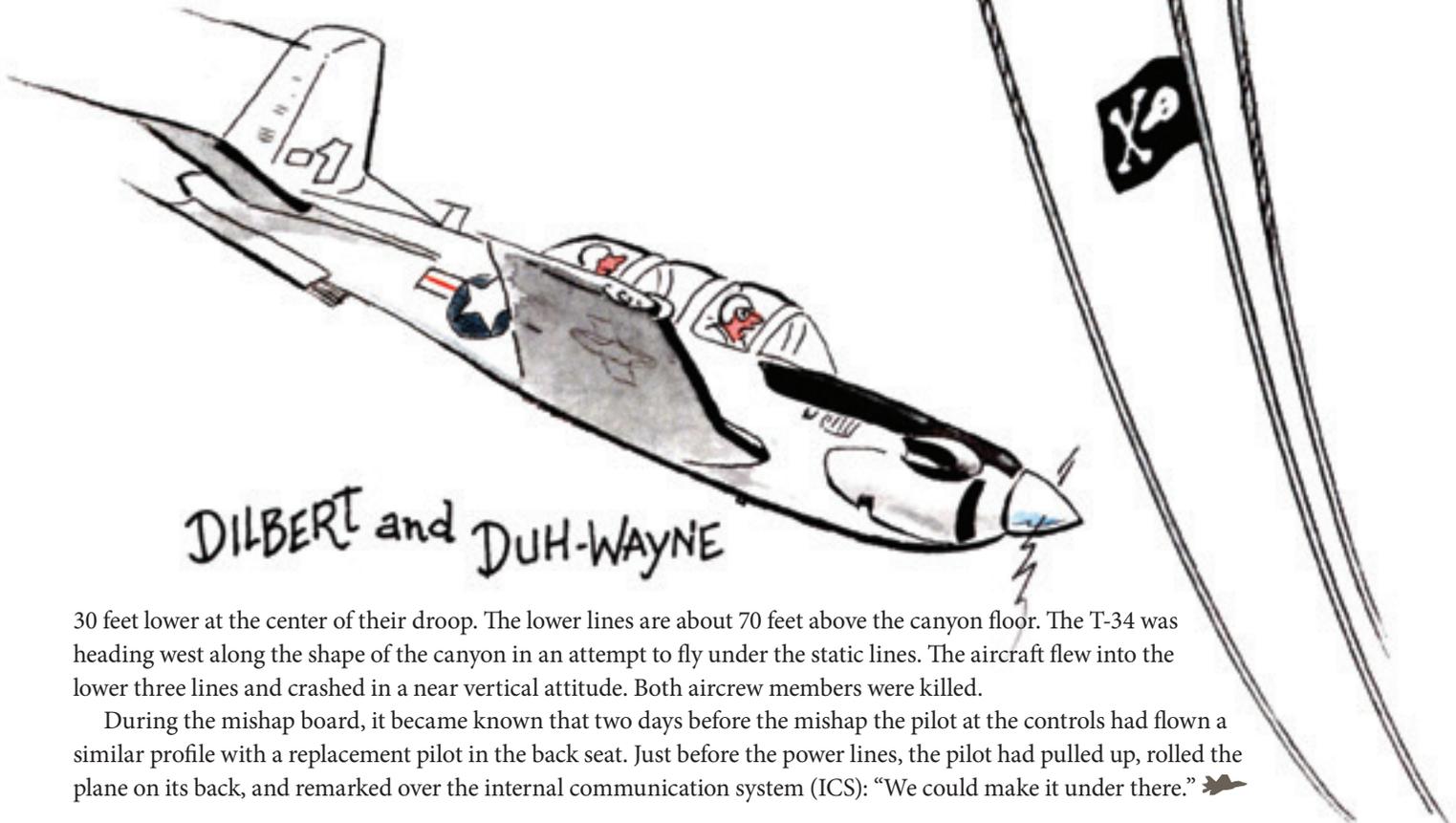
Gramps from Yesteryear: July-August 2006

Illustration by *Ted Wilbur*

Power Line Peril

A Fleet Replacement Squadron T-34C Turbo Mentor, crewed by two instructor lieutenants exited the target area after performing forward air controller (FAC)(A) duties for a division of F/A-18 Hornets practicing close air support. The T-34 did not fly a direct profile back to base; rather, it started its journey home by flying along a canal repeatedly, descending lower with each pass. The pilot, who had a history of flying unbriefed air combat maneuvers (ACM) in the T-34, then headed for a nearby lake where he flew just feet above the water for nearly a minute. After that, the T-34 entered a canyon area, sometimes flying below the canyon walls.

Power lines run across this particular canyon. The towers have two static lines that run nearly straight across the top and three power wires that sag approximately



30 feet lower at the center of their droop. The lower lines are about 70 feet above the canyon floor. The T-34 was heading west along the shape of the canyon in an attempt to fly under the static lines. The aircraft flew into the lower three lines and crashed in a near vertical attitude. Both aircrew members were killed.

During the mishap board, it became known that two days before the mishap the pilot at the controls had flown a similar profile with a replacement pilot in the back seat. Just before the power lines, the pilot had pulled up, rolled the plane on its back, and remarked over the internal communication system (ICS): "We could make it under there." 🗨️



Grampaw Pettibone Says ...

"He thought he could make it under there."

It's a shame when a Brownshee writes his own epitaph, isn't it? 🗨️

Air Boss: Focus on Safety

SAN DIEGO—Summer safety is a topic across the Navy as we enjoy longer days, barbecues and watersports, but it is aviation safety that has my full attention.

The end of May, beginning of June was a difficult time for Naval Aviation, culminating with the loss of Blue Angel #6, Marine Capt. Jeff “Kooch” Kuss, in a tragic mishap during an air show practice flight in Smyrna, Tennessee, June 2. Capt. Kuss was an incredible Marine, husband and father, and an inspiration to so many; his loss will be felt across the nation. Being a naval aviator is an inherently dangerous profession and our aviators knowingly accept that risk in service to their nation, but it still pains us greatly when we experience the untimely loss of a valued aviator and shipmate. Our heartfelt condolences go out to his family, friends, fellow Marines and Blue Angel



Vice Adm. Mike Shoemaker

U.S. Navy photo by Krishna M. Jackson

teammates. That loss was the third Class A flight mishap in an eight-day period that began with Strike Fighter Squadron (VFA) 211’s mishap on May 26 [when four crew ejected and were recovered after their two F/A-18s crashed off the North Carolina coast] and

Electronic Attack Squadron (VAQ) 133’s hard landing May 29.

At this time, there is no indication that these three incidents have a common thread, nor a direct connection to any readiness or resourcing issues. These three mishaps will be thoroughly investigated, and we will learn from them all. Regardless of trends or causal factors, three mishaps in just over a week warrants awareness, attention and leadership focus. If you compare the aviation mishap rates this year with our fiscal year 2015 data, we were in a similar situation. Entering the

second half of the year on a good safety glideslope with two class Alpha mishaps October 2014-March 2015, we added nine more class Alpha mishaps in the next six months. I am not interested in repeating fiscal year 2015’s safety “finish.” I am relying on my Naval Aviation leadership to engage their air wings and squadrons to emphasize a focus on safety. They’ll do this by encouraging open discussions about the recent mishaps with ready rooms and taking a deeper look at both operational risk management and crew resource management, factoring in how the recent mishaps might relate to each squadron’s current operations.

History has demonstrated that trying to explain why we got two-thirds of the way through the fiscal year with only one class A flight mishap is just as difficult as trying to explain or connect the last three mishaps. Naval Aviation is an unforgiving business, but I have full trust and confidence in my leadership team’s ability to help arrest these trends.

Vice Adm. Mike Shoemaker is Commander, Naval Air Forces. ✈️

Ford Completes Turn Ship Milestone



U.S. Navy photo by MC3 Cathrine Mae O. Campbell

Tug boats maneuver the aircraft carrier Pre-Commissioning Unit Gerald R. Ford (CVN 78) into the James River during the ship’s turn ship evolution.

NEWPORT NEWS, Va.—Pre-Commissioning Unit (PCU) Gerald R. Ford (CVN 78) completed its turn ship evolution June 11, a major milestone that brings the

country’s newest nuclear powered aircraft carrier another step closer to delivery and commissioning later this year.

“Turning the ship is an opportunity

for the crew to demonstrate for the first time all the procedures required to get the ship underway safely,” said Commanding Officer Capt. Richard McCormack. “Our new pier position will allow the ship and shipyard team to complete the remaining pier side testing required before our upcoming sea trials.”

This operation marks the first time Ford has moved from its pier since coming out of dry dock in November 2013. The ship’s stern now faces the James River.

One of the most important accomplishments of the turn ship evolution was a “Sally Test,” which involves precision draft readings and confirms that there is adequate stability for safe underway operations at sea.

“Turn ship is a big event and the ship



U.S. Navy photo

In Memoriam

We remember U.S. Marine Corps Capt. Jeff "Kooch" Kuss, 32, who died June 2 when the F/A-18C Hornet he was piloting as a member of the Blue Angels crashed during a practice flight in Smyrna, Tenn. A native of Durango, Colo., Kuss joined the Marine Corps in 2006 and received his flight wings in November 2009. He graduated from the U.S. Navy Fighter Weapons School (TOPGUN) in September 2012, and deployed in support of Operation Enduring Freedom in Afghanistan. Kuss joined the Blue Angels in September 2014 and was the opposing solo pilot at the time of his death. He accumulated more than 1,400 flight hours over his career, earning the Strike Flight Air Medal and Navy and Marine Corps Achievement Medal in addition to various personal and unit awards. ✈️

moored with the port side to the pier will be a constant reminder that we are one big step closer to taking the world's most capable warship to sea for the first time," said Cmdr. Alan Feenstra, chief engineer.

For more news from PCU Gerald R. Ford (CVN 78), visit www.navy.mil/cvn78/ or www.facebook.com/USSGeraldRFord.

Written by Mass Communication Specialist 3rd Class Cathrine Mae O. Campbell. ✈️



Lockheed Martin Fort Worth Texas photo by Liz Kaszy

The first F-35 for the Royal Netherlands Air Force flies over north Texas on its first flight.

F-35 Program Shows 'Continuing Progress in All Aspects'

WASHINGTON—The F-35 Lightning II joint strike fighter program is on track and demonstrating "continuing progress in all aspects," Frank Kendall, undersecretary of defense for acquisition, technology and logistics, said May 24.

Kendall spoke during a conference call with reporters after an F-35 chief executive officer roundtable meeting in Phoenix.

"There has been no change in our schedule expectations to note," he said.

The aircraft's cost continues to come down in production, consistent with earlier projections, Kendall said.

"We remain focused on the sustainment part of the program," he said. "Increasingly, in fact, we're turning our emphasis to that because that is where we still see opportunity to further reduce cost."

International Partners

The roundtable brought together a variety of stakeholders, including international partners, CEOs of the major industrial participants, U.S. military officials and Office of the Secretary of Defense (OSD) leadership, Kendall said.

He noted two F-35s arrived in the Netherlands earlier this week. According to the F-35 program, the planes will be in the Netherlands for three weeks for testing and to take part in an air show to introduce the fifth-generation fighter to the Dutch people.

The CEO roundtables, which are held annually, promote open communication

between senior service, OSD and industry leadership on events and issues that have or could impact the F-35 program.

Evolving Program

The joint program office will be evolving and changing as the activities that are being conducted for the F-35 change, Kendall said.

"There will be a move toward follow-on development [and] continued modernization of the aircraft, which will occur throughout its life," he said.

The F-35 is expected to be ready for its final test phase in 2018, Kendall said.

"We reviewed the status of operational test planning, there is a consensus that is likely to occur in calendar year 2018, given the realities of the schedule at this time," he said.

Flexibility is the key, Kendall said, as the program moves forward, evolves and seeks to be the most cost-effective model for sustainment.

Kendall said he has received great feedback from partners.

"The F-35 has clearly demonstrated its value to the operational community," he said. "Its operators are willing to take advantage of its many features and capabilities that they don't have in current aircraft."

The Air Force, he said, is on track to make initial operational capability later this year.

Written by Lisa Ferdinando, writer for DoD News, Defense Media Activity. ✈️

Naval Aviation Forces Now Striking ISIL from Two Theaters as USS Boxer Harriers Join Fight

ARABIAN GULF—U.S. Marine Corps AV-8B Harriers flying from USS Boxer (LHD 4) in the Arabian Gulf joined strike aircraft operating from USS Harry S. Truman (CVN 75) in the Mediterranean Sea June 16.

This marks the first Naval Aviation combat strike missions of Operation Inherent Resolve (OIR) launched from Navy warships in two different operational theaters.

The Harriers are assigned to Marine Medium Tiltrotor Squadron (VMM) 166, the aviation combat element of the 13th Marine Expeditionary Unit (MEU), embarked in the Boxer Amphibious Ready Group (ARG).

“These missions from the flight decks of USS Boxer, like those from the USS Harry S. Truman, demonstrate the inherent flexibility of naval forces,” said Vice Adm. Kevin Donegan, Commander, U.S. Naval Forces Central Command. “Today, U.S. naval forces are striking ISIL simultaneously from both the Mediterranean and the Arabian Gulf. Of course, the engine of this effort is our nation’s Sailors and Marines serving with the USS Boxer ARG and the 13th MEU; they, together with our joint and coalition partners, are dismantling and rolling back terrorist networks in Syria, Iraq and elsewhere.”

“Naval forces’ support to OIR from the Mediterranean and the Arabian Gulf demonstrates the range of capacity of the modern Navy and Marine Corps,” said Marine Col. Anthony Henderson, 13th MEU Commanding Officer. “The conduct of air strikes supporting Iraqi Security Force operations against ISIL reflects the multiple capabilities the global ARG/MEU team brings to the theater.”

Harry S. Truman Carrier Strike Group began combat sorties from the eastern Mediterranean Sea June 3, in support of OIR over Syria and Iraq. The CSG transited the Suez Canal June 2, after conducting operations in the 5th Fleet area of operations since Dec. 14, 2015. The strike group’s deployment



U.S. Navy photo by MC2 Jose Jaen

An AV-8B Harrier II assigned to 13th Marine Expeditionary Unit.

was extended to support dismantling and rolling back the ISIL terrorist network from the 6th Fleet area of operations before it will return home to Norfolk.

The Boxer ARG arrived in U.S. 5th Fleet April 5. Consisting of more than 4,500 Sailors and Marines, the Boxer ARG/13th MEU is composed of its command ship, amphibious assault ship USS Boxer (LHD 4), amphibious transport dock USS New

Orleans (LPD 18) and amphibious dock landing ship USS Harpers Ferry (LSD 49).

In addition to Naval Aviation missions against ISIL in support of OIR, the Marines and Sailors of Boxer ARG team are supporting theater security cooperation efforts and conducting maritime security operations throughout 5th Fleet.

Written by Commander, U.S. Naval Forces Central Command Public Affairs. ✎

Clarification

In the Spring 2016 issue of Naval Aviation News magazine, we featured women in uniform in the timeline “Honoring Women in Naval Aviation.” Rich Harris, international military students officer and security manager at the United States Naval Test Pilot School (USNTPS), brought to our attention that the first woman to attend USNTPS was civilian aeronautical engineer Gina Moy, who worked for the Strike Directorate at Naval Air Station Patuxent River, Md. Moy graduated with Class 82 on Dec. 10, 1982. Lt. Collen Nevius was the first woman pilot selected for USNTPS in 1982. ✎



U.S. Navy photo courtesy of USNTPS

One of the fixed-wing flight-mechanic study groups of Class 82 included the first woman graduate of the United States Naval Test Pilot School. Pictured from left to right are squadron leader Paul Hopkins, RAF; Flight Lt. Dan Newman, RAAF; Gina Moy, civil service; Maj. Durwood Ringo, USMC; Lt. John Wildfong, USN; and Lt. Kenneth Linn, USN, in front of a DeHaviland U-46A Beaver.

MAGIC CARPET Lands Aboard USS George Washington



U.S. Navy photos by MCS Clemente A. Lynch

An F/A-18F Super Hornet from Air Test and Evaluation Squadron (VX) 23 performs a touch-and-go on the flight deck of aircraft carrier USS George Washington (CVN 73). VX-23 is conducting tests of the Maritime Augmented Guidance with Integrated Controls for Carrier Approach and Recovery Precision Enabling Technologies (MAGIC CARPET), which will provide improved safety, efficiency and success rates in recovering fixed-wing aircraft onboard aircraft carriers.

ATLANTIC OCEAN—The “Salty Dogs” of Air Test and Evaluation Squadron (VX) 23 tested the Maritime Augmented Guidance with Integrated Controls for Carrier Approach and Recovery Precision Enabling Technologies (MAGIC CARPET) system aboard aircraft carrier USS George Washington (CVN 73) June 23 to 28.

MAGIC CARPET is advanced technology designed to streamline the aircraft carrier landing process, and provides improved safety, efficiency and success rates in recovering fixed-wing aircraft onboard aircraft carriers.

“We are testing the initial fleet release version,” said Lt. Christopher Montague, a project officer for MAGIC CARPET attached to VX-23. “It makes the job a lot easier. We have taken a number of leaps in what we can do with flight control technology to be more accurate and use fewer passes to successfully trap an aircraft.”

On typical carrier landings, pilots must align glide slope, angle of attack and line up, often making up to hundreds of individual adjustments in order to safely land. MAGIC CARPET seeks to simplify this process by reducing the pilot’s workload.

“With the technology, we decoupled the glide slope, angle of attack and line up into three separate pieces,” said Capt. David Kindley, the F/A-18 and EA-18G program manager. “Before, if a pilot made one small change to any of these it would affect all the other things. With MAGIC CARPET, if the pilot wants to adjust glide slope, he just pushes the stick without changing the power or anything else.”

VX-23 tested the initial version of the software last spring aboard aircraft carrier USS George H.W. Bush (CVN 77) April 20 to 23.

“On CVN 77, we were just trying to test the feasibility of the software,” said Kevin Teig, the lead flight test engineer. “We

were also looking for deficiencies and ways to improve. One of the refinements we made for this test iteration was to fine tune the gains and sensitivity of the flight control and see how the system handles.”

Now, VX-23 pilots are testing a new feature, an improved heads-up display (HUD) on the F/A-18E/F Super Hornet and EA-18G Growler.

“The previous models were designed to land on a stationary airfield,” said Montague. “Since carriers are frequently on the move, we designed it to better adapt and compensate for the movement. It takes all the technology we have in the Super Hornet and tailors it in one specific area.”

Ultimately, one of the goals of the MAGIC CARPET software is to reduce training time for future pilots.

“The culture these days is that there are a lot of young kids who have grown up with video games and are used to quick hand-eye coordination,” said Teig. “If we give them intuitive software and enhanced HUD symbology, such as with MAGIC CARPET, learning to fly the ball and make corrections with this control method will be very similar. It will make training a lot faster and easier for the new and upcoming pilots.”

“MAGIC CARPET is an evolutionary improvement in aircraft carrier landings,” said Vice Adm. Mike Shoemaker, Commander, Naval Air Forces. “This technology innovation will ease pilot workload, improve overall recovery time and reduce tanker requirements. These significant changes will make Naval Aviation even more effective and efficient and improve the offensive capability of the carrier strike group.”

The final fleet release version of MAGIC CARPET is expected in 2019.

Mass Communication Specialist 3rd Class Kashif Basharat supports USS George Washington (CVN 73) Public Affairs. 🇺🇸

Demonstration Showcases Aim-9X Joint-Service Venture

AIM-9X Air-to-Air Missile Repurposed for Surface-to-Air Use

PATUXENT RIVER, Md.—Integration of the joint Navy and Air Force AIM-9X Sidewinder Air Intercept Missile with the Army’s Multi-Mission Launcher (MML) hit the mark as the teams completed a successful live-fire engineering demonstration April 1 at White Sands Missile Range in New Mexico.

During the Indirect Fire Protection Capability (IFPC) conceptual demonstration,



U.S. Army photo

A Navy and Air Force AIM-9X Sidewinder Air Intercept Missile launches from the Army’s Multi-Mission Launcher during a recent Indirect Fire Protection Capability test at White Sands Missile Range, N. M.

missiles were launched from the MML, locked-on and intercepted both an unmanned aerial vehicle and a cruise missile.

“Working closely with our industry partner and the Army, the PMA-259 team established a first-of-its-kind surface-to-air missile capability,” said Capt. Jim Stone-

man, Air-to-Air Missiles (PMA-259) program manager. “We are thrilled with the outcome of the live-fire as it solidifies the repurpose of the missile for use in a surface-launch role. The demo is a testament to the fact that the missile and launcher integration will be an affordable game-changer in future wartime conflicts, and will greatly increase mission effectiveness against aerial adversaries.”

The event scenarios validated the lethality of the AIM-9X Block II Sidewinder missile in the surface-to-air arena and against smaller target sets, adding to the weapon’s performance portfolio. Prior to the demonstration, the AIM-9X was capable of being launched only from aircraft, including the Navy’s F/A-18 Hornet and Super Hornet, the Air Force’s F-15 Eagle and F-16 Fighting Falcon and various international partner aircraft.

“These live fires are a major accomplishment and significant step forward for the Army’s IFPC program and the AIM-9X missile,” said Cmdr. Rob Betts, PMA-259 AIM-9X Block II and IFPC military lead. “The Army continues to make extraordinary strides in the development of their IFPC system, and the AIM-9X team is honored to support them. We look forward to continuing our relationship with the Army as they utilize the AIM-9X in more advanced surface-to-air scenarios.”

The AIM-9X IFPC is scheduled for a Milestone B decision this summer, signifying the end of the technology maturation and risk reduction phase. The IFPC program is expected to enter the engineering and manufacturing development phase shortly thereafter, with initial operating capability scheduled for early 2020. 🦅

Navy’s First Network-Enabled Weapon Ready for Fleet Operations

PATUXENT RIVER, Md.—The Navy’s first air-to-ground network-enabled weapon, JSOW C-1, has been delivered to the fleet after achieving initial operational capability in early June.

Rear Adm. DeWolfe Miller, director of Air Warfare, made the announcement after JSOW-C1 completed operational testing against land and sea targets, adding this capability will provide more lethality and accuracy to the Navy’s already very capable deployed air wings around the world.

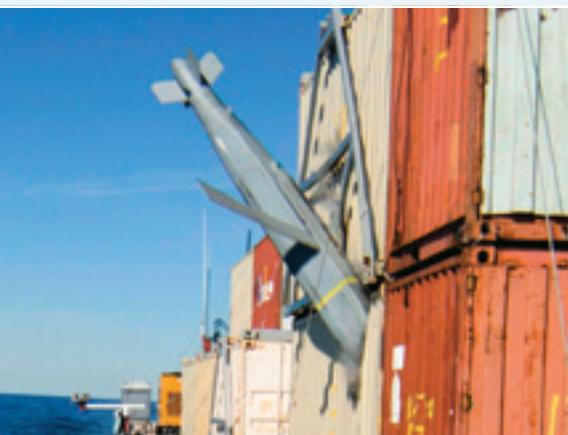
“As our missions’ focus shifts, we are providing the warfighter with the first of several network-enabled weapons required to maintain strategic dominance over the Pacific,” said Capt. Jaime Engdahl, Precision Strike Weapons (PMA-201) program manager. “The JSOW C-1 is critical to the support of the Navy’s strategic vision of integrated warfare capability.”

The newest iteration of JSOW is integrated with a Link 16 network radio, enabling the weapon to engage moving targets at sea. The radio allows the launch aircraft or another

designated controller to provide real-time target updates to the weapon, reassign it to another target, or to abort the mission. The weapon also uses a terminal IR seeker and GPS/INS for guidance.

“The precision targeting of this weapon and its ability to receive real-time target updates makes it the fleet’s weapon for the fight tonight,” said Cmdr. Sam Messer, JSOW program manager. “JSOW C-1 provides the ability to engage our enemies at longer ranges and the flexibility to engage in direct attack even if enemy air defenses deny our aircraft access.”

The weapon will be launched from F/A-18E/F and F-35A/C aircraft. 🦅



U.S. Navy photo

A Joint Standoff Weapon (JSOW) C-1 impacts a target during a flight test in March 2016 at Point Mugu Sea Test Range, California.

U.S. Forces, Japan Airlift Relief Supplies following Earthquakes in Japan

YOKOTA AIR BASE, Japan—The U.S. military delivered more than 230,000 pounds of relief supplies to help the people of Japan following two powerful, deadly earthquakes that rocked the island nation April 14 and 16.

The magnitude-6.5 earthquake hit the region of Kumamoto, Japan, April 14, followed two days later by a magnitude-7.3 quake, which struck the southern island of Kyushu. Buildings collapsed, and the second quake triggered landslides. Marine Corps Air Station Iwakuni, the closest U.S. airfield to the relief effort, served as a joint hub.

Direct U.S. airlift support to the Kumamoto area ended April 24, said Lt. Gen. John Dolan, commander of U.S. Forces, Japan. “As the recovery progressed and repairs were made to the area’s



U.S. Marines and Japanese soldiers load boxes of humanitarian aid into an MV-22 Osprey aircraft at Japanese Camp Takayubaru, Japan, April 18 to support earthquake relief efforts near Kumamoto.

infrastructure, the need for rapid airlift of supplies by U.S. MV-22s and C-130 aircraft has diminished. This noble work highlighted our alliance and our friendship with Japan.”

About 130 DoD personnel stationed in Japan support the overall effort in Kumamoto. U.S. ships from Sasebo Naval Base, C-130’s from Yokota Air Base and Ospreys from bases in Okinawa participated in the humanitarian operation.

Prime Minister Shinzo Abe’s office released a statement April 24 thanking

the U.S. for its efforts to provide relief to people affected by the quake. U.S. forces will remain on standby to provide assistance as requested.

“Our long experience working hand-in-hand with Japanese Self-Defense Forces ensures that our operations are seamless and effective,” said Dolan.

“The people affected by the quake remain in our thoughts and prayers,” the general said. “I hope that our contribution to the relief effort was able to help them through this difficult time.”

MQ-4C Triton UAS Demonstrates New Capabilities During Flight Test

PATUXENT RIVER, Md.—The Navy recently demonstrated two key capabilities for the Triton Unmanned Air System (UAS) program that will enhance future fleet operations.

During a flight test June 2, an MQ-4C Triton and P-8A Poseidon successfully exchanged full motion video for the first time in flight via a common data link, marking another interoperability step for the program.

The test demonstrated Triton’s ability to track a target with its electro-optical/infrared camera to build situational awareness for a distant P-8 aircrew.

“In an operational environment, this would enable the P-8 aircrew to become familiar with a contact of interest and surrounding vessels well in advance of the aircraft’s arrival in station,” said Cmdr. Daniel Papp, Triton integrated program team lead.

The MQ-4C Triton’s ability to perform persistent intelligence, surveillance and reconnaissance within a range of 2,000 nautical miles will allow the P-8A aircraft to focus on its core missions.

Last week also marked the completion of Triton’s first heavy weight flight that will expand Triton’s estimated time on station significantly. Triton operated in the 20,000 foot altitude band in the heavy weight configuration for the first

time and completed all test objectives. A second heavy weight flight on June 14 had Triton operating in the 30,000 foot altitude band.

“The heavy weight envelope expansion work will enable Triton to realize its long dwell capability and become the unblinking eye for the fleet,” Papp added.

Triton is designed to fly missions of up to 24 hours at altitudes over 10 miles high, allowing the system to monitor two million square miles of ocean and littoral areas at a time. Since its first flight in 2013, Triton has flown more than 455 flight hours. The Navy will continue testing Triton at Patuxent River to prepare for its first planned deployment in 2018.



MQ-4C Triton



A Patrol Squadron (VP) 4 P-3C Orion aircraft prepares to depart from Naval Station Rota conduct both maritime domain awareness flights and anti-submarine warfare training.

A 'Skinny Dragon' Kind of Day

EL SALVADOR—Over the course of 24 hours beginning June 13 the “Skinny Dragons” of Patrol Squadron (VP) 4 did something amazing—they launched six different aircraft spread across five locations around the world on six very different missions.

In Comalapa, El Salvador, the 70 person detachment launched their 35th counter-drug mission of the deployment. The men and women of this detachment work closely with several other units of the Joint Interagency Task Force, South (JIATF-S)

to stop the distribution and sale of illegal drugs. Money from the sale of these drugs is often used to support international terrorist organizations and the efforts of JIATF-S have a direct and meaningful impact on national defense. To date, VP-4 has contributed to 21 busts totaling 19,808 kilos of illegal drugs with a street value of more than \$501 million.

VP-4 also has a permanent detachment stationed in Camp Lemonnier, Djibouti, where this team of Skinny Dragons operates in the sweltering heat of Africa flying

overland intelligence, surveillance and reconnaissance missions in support of counter-terrorism efforts in the Horn of Africa. Their flight on this day represented VP-4's presence on a third continent and demonstrates the P-3C's ability to operate in extreme conditions.

Simultaneously, VP-4 participated in Exercise BALTOPS 2016 from Spangdahlem Air Base, Germany. With one aircraft, two aircrews and 18 maintenance professionals, the detachment is a small part of the large multinational maritime exercise. On this particular day, Combat Aircrew 10 conducted an anti-submarine warfare flight demonstrating the primary mission area of the P-3C Orion.

Operating out of Naval Air Station Rota, Spain, Combat Aircrew 5 provided airborne support for USS Dwight D. Eisenhower (CVN 69) as she made her way into the Mediterranean Sea. Carrier strike group (CSG) support is another critical mission of the airborne P-3C, which gives the Strike Group Commander visibility on threats beyond his horizon and the ability to destroy those threats if the need arises.

In a rare feat, VP-4 provided support to a second CSG on the same day. Flying out of NAS Sigonella, Italy, Combat Aircrew 8 flew in support of USS Harry S. Truman (CVN 75) as she conducted operations in the eastern Mediterranean Sea.

Even in the face of all these rigorous operational demands, the Skinny Dragons of VP-4 made time to continue training for tomorrow's fight as well. On this day, the squadron also executed an important pilot training flight to ensure that the long line of outstanding Skinny Dragon aviators continues into the future.

While days like this are not unique to this squadron or this time in history, they represent the long and venerable history of the mighty P-3C Orion and the entire Maritime Patrol and Reconnaissance community.

Cmdr. Chris Smith is the Commanding Officer of Patrol Squadron (VP) 4.



U.S. Navy photo by Ens. Antonio More

Training Air Wing 5 Receives Final T-6B

Three T-6B Texan IIs bank toward Naval Air Station Whiting Field in Milton, Florida, to help celebrate the arrival of the 148th and final T-6B aircraft to serve as part of Training Air Wing 5's primary training fleet. The June 21 formation included the first T-6 to arrive at NAS Whiting Field, the centennial color schemed T-6, and the final Texan II for Training Air Wing 5. The T-6B has proven to be a highly dependable turboprop trainer whose primary mission is to train future Navy, Coast Guard and Marine Corps aviators. ✈️

U.S. NAVAL AIR FORCE RESERVE: A CENTURY of SERVICE

PART I

By *Cmdr. Peter B. Mersky, USNR (Ret.)*

Members of the Yale Unit haul a Curtiss R-6 trainer up the beaching ramp at Huntington, New York, 1917.

Author's Note: *Since the Navy and the Marine Corps have always been linked, it should come as no surprise that the two services' reserve air corps were founded at the same time. However, this commemorative two-part article focuses on the Naval Air Reserve¹ established in 1916, later renamed the Naval Air Force Reserve.*

Most countries have a well-organized cadre of part-time Soldiers and Sailors that can be called to active duty and integrated with the active force when the time and situation demands. World War II and the Korean War are strong examples of such an arrangement when several nations, including the United States, eventually had some 80 percent reservists making up its final military complement. Without such formidable backup, final victory would not have been possible.

Each military branch usually has its own dedicated reserves. However, it wasn't until Aug. 29, 1916, that the American Naval Air Reserve (NAR) was officially formed when the Naval Appropriations Acts for fiscal year 1917 provided funds to establish a Naval Flying Corps (NFC) and a Naval Reserve Flying Corps (NRFC) and purchase 12 planes for the naval militia. Members

of the new reserve groups often came from various collegiate flying clubs, the most prominent being from Yale, which eventually contributed four such groups, with the First Yale Unit being the most well-known. The unit went to Europe and saw a good deal of combat by the end of World War I in November 1918.

When the NFC and NRFC were formed, the Navy had only six aircraft, two of which were assigned to armored cruiser USS North Carolina (ACR 12), with the other four assigned to the Naval Aeronautic Station at Pensacola, Florida. The appropriations act of 1916 limited the number who could serve to 48 officers and 96 enlisted men, and not more than 12 Marine officers and 24 enlisted men could be included. Thus, by the time the U.S. declared war on the Central Powers—Germany, Austria-Hungary and Turkey—on April 6, 1917, the total manpower assigned to Naval Aviation

F. Trabee Davison, Yale Class of 1918/1919, founder of the First Yale Unit, returns from a flight in an F-Boat. Originally a member of the class of 1918, his wartime service interrupted his studies, but he returned and graduated with the latter class.

was 48 officers, including six Marines and 239 enlisted men.

Many of them saw extensive combat, initially with squadrons of the British Royal Naval Air Service (RNAS), and then the newly-formed Royal Air Force (RAF), which appeared after combining the Royal



U.S. Navy photo

U.S. Navy photo

U.S. NAVAL AIR FORCE RESERVE: A CENTURY of SERVICE



Photo courtesy of David S. Ingalls & Peter B. Mersky

An avid photographer, David Ingalls, took photos throughout his World War I experience. This photo shows a DH-9 bomber obtained from the British for the Marine Corps in October 1918 at Eastleigh, a large Navy assembly and repair facility in southern England. Ingalls had been assigned as head of the Flight Department after leaving No. 213 Squadron. Warrant Officer William Miller worked for Ingalls at Eastleigh. He eventually became a Naval Aviator.

Flying Corps (RFC) and RNAS on April 1, 1918. Other regular naval officers had also been occasionally flying bombing missions with the RNAS as crewmen aboard gigantic—for the time—Handley Page O/100 twin-engine bombers. (The “O/100” referred to the wing span [in feet] of these huge aircraft. The “O” was an alphabetical labeling of Handley Page designs, several of which were never constructed.) The British squadrons’ original purpose was to strike German submarine pens in Belgium, but later became a night strike force.

Members of the Yale Units saw action with RAF fighter squadrons, flying Sopwith Camels, one of the war’s most capable, if hard to fly, fighters, and bomber squadrons in De Havilland DH-4s and DH-9s, again highly capable aircraft that saw a lot of action in the last year of the war. It is while flying with No. 213 Squadron that then-Lt. j.g. David S. Ingalls became the Navy’s first ace, credited with six kills.² Other NREFC members went on to other assignments. Ens. Charles H. Hammann received the first Medal of Honor awarded to a U.S. naval



Photo courtesy of Fleet Air Arm Museum

The famous Sopwith Camel was used by many British squadrons, including this example from 13 Naval/213 Squadron (following the consolidation of the Royal Naval Air Service and Royal Flying Corps into the Royal Air Force on April 1, 1918). David Ingalls flew with No. 213 where he gained six kills to become America’s first and only Navy ace during World War I. The Camel’s short-coupled design is visible here and accounted for the Camel’s legendary maneuverability as well as its equally legendary handling difficulties.

aviator for action in Italy flying a diminutive Macchi flying boat fighter on Aug. 21, 1918.³ On March 19, 1918, reserve Ens. Stephan Potter, a member of the Second Yale Unit became the first naval aviator credited with downing an enemy aircraft. While in command of a flying boat and part of a formation making a long-range reconnaissance mission over the Heligoland Bight off the German coast, his group was attacked by German seaplanes. Potter shot one down for which he received the Navy Cross.

After the armistice that ended World

War I on Nov. 11, 1918, a typical withdrawal and transitional period began. It was time for each country to assess its participation in the conflict, and, perhaps, bring itself to some sort of normalcy. The U.S. Navy and its fellow military services had a lot to consider. So many new weapons had been introduced, including the airplane as well as a somewhat unexpected invention, the aircraft carrier.

The decades following the war were lean years. Certainly, the 1920s was a period of less funding for military development. Mass



After the war, Ingalls (right) served as Assistant Secretary of the Navy for Aeronautics during the Herbert Hoover administration (1929-1933). One of the perks of his position was having his own high-performance single-seat or two-seat aircraft in which to fly around the country for meetings or site inspections. This photo shows him with popular humorist Will Rogers (left), himself an avid aviation enthusiast, beside Ingalls' Curtiss XF8C-7.



A Vought UO-1 at Squantum, Mass., 1926. These aircraft often participated in operations against Prohibition rum-runners off the southern Massachusetts coast.



Many of the original Naval Reserve aviators served in Antisubmarine Warfare (ASW) units at French coastal installations. Here, six officers pose rather informally by their Curtiss HS-1 at Treguir, France, in 1918. Their uniforms are the precursors of aviation greens and show a wide variety of personal choice.

demobilization was what the public wanted as well as making the American dream grow, which did not include anything to do with the military. Anyone not career-minded quickly left the service, and only a relative few maintained their military association by remaining in the reserves. By 1920, just a comparatively small group of Reserve officers remained on active duty.

The NRFC was relatively inactive with funding for a 15-day period of active duty at Rockaway Beach in New York, and that funding was soon withdrawn. For fiscal year

1922, Congress only appropriated \$7 million for Reserve funding, less than half of the Navy's request for the Naval Reserves. Other variations included offering the chance to enlist reservists to go to the active duty force without losing their reserve status. Aviation reservists also received attention for a brief time when qualified naval aviators were offered the chance for training periods between July 1 and Sept. 30, 1920. But it was not enough and the NAR began to decline in strength until by 1922, the aviation reserve force was nonexistent. However, in



Minneapolis reservists check their Grumman SF-1's retractable landing gear, a real novelty in the mid-1930s.

July 1927, 50 Naval Reserve officer aviators began one year of training duty with the fleet following their graduation from Pensacola.

The Naval Reserve Act of 1925 provided more money to support drills and 15 days of active duty for training 188 officers and 8,000 enlisted men in the Fleet Naval Reserve (Aviation) ranks. Besides the NAR in New York, two other metropolitan areas were busy—Anacostia in Washington, D.C., and Squantum, just outside Boston. The latter was established in 1917 as a seaplane base in the outer reaches of Boston Harbor, while Anacostia opened on New Year's Day in 1919. Both reserve bases had long careers, but Squantum eventually outgrew its usefulness and closed in December 1953, its reserve activities moved to South Weymouth,

U.S. NAVAL AIR FORCE RESERVE: A CENTURY of SERVICE



Photo courtesy of Peter B. Mersky

The Curtiss series of dive bombers served the fleet and Reserves in the 1930s and could be found in reserve units from Minneapolis to Long Beach. Minneapolis reservists stand in the mid-winter snow before starting their Curtiss O2Cs.

south of Boston. Anacostia came into conflict with the civilian airport across the Potomac River known as National Airport and was closed on Sept. 30, 1961.

Naval Air Reserve activities in the Western United States also developed quickly with the focus in Southern California and, to a lesser extent, Washington state.

The years between the world wars saw many different policy reviews and adjustments regarding the reserves. Sometimes, there were programs that allowed men to apply for and receive training as aviators and eventually earn their commissions as reserve ensigns. Under the Naval Reserve regulations, the intention was that drills for Aviation Fleet Divisions would be devoted to carrying on flight operations as units, a premise that has largely carried on to the present day. Retainer pay drills were devoted almost entirely to carrying out the terms of the annual syllabus for flight training of Fleet Naval Reserve aviators, again, a procedure that continues today.

By 1934, the Naval Reserve was made up of three classes: the Fleet Naval Reserve, the Merchant Marine Naval Reserve and the Volunteer Naval Reserve. The first class consisted of officers and men qualified or in

training for combat duty and, along with the third, included aviation personnel. The aviation group was organized into squadrons made up of set numbers of officers and men who, by law, were required to perform 15 days of active or training duty, with pay and allowances, each year, as well as a stipulated number of drills during the year.

Thirteen bases around the country hosted training planes and associated equipment maintained by reservists on year-round active duty. On Jan. 1, 1934, Naval Reserve Air Bases (NRAB) hosting primary flight training were redesignated Naval Air Stations (NAS). Aviation officers in the Fleet Reserve were A-F (aviation flight officers) and, as of Sept. 30, 1934, there were 257 with this designation. Enlisted men in the Fleet Reserve did not have a specific designation denoting aviation duty.

The Volunteer Naval Reserve was composed of officers and men available for detail in the event of war, if required. Their drills and training duty periods were voluntary and without compensation.

The Reserve groups experienced ups and downs throughout the 1930s. In 1934, a study by the Federal Aviation Commission called for strengthening the avia-

tion reserves, both Navy and Army, and increased funding. The report considered the consequences of not having a properly prepared Reserve backup in the event of a “war against a major power.” At the time, the Naval Reserve’s complement numbered 481 officer pilots, 251 of whom could be considered ready for immediate active duty.

The commission proposed an aviation cadet program to build up the Navy and Marine Corps reserves. This program provided for the selection of young men to be appointed by the Secretary of the Navy to the grade of aviation cadet in the reserves. Gradual acceptance of the program spread, although there were occasional slowdowns in the training rates of aviators in the Volunteer Naval Reserve because flight hours were at a premium. The last half of the 1930s saw an increase of Fleet Reserve officers on permanent active duty, and the Naval Reserve Act of 1938, which covered the overall Reserve, included a few provisions that applied directly to the Naval Air Reserve.

On June 13, 1939, a revised Aviation Cadet Act provided for the immediate commissioning of all cadets on active duty as ensigns and second lieutenants and for the future commissioning of others when they finished their flight training.

A new category, the Organized Reserve, with those previously classified A-F, were now designated A-O with the goal of reaching maximum numerical strength within 10 years. This estimate, however, was considered completely inadequate—with war seemingly on the horizon, yearly periods of training duty had to be increased.

By 1935, the number of Reserve officers had grown to around 630. Aviation officer numbers were also increasing. The requirements of the 1938 annual estimate wanted 500 new aviators every year. A tall order, but the process geared up and by the time the U.S. entered World War II after the Dec. 7, 1941 attack by the Japanese on Pearl Harbor, training Reserve aviation officers was well underway, as was every aspect of the huge American military team. They would be desperately needed in a very short time.

WORLD WAR II

A Reservist's War

America needed thousands of new aviators to fight another world war. Industries could build the necessary number of aircraft, but the effort to send out the men to fly them was Herculean. Nevertheless, the programs were established and put into motion. Immediately after Pearl Harbor, only 600 trained and ready aviator reservists were available, and only 700 enlisted were ready for mobilization. Meanwhile, the regular Navy would have to hold the line, and it did so in fine fashion. Battles were fought, ships, planes and men were lost, and the Reserve training cycles kicked into high gear.

During the war, some 54,000 aviators and hundreds of thousands of enlisted crewmen went through the pipelines. In a four-year period, the number of trained reservists increased by 300 percent. From 1935 to 1940, only 1,800 aviation cadets had been trained. The number jumped to 7,000 in 1941 and by the end of 1943, as the U.S. campaign of island-hopping toward Japan's doorstep began in earnest, the number had soared to 20,000 per year.

By the end of 1944, more than 55,000 trained naval aviators, plus a similar number of aviation specialists and general service officers on active duty in aviation-related billets, swelled the ranks of the wartime Navy. At war's end in August 1945, 83 percent of the Navy's fleet manpower was made up of reservists. The following statistics show the amount of Reserve participation:

- Of the 4,025 naval officers killed in action, 2,983 were reservists, and 1,341 were aviators.
- Enlisted aircrew killed in action numbered 1,659, with 1,015 of those coming from the Reserves.
- An additional 8,184 officers and enlisted were killed in operational mishaps, with 6,587 of these reservists.⁴

The Naval Aviation Cadet program used this highly effective recruiting poster before World War II. The artist, McClelland Barclay (1891-1943), was a well-known pre-war painter and illustrator. He took a commission in the Naval Reserve in 1938 and was killed in action in the Solomons Islands when his Landing Ship, Tank (LST) was torpedoed while he was sketching and taking photos.



Poster art courtesy of National Naval Aviation Museum



Photo courtesy of Peter B. Mersky

Elimination training became a primary job at Naval Reserve Air Base Minneapolis right before World War II. Here, aviation cadets line up in front of their N3N trainers.



Official White House photograph

Lt. j.g. George H.W. Bush makes pre-launch notes in his TBM Avenger torpedo bomber. Like his Reserve counterpart, Lt. j.g. John F. Kennedy, Bush became the President of the United States and was always proud of his service in World War II, for which he earned the Distinguished Flying Cross.

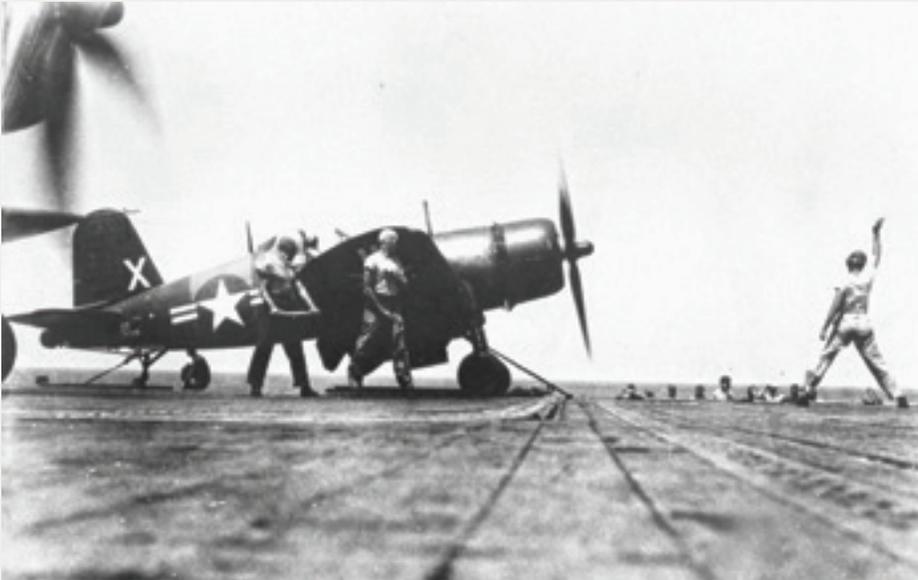
U.S. NAVAL AIR FORCE RESERVE: A CENTURY of SERVICE

Photo courtesy of Peter B. Mersky



WAVE (Women Accepted for Volunteer Emergency Service) operators line up with their ground trainers at NAS Atlanta, one of three Reserve air stations established specifically to meet the demands of war-time pilot training. First used in 1929 and the product of a private pilot, Edward Link, these "blue boxes" trained thousands of aviators to negotiate bad weather and unusual attitudes in the relatively safe and inexpensive confines of a grounded "aircraft."

Photo courtesy of Peter B. Mersky



A New Orleans-based Reserve F4U-4 Corsair pilot performs carrier qualifications.

After the final victory over Japan, the war-weary Allies settled back into trying to rebuild the shattered world. Economics that had been pumping out arms and other materials, as well as supporting massive training programs, now had to restructure themselves for building a peacetime society. This meant reducing standing military forces, while trying to maintain sufficient defenses for national security—wartime allies Russia and China were becoming major threats that could not be ignored.

Prewar plans officers decided the loss of trained Reserves would be wasteful and

the Naval Air Reserve Training Command was established at NAS Glenview, Illinois, in November 1945. Launching the program wasn't easy. Personnel to fill 21 naval air stations and training units had to be recruited from veterans just released from wartime duty. Five thousand officers and 30,000 enlisted men were assigned to the "ready reserve," those in a drill-pay status. However, many vets were interested, and in the first year Naval Air Reserve aviators flew 412,000 flight hours while 55 air groups were commissioned. By 1948, 71,419 officers and 15,458 enlisted



Photo courtesy of Peter B. Mersky

Postwar Naval Air Reservists check the flight board at Atlanta.

members were in the Naval Reserve, now composed of 200 squadrons that flew a half-million flight hours.

Most of the aircraft were wartime F6F Hellcats and F4U Corsairs, with PBX Catalina flying boats, various transports and other assorted types. NAS Squantum sent Carrier Air Group 56 aboard USS Franklin D. Roosevelt (CV 42) in 1948 for carrier qualifications while Patrol Squadron (VP) 69 went down to Miami for two weeks training duty. By the end of the decade, the Naval Air Reserve was a viable organization, and just in time.

Photo courtesy of Peter B. Mersky



Two blimps float past the LTA Hangar at NAS South Weymouth. The NAR established LTA squadrons at South Weymouth, Lakehurst and Moffett Field, Calif.

U.S. Navy photo courtesy of Warren Thompson



A lineup of F4U-4 Corsairs from Fighter Squadron (VF) 871 armed with rockets and bombs for a mission from the USS Essex (CVA 9) in 1952.

U.S. Navy photo courtesy of Warren Thompson



An AD-4 Skyraider also from Attack Squadron (VA) 923 is ready to launch from the Bon Homme Richard (CVA 31).

A still from "The Bridges at Toko-ri" shows actor William Holden playing the character of recalled Denver lawyer Harry Brubaker struggling to get out of his burning F9F Panther.



Photo courtesy of James Farmer

WAR IN KOREA: **Send in the Reserves...Again!**

North Korea invaded South Korea on June 28, 1950, crossing the 38th parallel dividing the Korean peninsula. The only U.S. carrier in the area, USS Valley Forge (CV 45), sent AD Skyraiders and F9F Panther jets to attack the North. The action was heavy and U.S. Reserves were quickly mobilized to augment the meager Allied forces already in country. Eighty-four NAR squadrons were eventually activated, and some 30,000 reservists were recalled to active duty. The first NAR squadron to actually begin operations in the Korean theater was Patrol Squadron (VP) 892 from Seattle, flying PBM Mariner flying boats. The squadron flew missions from Iwakuni, Japan, starting Dec. 18, 1950.

On March 29, 1951, Carrier Air Group 101, the first all-reserve air group to deploy to Korea, flew its first combat missions from USS Boxer (CV 21). Reserve squadrons that made up this air group came from: Dallas, Texas; Glenview, Illinois; Memphis, Tennessee; and Olathe, Kansas. On June 12, 1951, two PB4Y-2 Privateers of Patrol Squadron (VP) 772 from Los Alamitos, California,

were transferred from NAS Atsugi, Japan, to Pusan, South Korea. The four-engine patrol bombers dropped flares in support of Marine night bombing.

Several Naval Air Reserve squadrons volunteered en masse, the first being Fighter Squadron (VF) 781 from Los Alamitos and Fighter Squadron (VF) 791 from Memphis. Many squadrons were flying obsolete aircraft, but mobilization brought newer, more modern types like the AD Skyraider and F9F Panther. Only those units flying the F4U Corsair needed little or no transition training. Dallas-based Attack Squadron (VA) 702 also flew ADs from Boxer in spring 1951. On Nov. 18, 1952, seven MiG-15s—the top Soviet fighter at the time—were intercepted by three F9F-5 Panthers flown by NAR pilots of VF-781 who were flying Combat Air Patrol (CAP) from USS Oriskany (CV 34). The Americans downed two MiGs and damaged a third, while losing one Panther.

By 1952, Naval Air Reservists had flown 6,000 of the 8,000 sorties from U.S. carriers, and including other NAR units in the

total—USNR ashore and Marine Corps Air Reserve shore-based squadrons—by the ceasefire in July 1953, the NAR had flown one-third of the combat missions in Korea.

"I sincerely believe that this country never before has had a Reserve so splendidly trained and ready to meet any sudden emergency," Vice Adm. H. M. Martin, Commander, Naval Air Force Pacific Fleet, wrote Rear Adm. L. A. Moebus, Commander, Naval Air Reserve Training after returning from Korea in April 1952. "I am likewise firmly convinced that never before has our country realized such dividends from a peacetime training program."

Perhaps the NAR's experience in Korea was best told by author James Michener's epic novella, "The Bridges at Toko-ri."⁵ After spending time on several Navy carriers in Korea, Michener wrote the story of Harry Brubaker, a recalled Naval Air Reservist and civilian lawyer from Denver. Published in 1953, the book was adapted a year later into a Hollywood film that remains one of the best motion pictures about military aviation.

An important program during the early 1950s was the Training and Administration of Reserves (TAR) program that offered

A CENTURY of SERVICE

Photo courtesy of National Archives



An Oakland-based Fighter Squadron (VF) 873 Corsair flies over Mt. Ranier, Washington, in 1950.

Photo courtesy of Peter B. Mersky



Three Hiller HTE Ravens, probably from Helicopter Utility Squadron (HU) 911, the only helicopter squadron in Reserve Air Wing (RAW) 91 at the time, and their crews line up at *Quantum* in 1952. The Navy got 52 of these little co-axial helicopters starting in 1950. The three-seaters were used for short-range training because their endurance prohibited any true operational missions.

several advantages to reservists, including remaining ashore to take care of the growing NAR facilities and equipment without the prospect of lengthy deployments. Promotion and retirement opportunities were the same as regular Navy active-duty personnel but promised a more stable family life at a time when the Reserves needed people with experience and knowledge of aircraft and Navy administrative require-



NAS Minneapolis F9F-5 Panthers fly in formation in the late 1950s. The Panther was one of the first jets flown by the Naval Air Reserve and had also seen considerable combat in Korea.

Photo courtesy of Peter B. Mersky

ments. Squadrons often had a TAR officer-in-charge, usually a commander, during the week, along with TAR enlisted in yeoman and various maintenance positions and officers to keep the aircraft in shape for the weekend flying activities or the annual two-week active duty periods.⁶

TARs became the functioning NAR. Without people there on a daily basis to run the squadron, the drilling reservists who were civilians during the week could not rely on either their aircraft or the administrative support that kept the squadrons up and running throughout the year. In addition, TARs were occasionally sent out on regular deployment and even into combat, especially during the Vietnam War.

INTO THE 1960s

After the war in Korea ended with an armistice in July 1953, the makeup of the Reserves changed. The NAR made the change to more jets, while the Marine Corps Air Reserve held onto the elderly prop-driven F4U Corsair for a while longer. By April 1955, the first F9F Panthers had joined the Naval Air Reserve.

The categories of “ready reserves” and “standby reserves” were clarified by the Armed Forces Reserve Act of 1952. Ready reserves could be recalled in an emergency, and in addition, categories of “active” and “inactive” determined the status of reservists in certain programs. Concern for the growing Soviet submarine fleet placed anti-submarine warfare (ASW) patrols on the Naval Air Reserve’s plate, and its squadrons of P2V Neptunes and S2F Trackers had a specific mission looking for Russian subs off the U.S. coast. An increased blimp patrol from coastal naval air stations such as South Weymouth south of Boston raised the level of lighter-than-air presence for several years.

A new category, the selected reservist, or SELRES, began Feb. 13, 1958, and were crewmen that carried pocket-sized orders giving them priority on airlines, buses and trains in the event of being recalled in times of a national emergency.

Because reservists made their main livings like other civilians, it became necessary to make periods of training more convenient, and some Reserve activities provided airlifts to drill sites. Besides the actual bases that served as training facilities, various supporting and administrative units were

Endnotes

1. The distinction between the regular Navy and the reserve Navy was clear cut until 2005, when Vice Adm. John G. Cotton, Chief of Navy Reserve, 2003-2008, pushed for a change in terminology that dispensed with “Naval” and began using “Navy.” However, references to pre-2005 individuals and activities may still use the traditional “Naval Reserve.” For instance, if a person’s period of activity and affiliation was before 2005, one uses USNR as a member of the Naval Reserve. If the date is after 2005, then one should use “USN” and “Navy Reserve.” Since the author retired in 1993, he uses the traditional terms and references, including the acronym NAR for Naval Air Reserve, unless referring to organizations and individuals after 2005.
2. A feature movie entitled “The Millionaires’ Unit,” was recently produced by Darroch Greer, telling the story of the Yale Units. For more info, visit www.millionairesunit.org.
3. For more details on the NRF, Yale Units and Northern Bombing Group read: “The Millionaires’ Unit,” by Marc Wortman; “Hero of the Angry Sky,” a wartime biography of David S. Ingalls through his diary and letters in World War I, edited by Geoffrey L. Rossano; and “Striking the Hornet’s Nest,” by Geoffrey L. Rossano and Thomas Wildenberg.
4. Cmdr. David F. Winkler, USNR (Ret.) “Ready Then. Ready Now. Ready Always. More Than a Century of Service By Citizen-Sailors, the United States Navy Reserve.”
5. The book and movie are highly recommended for those interested in Naval Aviation, the Korean War or just fine movie-making.
6. At the time of the change of the USNR designation, TAR was changed to Full-Time Support (FTS) to indicate a higher level of operational support for the fleet.



Photo courtesy of Paul Lapinski Collection via Marc Frattasio & Peter B. Mersky

Lockheed SP-2E Neptunes of Patrol Squadron (VP) 911 patrol the Atlantic shipping lanes during the 1962 Cuban Blockade. Although the squadron was not officially mobilized during the Cuban Crisis, its Reserve flight crews made ample use of extra drill time, along with five other NAR patrol squadrons to help enforce the blockade from Oct. 27, 1962. The colorful, highly visible color scheme disappeared soon after the 1962 period to be replaced by the familiar gull gray and white scheme.



Photo courtesy of Peter B. Mersky

An unusual type in the Reserves, this F4D (later F-6A) Skyraider sits on the Olathe flight line. Note its shared Navy/Marine markings, indicating the dual service use of the high-performance interceptors.

created such as air wing staffs, auxiliary air units and auxiliary ground units.

In addition to the ongoing change to jets, prop types such as the AD Skyraider and the big four-engine transports and patrol aircraft, such as the R5D Skymaster and PB4Y-2 Privateer, respectively, were augmented by the twin-engine Lockheed PV-1 Ventura and P2V Neptune.

Following Korea, the Reserves continued to drill—convene for training usually on weekends—and participate in annual two-week extended periods of active duty. Things were quiet, and very few reservists of any category were recalled for active duty until the fall of 1961 when Communist East Germany unexpectedly built a wall dividing the tortured city of Berlin, challenging the 16-year-old agreement between the Allies and Soviets regarding the city's freedom. Not since the Berlin Airlift of 1948, which

temporarily served as the only supply line to the West Germans living in Berlin, was there such a direct threat to the peace and stability of Europe. To indicate its concern and annoyance with the Russians, the U.S. called up selected units of its air reserves. Eighteen squadrons and 3,600 Naval Air reservists were mobilized. Although they remained in Norfolk, Virginia, Antisubmarine Squadron (VS) 861 served nearly a year on active duty during the Berlin Crisis, from October 1961 to August 1962. Seattle-based Antisubmarine Squadron (VS) 891 also was mobilized. VS-832 from New York was called up in its entirety to augment VS-837. The recall was the largest since Korea and it impressed the world overall, including the Soviets, but the infamous Berlin Wall remained standing for 28 years.

Cmdr. Peter B. Mersky, USNR (Ret.) was commissioned through Aviation



Photo courtesy of Peter B. Mersky

This well-marked S-2 from Antisubmarine Squadrons (VS) 771 and 772 at Los Alamitos, Calif., whistles in for a landing in 1962.

Officer Candidate School in 1968, and remained a reservist, serving in various intelligence billets as well as two tours with Light Photographic Reconnaissance Squadron (VFP) 306 until retiring in 1992. He was the first civilian editor of "Approach" magazine, has been a volunteer associate with Naval Aviation News since 1971, and has written NAN's book review column since 1982 including some 700 book reviews to NAN and other publications, including 16 books on U.S. Navy and Marine Corps Aviation.

Look for Part II in our next issue.

Author Acknowledgements: I am thanking the following people in order of seniority for taking time from their busy schedules to provide advice, information and, most importantly, support. Vice Adm. Robert F. Dunn, USN (Ret.), former Chief, Naval Reserve (CNR); Vice Adm. John G. Cotton, USN (Ret.), former CNR; Vice Adm. Robin Braun, CNR; Rear Adm. Samuel J. Cox, USN, (Ret), Director, Naval History & Heritage Command; Rear Adm. John Sadler, Deputy Director Maritime Operations, U.S. Fleet Forces Command; Rear Adm. William M. Crane, Chief Navy Air Force Reserve (CNAFR); Capt. Rosario Rausa, USNR, Training and Administration of Reserves (TAR) (Ret.); Capt. Scott Eargle, Commodore, Fleet Logistics Support Wing; Capt. Marc Orgain, Commodore Maritime Support Wing; Capt. John P. Mooney, Chief of Naval Air Training (CNATRA), Reserve Component Commander; Capt. Mark D. Brazelton, Deputy Commodore Tactical Support Wing (TSW); Capt. R.T. Rascoll and Lt. Dani Still, Navy Air Logistics Office; Cmdr. Rob Teague, Public Affairs Officer, TSW; Lt. Cmdr. William F. Murphy, Deputy Executive Assistant to CNR; Lt. Cmdr. Rick Morgan, USN (Ret.); Lt. Wesley A. Holzapfel, Public Affairs Officer, CNAFR; Lt. Adamantios Kouloumoundras, Electronic Attack Squadron (VAQ) 209; Aviation Warfare Systems Operator 1st Class Marc Frattasio, USNR (Ret.); Nicholas J. Thrasher, Editor in Chief, Naval Aviation Museum Foundation; Tony Holmes, Ted Carlson and Warren Thompson.

Marine Corps Resets Super Stallion Maintenance

Three-year Effort Will Repair All 147 Aging CH-53E Helicopters

By Jeff Newman



The U.S. Marine Corps has begun a full reset of its CH-53E Super Stallion heavy lift helicopters, an effort aimed at significantly increasing the number of operationally fit aircraft and addressing systemic issues, which in recent years drove the platform's readiness level to unsustainable depths.

U.S. Marine Corps CH-53E Super Stallions assigned to Marine Heavy Helicopter Squadron (HMH) 361 and HMH-461 land for a static refuel during Weapons and Tactics Instructor course.

U.S. Marine Corps photo by Lance Cpl. Anabel Abreu Rodriguez

The issue first came to light following the January 2014 crash of an MH-53E Sea Dragon—the Navy's version of the aircraft—off the coast of Norfolk, Virginia, during a routine training exercise. Three of the five Sailors onboard were killed. The subsequent investigation determined that electrical wires inside the aircraft had chafed against and breached a fuel line, sparking a fire that flooded the cabin and cockpit with thick smoke. The crash prompted an inspection of all CH/MH-53s for signs of chaffing between cabin fuel tubes and electrical wiring.

“What was discovered was that the material condition of the aircraft, both the CH-53E and the MH-53E, was degraded,” said Col. Hank Vanderborcht, program manager for the H-53 Heavy Lift Helicopters Program Office (PMA-261) at Naval Air Systems Command. “Those helicopters have been around since the early 80s, so 30-plus years, and we'd been at war [on terrorism] for the last 15 years, so the machines had been used pretty hard.”

When Lt. Gen. Jon Davis took over as the USMC's deputy commandant for avia-

tion in June 2014, one of his first acts was to order independent readiness reviews for each of the Corps' aviation platforms. The CH-53E was the second platform examined, after the AV-8B Harrier.

The CH-53E's report, titled the Super Stallion Independent Readiness Review (SSIRR), “had a lot of findings that were causal to this low readiness,” Vanderborcht said. “Part of it was material condition of the aircraft, supply system agility, and issues with maintenance publications, support equipment and training. There were a lot of different issues that compounded the problem.”

In response to the SSIRR's findings, the Corps “put together a two-step strategy to attack readiness,” Vanderborcht said, the first step being a complete “reset” of all 147 aircraft, a process expected to take three years.

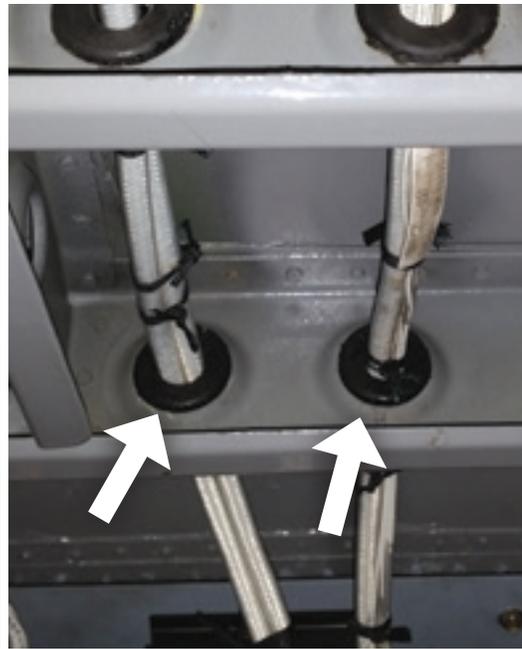
“We're going to put every airframe through an on-average 110-day process of stripping the aircraft down completely, rebuilding it and changing out any high-time components,” he said.

The reset validation aircraft was completed in April at Marine Corps Air Station New River, North Carolina, and flew back to the West Coast in June. The next five CH-53Es have begun the process—three at New River and two at Marine Corps Air Station Miramar, California. Vanderborcht said the plan is to eventually have 16 aircraft being reset at any given time—seven at both New River and Miramar, and two at Marine Corps Air Station Kaneohe Bay, Hawaii.

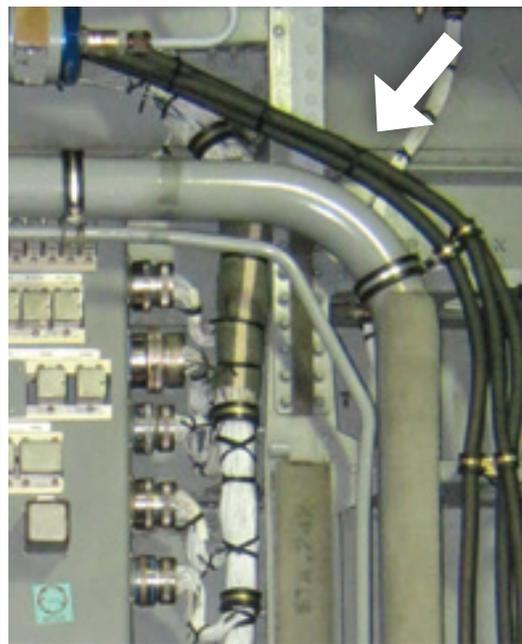
Though only the validation aircraft has been completed thus far, its results have Vanderborcht optimistic about the remaining CH-53Es. After not flying for four years, the validation CH-53E required only 12 days of functional check

The next five CH-53Es have begun the reset process with three pictured here in various stages at Marine Corps Air Station New River, N.C. The other two are at Marine Corps Air Station Miramar, Calif.

U.S. Navy photo by Keith Sparks



The example above of the first reset CH-53E shows the before and after installation of new grommets to prevent chafing hazards for wiring bundles passing through lightening holes. Below, water wash lines were rerouted and clamped to maintain clearance from relay panels, wiring harnesses and fluid carrying lines.



U.S. Navy photo by Keith Sparks

U.S. Navy photo by Keith Sparks

flights to be deemed operational, a significant reduction from the three to four months of check flights that are typically needed for Super Stallions that spend that much time grounded, Vanderborcht said.

“The reset process it went through did everything right,” he added. “I’ve been around 53s for 22 years, and with the exception of picking up a brand new one from the Sikor-

sky factory—which doesn’t exist anymore because the line is shut down—the validation CH-53E is the nicest one I’ve ever seen.”

Maintenance crews had already replaced fuel lines and redone the wire bundles in most of the Super Stallions as a direct response to the January 2014 crash, increasing the current percentage of ready CH-53Es to about 30 percent, an increase from last year

when only about 20 percent of the aircraft were ready to fly, Vanderborcht said.

“We only had 30-or-so aircraft up last year,” he said. “We’re in the 50s now, so we’ve rebounded pretty well from a year ago,” he said.

The second step involves addressing those remaining “systemic” issues, a preventative step meant to ensure another reset is not needed in the future.

“All these things that are needed in order to make sure the maintenance system all works well together,” from inaccurate maintenance manuals to support equipment shortfalls and training for maintainers and functional check pilots,” Vanderborcht said. “The reset itself is only one piece of the strategy. If we only did the reset and didn’t address all those system issues that got us to low readiness, within five years we’d probably be right back where we are now.”

Vanderborcht stressed that one aspect that will require particular attention is the training of CH-53E maintainers, most of whom have spent their entire careers in the Marines during a time when the focus has been on quickly turning out aircraft rather than taking the time to digest and learn the systems they’re working on.

“We’ve been at war [on terrorism] since 2001, so many of today’s senior maintainers in the Marine Corps joined when our modus operandi has been to make mission at all times. They’ve been taught to maintain airplanes by fixing what’s broken and get it back to the mission,” Vanderborcht said.

“Before 2001, maintainers would troubleshoot the system and take a long time to understand it, so there was a lot of knowledge developed by on-the-job-training. We’ve kind of lost all that knowledge. I would say the Marines today—not to their fault—are not as knowledgeable about the aircraft as they were prior to the war, Vanderborcht said.

Put another way, Marine maintainers have operated like a football team without an offseason or training camp in 15 years.

“We’re trying to get back to blocking and tackling, the basics,” Vanderborcht said.

Jeff Newman is a staff writer and contributing editor of the Naval Aviation News magazine. ✈

Marine Corps Builds Muscle with King Stallion

New 'Beast' Helicopter Will Triple Cargo Capacity of Heavy-lift Platform

By Jeff Newman



As it works to overhaul an aging fleet of heavy-lift helicopters, the U.S. Marine Corps is also approaching a major acquisition decision this winter that will allow production to begin on its replacement heavy-lift platform, the CH-53K King Stallion.

The new helicopter is aptly named—the current CH-53E Super Stallion has been the U.S. military’s most powerful helicopter since it debuted in 1981—and the King Stallion will almost triple that brawn. A key performance parameter of the heavy-lift platform is its ability to perform its primary mission—carrying heavy stuff over long distances—in the thinner air created by high elevations and hot temperatures, or “high/hot” conditions, said Col. Hank Vanderborcht, program manager for the H-53 Heavy Lift Helicopters Program Office (PMA-261) at Naval Air Systems Command (NAVAIR).

Photo courtesy of Sikorsky



Photos courtesy of Sikorsky

During a March 8 visit to the Sikorsky Development Flight Test Center in West Palm Beach, Fla., Marine Corps Col. Hank Vanderborcht (left) shows Gen. Robert Neller (right) how Marine maintainers reorganized the CH-53K's electronic boxes in order to provide easier access to connectors, an improvement made during development.

The CH-53K King Stallion successfully completed an external lift of a 27,000-pound payload June 17 at Sikorsky's Development Flight Test Center in West Palm Beach, Fla., completing one of the two key test points the platform needed to demonstrate prior to entering production.

The CH-53K is required to carry 27,000 pounds in cargo from a sea-level base where the temperature is 103 degrees to a landing zone that is 110 nautical miles away and 3,000 feet above sea level where it is 91.5 degrees. Such conditions comprise the standard "Navy high/hot day," in which the CH-53E only is capable of carrying 9,000 pounds.

"It's awesome. The thing is a beast," Vanderborcht said of the King Stallion. "The Echo is an incredibly powerful helicopter as it is, the most powerful that we have in the U.S. military. The K is going to make the Echo look like a toy."

That step up in power is necessary after a decade of war in which the U.S. military has retrofitted its vehicles and gear with heavy armor and weapons to counter emerging threats like roadside bombs and insurgent ambushes. A CH-53E pilot by trade, Vanderborcht noted that when he first started lifting Humvees in the 1990s, they weighed between 5,500 and 8,500 pounds depending on the version.

"Then we went to Iraq and Afghanistan and started hitting IEDs, and now they have up-armored Humvees with the big turret on top and all the thick glass, and those weigh around 12,000 pounds," he said. "So your 27,000-pound load is shotgun Humvees, which is two at the same time, and some additional—the Marines who drive the Humvees, some ammunition, things like that."

A safe assumption may seem to be that because the King Stallion can carry thrice the gear of a Super Stallion, fewer CH-53Ks would be needed to perform the heavy-lift mission. But the Marines plan on buying 200 of the new aircraft, a requirement determined by the Marine Corps Warfighting Laboratory, an increase on the original CH-53E fleet size of 178.

"The thing that's changed is the gear," Vanderborcht said. "You would think you don't need as many Ks because the K can lift more, but the problem is your gear has gotten a lot heavier."

The King Stallion will also be a much

safer helicopter than its predecessor thanks to its fly-by-wire flight control system, which replaces the manual mechanical controls in the CH-53E with an electronic system that flies the aircraft based on the pilot's input via the cyclic. The system also provides improved autopilot functions that help stabilize the aircraft in dangerous conditions such as brownouts.

For example, a CH-53K pilot will be able to program the helicopter to fly to a designated landing zone and, once there, maintain a 20-foot hover. By comparison, the stick-and-rudder Super Stallion is far more susceptible to disaster during brownout conditions, Vanderborcht said.

"In the CH-53E there's, no kidding, an iron rod that goes all the way from the pilot's hand to the flight control surface," he said. "You're coming in at night and you're trying to land that huge aircraft and a dust bubble engulfs you and you lose sight of the ground."

The King Stallion will also expedite its deliveries by using a triple-hook external

cargo system making its internal cargo space compatible with the U.S. Air Force's standard pallet.

Like the CH-53E, the CH-53K will have three external cargo hooks, but whereas the former can only transport one shipment at a time via either a single point off its middle hook or dual-point off the forward and aft hooks, the latter can use its hooks in any configuration.

"The beauty of the triple hook is that you can service three different landing zones with three independent loads in one pass," Vanderborgh said.

Meanwhile, the interior of the CH-53K has been configured to be compatible with the 463L Master Pallet, the standard cargo pallet of the Air Force. The CH-53E can only fit the 40-by-48-inch pallets used by most commercial retailers, so Marines in Afghanistan have had to break down the pallets coming off Air Force C-5 and C-17 cargo planes and repackage them for transport out to the Marine Air-Ground Task Force (MAGTF), Vanderborgh said.

"Now when that stuff starts rolling off the C-5 and C-17, because it's compatible with that pallet, we roll it right into a CH-53K," he said. "War is all about logistics. It's all about how quickly you can get your stuff out there—your troops, your beans, your bullets, your Band-Aids, all that."

The King Stallion took its first flight in October, successfully hovering for 30 minutes at 25 feet, at Sikorsky Aircraft Corporation's Development Flight Center in West Palm Beach, Florida, where all subsequent flight testing has been conducted.

NAVAIR awarded Sikorsky a \$25 million contract April 18 for the acquisition of long-lead material needed to build the first four CH-53Ks—designated Low Rate Initial Production Lot 1—and the next day the King Stallion completed its first external load test by lifting and hovering while carrying 12,000 pounds.

It expanded the envelope again May 20 by lifting a 20,000-pound load, and on June 7 conducted further flight expansion tests while carrying 12,000 pounds.

Ten days later, the CH-53K lifted a 27,000-pound load for the first time, one of the two key test points the platform needed to demonstrate before being cleared for production, a decision known as "Milestone C."

The second test point is transporting a 12,000-pound load for 110 nautical miles. The King Stallion has carried 12,000 pounds at speeds of 120 knots, but the platform has yet to undergo much distance testing, Vanderborgh said. The program is aiming for a Milestone C decision during the second quarter of fiscal year 2017, he added.

Once the program is cleared for production, testing will take on "a more operational flavor," Vanderborgh said. "For example, we're going to go out to ships and land on them, we're going to do aerial refueling testing, the kinds of things you would do in a normal operational scenario."

Initial operating capability for the CH-53K is set for 2019, when the first four aircraft will be delivered to Marine

Heavy Helicopter Squadron (HMH) 366, stationed at Marine Corps Air Station New River, North Carolina. The squadron's 16 Super Stallions will be spread across the remaining CH-53E fleet, and HMH-366 will continue receiving King Stallions until it becomes a full CH-53K squadron. The same transition process will then begin for another CH-53E squadron, and so on. Ultimately, the 200 CH-53Ks will be spread across 11 squadrons—eight active, one replacement and two reserve.

"I think it's going to revolutionize the way we're going to do war in the future," Vanderborgh said. "It's kind of like when V-22 [Osprey] came out—Marines will find ways to use these aircraft that we haven't even thought of yet, and I'm really excited about what the future holds with the CH-53K. I think it's going to be an unbelievable step up in capability for the MAGTF commander."

Jeff Newman is a staff writer and contributing editor of the Naval Aviation News magazine. ✎



The CH-53K flight test program has logged more than 35 flight test hours between two Engineering Development Model (EDM) aircraft, and EDM 1 has successfully achieved flight envelope expansion to 120 knots.

Star Warriors Complete First Expeditionary Growler Deployment

By Lt. j.g. Timothy Pryor



Electronic Attack Squadron (VAQ) 209 returned home to Naval Air Station Whidbey Island, Washington, in April 2016 following a two-month expeditionary deployment to the U.S. Pacific Command (PACOM)—a watershed moment nearly three years in the making for the Navy Reserve’s only electronic attack squadron.

Not only was this deployment of the VAQ-209 “Star Warriors” the first since 2011; it was its first since transitioning to the EA-18G Growler and relocating from Naval Air Facility Washington on Joint Base Andrews, Maryland.

In May 2013, VAQ-209 flight crews took their final flight in the venerable EA-6B Prowler and began a homeport shift to NAS Whidbey Island, the Navy’s home for electronic attack. Along the way, the Star Warriors moved people and equipment across the country, sent nearly 100 Sailors to both coasts on temporary training assignments, and put their aircrew and maintenance personnel through a year-long transition syllabus to learn to fly and maintain the new

aircraft. This is not always easy, but it is a balance that the Star Warriors have become familiar with during their 38-year history flying and operationally deploying in the EA-6A “Electric Intruder,” EA-6B and now the EA-18G.

Established in 1977—the year the original “Star Wars” movie was released—VAQ-209 received special permission from Lucasfilm to use the name and Darth Vader’s likeness in their livery. The Star Warriors have been a model operational Reserve force, deploying in support of Operations Deny Flight (1993-95), Allied Force (1999), Southern Watch (1992-2003), and Northern Watch (1997-2003). Prior to their 2016 deployment, VAQ-209 deployed to Iraq and Afghanistan in five of the six years from



2006 to 2011 in support of Operations Iraqi Freedom and Enduring Freedom.

In January 2016, after a year-and-a-half of training and inspections, the Star Warriors made history with their first operational Growler deployment. VAQ-209 was able to fill the Pacific Command requirement in lieu of extending an active squadron’s deployment. VAQ-209 began its deployment in Guam where it participated in an AGM-88 High-speed Anti-Radiation Missile (HARM) live-fire exercise with U.S. Air Force units, honed their airborne electronic attack skills, and finally participated in Exercise Cope North, a combined



An EA-18G from Electronic Attack Squadron (VAQ) 209 taxis out during Exercise Cope North in Guam.

U.S. Navy Photo by Lt. Cmdr. Pete Scheu

exercise designed to increase interoperability among U.S. and coalition air forces operating in the Pacific Theater.

“Cope North was a wonderful learning opportunity for the squadron and a highly successful way for VAQ-209 to begin deployment,” said Lt. Cmdr. Pete Scheu, a Reserve squadron maintenance officer from San Diego, California.

“Across a three-week exercise, our operations and maintenance teams pulled together to complete every scheduled sortie in order to provide critical electronic attack training for our crews and our coalition partners.”

In February, the squadron left the beaches of Guam for the snow of Misawa Air Base in northern Japan. While in Misawa, the Star Warriors integrated with the U.S. Air Force’s 35th Fighter Wing and the Navy’s Carrier Air Wing (CVW) 5 to further the joint collaboration that began on Guam.

In March, the squadron detached to Osan Air Base, Republic of Korea (ROK), to participate in a maritime counter special operations forces exercise with Air Force and Navy units from the ROK, along with the U.S. Air Force and Navy units. In addition to gaining exposure

to real world flying conditions on the Korean peninsula, VAQ-209 was able to plan and integrate with USS John C. Stennis (CVN) 74 Carrier Strike Group and embarked CVW-9, which were on patrol in the Western Pacific.

“The joint integration that we were exposed to while in Osan was nothing short of eye-watering,” said Lt. Cmdr. Cameron Dekker, squadron safety officer and officer-in-charge of VAQ-209’s Osan detachment.

Upon leaving Korea, VAQ-209 returned to Misawa Air Base to turn over with VAQ-138, an active expeditionary Growler squadron, and prepare for their return trip across the Pacific. As the deployment came to a close, VAQ-209 once again proved that it will continue to provide the capability of an active Growler squadron when operations require it.

“For two months, VAQ-209 provided the same capability and capacity as any active component squadron, and the supported commanders did not notice any difference,” said squadron Commanding Officer Cmdr. Matthew Ross. “That was our goal. We gained valuable experience for the squadron, and allowed our active component counterparts to remain home with their families. All our folks appreciated the opportunity to contribute in such a meaningful way.”

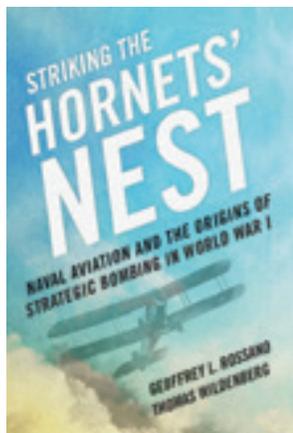
The squadron returned home safely to their families and their civilian careers in early April.

“Our first deployment was a great success,” Ross said. “The squadron was able to prove itself in many different arenas across the Pacific and gain valuable training and experience. Our maintenance effort was fantastic. The entire squadron outperformed any standard I could have set for them and I am immensely proud of the bar that we set. It was also great to lead the squadron back to the deployment cycle again.”

Lt. j.g. Timothy Pryor is the Electronic Attack Squadron (VAQ) 209 Intelligence Officer. ✈️

Professional Reading

By Cmdr. Peter Mersky, USNR (Ret.)



Striking the Hornets' Nest: Naval Aviation and the Origins of Strategic Bombing in World War I

Geoffrey L. Rossano and Thomas Wildenberg

Naval Institute Press, Annapolis, MD. 2015. 277 pp. Ill. \$49.95

In his 1958 book “British Naval Aircraft 1912-58,” senior British military author, Owen Thetford, wrote “It is not always appreciated that the Admiralty was the first of the British Service Departments to recognize the potentialities of the large aeroplane

for long-range bombing work as early as December 1914.”

In closing their new book on strategic bombing during World War I, these two experienced authors quote one of the main personalities responsible for instituting such a program, albeit not immediately as successful as they had originally hoped.

“[Robert A.] Lovett’s brainchild...in a 1942 interview...[said] ‘I got tired of chasing submarines all over hell...the way to get ‘em was to pound their bases from the air until reduced...The successful use of this weapon depends on its employment en masse, continuously and aggressively.’”

The authors conclude: “Both literally and figuratively, it was not very far from the World War I raids on the submarine bases at Bruges and Zeebrugge to the World War II skies above Berlin and Tokyo.”

Somewhere in between these two thoughtful musings is the main story of this heavily researched account of the painstaking development of the Allied strategic bombing campaign, its aircraft, and most importantly, its people who planned the missions and flew the fragile aircraft to deliver the big bombs of the day, on German submarine pens in Belgium and then other inland targets toward the end of the war. The book discusses the development of these two campaigns of early anti-submarine warfare (ASW) and bombing the enemy’s industrial complexes. Its title comes from U.S. President Woodrow Wilson’s likening the first part of hitting the sub pens as “striking the hornets in their nest.”

This highly detailed narrative is the first effort, accomplished from nearly a century’s vantage point, of describing the many phases of a very complicated and often politically motivated attempt to establish a strategic bombing force using British, Italian, French, and, finally, American resources including both U.S. Navy and U.S. Marine Corps assets. It was a tremendous effort that actually saw very little positive effect other than how a later version might succeed, which it did a quarter century lat-

er when British and American heavy bombers hit the Germans and the Japanese night and day, destroying the Axis powers’ industrial ability to wage war.

Writing the book must have been a daunting challenge. There were a lot of resources to consult to gain a feel of veracity and scholarship, but these two writers were up to the challenge having written several books on their own touching on various associated subjects of pre-World War II aviation. Their in-depth writing does occasionally bog down the flow, but they had to present all the personalities involved, especially the young American naval aviators whose dedication and intuitive skill led them along the obstacle-strewn paths to their objective, namely, creating the bombing force required to accomplish their superiors’ wishes.

Although results might not have justified such an eventually large expenditure of manpower and aircraft, ASW soon became a major occupation along the weather-plagued French and Belgian coasts that fortunately matured during World War II and in the decades that followed.

As the Allies, especially the British and then the Americans, began thinking about what to do about the submarine menace, the question of how to organize a response that included the men, both flight crews and ground troops, and the aircraft needed generated several considerations. The British wanted to strike the pens with the newly-introduced weapon of the heavy bomber. Handley-Page had designed a huge (at the time) twin-engine bomber, the O/100 that could carry 16 112-pound bombs as well as five defensive machine guns. Its maximum speed of 85 mph might not have been anything to crow about but it was an imposing machine. The designation O/100 was a uniquely British invention. Handley-Page used an alphabetic sequence to designate new designs, and “100” indicated the particular type’s wingspan in feet. Thus, the “O” model had a 100-foot wingspan. However, later models of the bomber, the O/400, and the V/1500, which were entering service at war’s end, used the numbers to indicate the combined horsepower of its engines. The “V” model used four 375-hp engines and was just entering service when the armistice took effect on November 11, 1918.

The O/100s had a somewhat checkered career. The third aircraft fell into enemy hands on January 1, 1917, because of a navigational error on the part of the crew. They started flying their intended mission, namely bombing the submarine pens in

Belgium, and then rail centers and airdromes (airfields) used by Gotha bombers, the opposite numbers of the O/100 that were bombing London.

The strangest feature of the operation was that the Handley-Page bombers were owned by the Royal Naval Air Service (RNAS). They were naval aircraft! At first flown by British crews, American naval aviators, some newly designated officer pilots often serving as gunners, occasionally took their turn at the wheel of the huge bombers. It was valuable experience that would serve the young Americans well.

“Striking the Hornets’ Nest” is also the story of how America built up its own strike force, in today’s vernacular, albeit late in the war. Designated as the Northern Bombing Group, the Navy and then the Marine Corps tried to develop squadrons of bombers using De Havilland DH-4 two-place aircraft, especially DH-4s equipped with Liberty engines manufactured in the U.S. It was not an easy process and although there were quite a few American aviators in Britain and France by late 1917, they found getting aircraft to fly challenging and often had to settle

for taking exchange tours with the British, and occasionally the French, who were flying heavy and slow Breguet bombers that the Americans came to despise.

The Italians were also developing their own heavy-bomber force using big Caproni biplanes and triplanes with Fiat engines. The problem was getting sufficient numbers of the Capronis over the Alps. Then Army Major Fiorello LaGuardia, who would soon gain fame as the colorful mayor of New York City, but was at the time assigned as a liaison pilot, tried to help, but politics and the logistical problems proved to be too much. The Navy and Marine Corps, under the energetic leadership of early Marine aviator, Maj. Alfred A. Cunningham, decided to press on with the smaller DH-4s, some gained from British sources. The DHs were available in enough numbers and the Marine Corps finally made great use of them in the closing weeks of the war.

There is a lot of information, with many details revealed for the first time, along with some interesting photos. All in all, a fine effort. 🐦



F4U Corsair vs Ki-84 'Frank,' Pacific Theater 1945

Edward M. Young, Osprey Publishing Ltd., UK. 2016. 80 pp. Ill. \$20

A somewhat esoteric pairing in Osprey’s successful *Duel* series, No. 73, certainly showcases an equally somewhat unknown Japanese fighter of the late war, the Nakajima Ki-84 “Hayate” (Gale or Hurricane) that was given the codename “Frank.” (It seems every country had a fighter they dubbed Hurricane or Storm. No one could forget the British Hawker Hurricane while the Finns had a fighter they named “Myrsky”—no relation in either name or heritage, different spelling.)

Edward Young has written several books for Osprey, which we have reviewed. A few people have opined that perhaps we are reaching the end of candidates for the series, but I don’t think so. At any rate, this new book will certainly interest people who want to know about Japanese aircraft that rose to fight the unstoppable Allied “Blue Blanket” that was spreading over the Pacific by 1944.

The author highlights the wartime situation in 1944–45, as the Allies rolled on toward the Home Islands, including the invasion of the Philippines in early 1945 where Navy F4U Corsair pilots began encountering a new Japanese fighter, which they often confused with the burly Nakajima Ki-44 “Tojo,” and the earlier Ki-43 “Oscar,” both of which had a few visual similarities between them and the veteran Navy A6M Zero fighter, now codenamed “Zeke.” Graphics showing physical and performance data.

Ki-84 “Frank”

F4U Corsair

which had a few visual similarities between them and the veteran Navy A6M Zero fighter, now codenamed “Zeke.” Graphics showing physical and performance data.

There are several good photos of the Japanese side, pilots and, of course, the Frank, a type that has never enjoyed the exposure of other aircraft like the Zero. There were never enough Ki-84s this late in the war, but those that were encountered usually gave a fairly good account of themselves against U.S. stalwarts like the Corsair, which had certainly come into its own by this time.

This latest title is an excellent addition to Osprey’s highly successful line of moderately priced aviation books. 🐦



Photos courtesy of Osprey Publishing

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Squadron Spotlight

Carrier Airborne Early Warning Squadron (VAW) 120 "Greyhawks"

Established: July 6, 1948

Based: Naval Air Station Norfolk, Virginia

Current Commanding Officer:

Cmdr. Evan L. Morrison

Mission(s): E-2 Mission: *Airborne Early Warning (AEW), Command and Control (C2.)*

C-2 Mission: *Logistics*

Brief History: Carrier Airborne Early Warning Squadron (VAW) 120 was commissioned on July 6, 1948, as Carrier Airborne Early Warning Squadron (VAW) 2, flying the TBM Avenger, the AF Guardian and the AD5W Skyraider. In 1956, the squadron was redesignated as VAW-12 and tasked exclusively for Airborne Early Warning. Between 1959 and 1961 a modified version of the E-1B Tracer was introduced to the fleet which housed an airborne radar and was designated the WF-2 or "Willie Fudd."

By 1966, VAW-12 received the first E-2A Hawkeye and was supplying detachments using two different aircraft aboard 10 Atlantic Fleet aircraft carriers in addition to training personnel for those detachments. As the squadron continued to grow in both personnel and materiel, a decision was made to reorganize the squadron as an Air Wing and on April 1, 1967, VAW-12 officially became Carrier Airborne Early Warning Wing 12. Shortly thereafter, the squadron was renamed as RVAW-120 and became the Atlantic Fleet Replacement Squadron (FRS).

In May 1983, RVAW-120 officially became VAW-120, reflecting the task load of a fleet squadron and a training squadron. Expanding the training mission in June 1985 to incorporate the carrier logistics mission, the first C-2A Greyhound Carrier



On-board Delivery (COD) aircraft was delivered to the squadron and a new training program was developed. In 1994 it became the sole training site for all E-2 and C-2 aircrew with the consolidation of the West-Coast FRS (VAW-110) and a new version of E-2C was introduced, the E-2C+ Group II, which incorporated a powerful new radar and Global Positioning System (GPS). Currently, the squadron trains the fleet with the most technologically advanced airborne early warning platform, the E-2D Advanced Hawkeye. With the introduction of this revolutionary new aircraft in 2012, the fleet now employs cutting-edge technology ensuring America not only has an edge on her adversaries but maintains a commanding lead. The VAW-120 Greyhawks continue their proud tradition of providing the world's finest aircrew for the critical missions of carrier airborne early warning and fleet logistics support.

Aircraft Flown: E-2C Hawkeye, E-2D Advanced Hawkeye, C-2A Greyhound

Number of People in Unit: 653 military personnel; 232 civilian and contractors

Significant Accomplishments:

- **July 1, 1967:** RVAW-120 was formed to be the Wing's formal training squadron
- **May 1983:** RVAW-120 became VAW-120
- **June 1985:** VAW-120 received the first re-procured C-2As delivered to the Navy
- **November 1993:** VAW-120 received its first E-2C+ aircraft
- **Summer of 2012:** VAW-120 received the first E-2D Advanced Hawkeye.





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