

Summer 2011
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100 Years of Progress and Achievement

CENTENNIAL

of Naval Aviation



“Flex Deck Follies”

The Navy’s P-51 Mustangs

Black Dog



“NAVAIR Rising”

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COVER: “Navair Rising”, Oil on canvas; 2011. Original artwork was painted by artist Keith Ferris and illustrates the Curtiss A-1 Triad being piloted by Lt. Theodore “Spuds” Ellyson near the Hotel del Coronado in the fall of 1911. (Courtesy of the Artist/www.keithferrisart.com)

Word From the 'Air Boss'



**Vice Adm.
Al Myers
Commander, Naval Air Forces**

I am extremely pleased with our continued celebration of Naval Aviation's first 100 years. We are halfway through our centennial year and at the height of the 2011 air show season. Our Naval Aviation team's participation at these air shows and so many other events around the country demonstrate our pride, professionalism and commitment to excellence for all Americans to see.

While the general public is impressed by our aircraft and ships, the heart of our profession is the passion within every member of our team. Our dedicated military and civilian professionals are our hallmark, and they ensure that U.S. Naval Aviation is ready to go in harm's way anytime, anywhere, when called upon to do so.

During our first century, the machines and technology have changed and evolved, but our people are resolute. I am exceptionally proud of each and every one of the men and women who are Naval Aviation.

Fight to fly, fly to fight, fight win!

From the Editor

We're now nearly half way through the Centennial year. The response to Centennial events has been superb. Many of our biggest events are yet to come, hopefully to a town near you. We certainly hope you make it to a Centennial event!

Including this issue, there are only three "Centennial" magazine issues left to write. Hopefully you have learned more about Naval Aviation than you knew before, as there are many aspects to explore. Three aspects of Naval Aviation that don't get much attention are explored in this issue; Naval Aviation in Europe in World War II, the "Flex Deck" rubber carrier deck experiments of the 40s and 50s, and one of my favorites, "Yehudi" lights as a form of active camouflage. Sit back, relax, and read on!



- Capt. Richard Dann

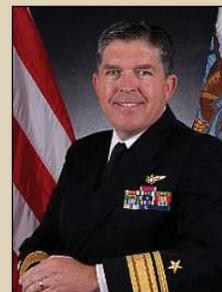
Centennial Force Leadership



**VADM Allen G. Myers
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**LtGen Terry Robling
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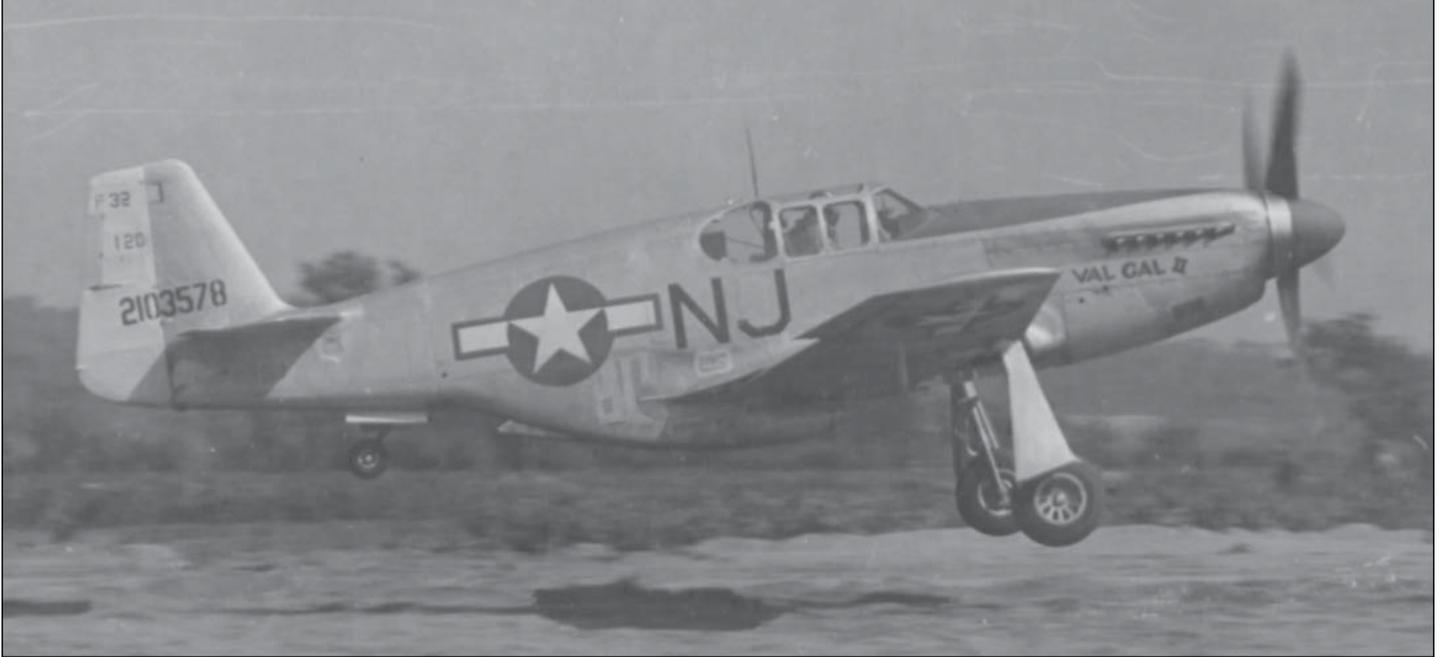


**RADM Pat McGrath
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Chief of Aviation**

The Navy's P-51 Mustang Squadron



U.S. Army Air Force North American F-6C Mustang (42-103578) with Navy Lt. Stanley Fierstein at the controls as he departs St. Raphael/Frejus Airfield in Southern France. 11 Naval Aviators from Cruiser Scouting Squadron 8 (VCS-8) flew high speed scouting missions in U.S. Army Air Force Mustangs. (Tailhook)

Reprinted from Naval Aviation News, May-June 1994

Operations in the Mediterranean had shown that Curtiss SOC Seagulls and Vought OS2U Kingfishers were too vulnerable to operate effectively in skies infested with German fighters. An alternative to their use had to be found. Vice Adm. H. Kent Hewitt, Commander, Western Naval Task Force, convened a conference in January of 1944 to tackle this issue. Representatives of the Royal Air Force (RAF), Fleet Air Arm (FAA), U.S. Navy and staff gunnery officers attended. The purpose of the meeting was to decide which available aircraft would be the most suitable for the air spotting mission. The aircraft chosen was the North American P-51 Mustang. Time did not permit training Navy observation squadron (VCS/VO) pilots to fly the P-51 in time for Operation SHINGLE, the amphibious invasion of Anzio, so the Navy trained Army Air Forces fighter pilots to perform the spotting mission.

Ideally, the Navy needed to train fighter pilots in handling the air spotting mission, and in December the first steps toward this goal were being made. The problem was the urgent demand for fighter-observation pilots in theater. On January 5, 1944, Commander, Cruiser Division Eight, requested that Commander in Chief, Mediterranean, arrange for the training of four Naval Aviators from USS BROOKLYN (CL 40) in high-speed aircraft. The request was approved, and on January 15, the commanding officer of Cruiser Scout Squadron 8 (VCS-8), Lt. Delwine A. Liane, reported to Berteaux, Algeria, with three other VCS-8 aviators from BROOKLYN to commence training in Curtiss P-40 Warhawks. In February, aviators from PHILADELPHIA (CL 41) aviation unit joined those from BROOKLYN. Fighter training for both vessels' aviation

units continued through spring, and in April the Naval Aviators began checking out in P-51 Mustangs.

April 21, Commander, U.S. Naval Forces, Northwest African Waters, approved the assignment of nine Naval Aviators to the 111th Tactical Reconnaissance Squadron, flying F-6A Mustangs (a camera-carrying reconnaissance version of the Allison-engined P-51 Mustang). This was the beginning of a four-month association between the 111th and VCS-8. Naval Aviators continued training in P-51s and soon began flying operational missions in support of the campaign in Italy.

On June 15, Lt. j. g. Harold J. Eckardt of BROOKLYN's aviation unit was flying an F-6A on a reconnaissance mission when his leader was shot down by anti-aircraft fire. He circled his downed comrade until homing stations could get a fix on his location. Eckardt then continued the mission alone. Poor weather forced him to fly within the effective range of German flak positions and his aircraft was badly damaged. The 111th's war diary recorded Eckardt's return: "*Lt. j. g. Eckhardt [sic], a Navy pilot, came back from his mission with holes in the scope [scoop] of his plane. Gas and oil were pouring out making Lt. Eckhardt a very lucky guy to be back.*" For his actions Lt. j. g. Eckardt was awarded an Army Air Medal.

Late in July, 10 brand-new P-51C/F-6C Mustangs were delivered to the 111th for use exclusively by VCS-8 aviators. The invasion of southern France began on August 15, and by August 30, Commander, Task Force 86, requested that all Naval Aviators assigned to the 111th Tactical Reconnaissance Squadron return to their ships. In all, 11 flyers from VCS-8 participated in combat operations from the cockpits of 111th P-51 Mustangs.

Jack the Lionhearted

By Capt. Vincent Secades, USN (Ret.)

Late in the afternoon of 3 July 1951 the alert reached the Japanese LST Q-009, on duty off Wonsan Harbor, North Korea, then under a naval blockade. An F4U pilot had bailed out from his burning Corsair about 35 miles southwest of the city of Wonsan. Lt. j. g. John K. Koelsch immediately volunteered to attempt a rescue. How Jack Koelsch ended up leading the Q-009 helicopter unit is in itself a remarkable story. He had been the Officer-in-Charge (OinC) of the HU-1 helicopter unit aboard USS PRINCETON (CV-37) since October 1950. Early in June 1951, when his normal combat tour had expired, he requested to be transferred to the HU-2 helicopter unit embarked on Q-009. That unit needed a pilot because its OinC, Lt. John Thornton, had been shot down. His shipmates could not persuade Jack Koelsch not to take the risk. He felt that he had a mission to perform as a rescue pilot, that his fellow fighting men needed his service, and that he would not be doing his best for his country if he returned to the U.S. June 22, shortly after arriving at his new temporary unit, he rescued a downed Marine Corsair pilot from the waters of Wonsan Harbor within range of shore batteries.

John Kelvin Koelsch was born in London, U.K., on December 22, 1922. After completing high school in Hudson, N.Y., he entered the Aviation Cadet program on 14 September 1942. He completed flight training and was commissioned as an Ensign in the Naval Reserve on 23 October 1944. He served tours with Composite Squadron 15 (VC-15), Torpedo Squadron 97 (VT-97), and Torpedo Squadron 18 (VT-18). He was promoted to Lt. j. g. August 1, 1946. In mid-1949 he reported to HU-2, NAS Lakehurst, N.J., for helicopter training, which he completed on December 9 of that year. He then reported to Helicopter Utility Squadron One (HU-1) at NAAS Miramar, Calif. He sailed on his combat tour aboard USS PRINCETON on November 9, 1950.

The 3rd of July, with the twilight approaching, Lt. j. g. Koelsch and his air crewman, AM3 George M. Neal, manned their HO3S-1 helicopter and launched into the brume, under a thick overcast that precluded any possibility of combat aircraft support. Thus, a saga began that would be marked by indomitable courage, immense fortitude, and would end in tragedy.

Capt. James V. Wilkins, USMC, the downed Corsair pilot, had parachuted into the Anbyon Valley near a heavily defended main supply road. The North Koreans were lined up along the road firing at him. He took cover and, as soon as the gathering brume obscured the North Koreans' vision, began to move to the nearby mountain. He was suffering from severe burns on his legs and a twisted knee. Soon he heard the chop-chop of an approaching helicopter. Capt. Wilkins would later recount, "When I realized it was a chopper, I scrambled back down the mountain to my parachute. I got down near it just as the chopper was finishing its first search of the area, flying at about 50 feet. He was way out near the main road, and I figured, there he goes, because the ground fire was thicker than the overcast." The HO3S was being peppered by ground



Lt. j. g. Jack Koelsch received the Medal of Honor for his attempted rescue of a downed Marine pilot. With his HO3S shot down, Koelsch, his crewman and the Marine were taken prisoner. Koelsch would later die in captivity, but resisted the North Koreans to the utmost of his ability. (Vincent Secades)

fire. A burst shook the chopper, but Jack Koelsch kept it under control and flew away. "I figured he would surely leave," said Wilkins. "Then, by the Lord, he made another turn back into the valley a second time. It was the greatest display of guts I've ever seen." On the second pass Koelsch spotted Wilkins and moved over him as Neal lowered the horse collar. Wilkins recounted, "He dropped the sling and I got into it. The North Koreans had every damn gun they had firing. Frankly, it was so bad I would rather have taken my chances at staying on the ground." As Neal began to hoist Wilkins up, a blast of ground fire hit the helicopter, and it crashed down and rolled over. "The chopper's door opened, and I saw Jack Koelsch and George Neal hanging upside down in their belts," remembers Wilkins. "Are you O.K.?" I yelled at them. "Never mind that," Jack answered. "Are you O.K.?" All three survivors managed to extricate themselves from the wreckage and headed for the mountain. For three days they hid in the brush, evading the Communist patrols looking for them. "We decided we'd better get the hell out of there on foot," related Wilkins. "We got to the coast in seven days, moving mostly at night. We hadn't had anything to eat in nine days, and damned little to drink." They took refuge in an abandoned, dilapidated hut near a fishing village. Wilkins continued, "Jack took the watch, and Neal and I sacked out. We were there about three hours, and I was half-dozing, when suddenly I heard Jack say in a perfectly normal voice, 'How do you do. Won't you come in?'" Communist soldiers had discovered their hide out and took them prisoners. Wilkins narrated, "They tied us up and marched us through town, with all the civilians shouting threats and throwing things at us, to a headquarters. During all this time, Jack was constantly pointing out my burns to the Koreans and insisting that I needed hospitalization. I had maggots in my legs, and they

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Centennial of Naval Aviation

Scramble One!



A Grumman FM-2, similar to the aircraft flown by Robert Porter on November 9, 1944 runs up its engine while under catapult tension. The FM-2 was a small aircraft and ideally suited for operations aboard escort carriers such as USS SALAMAUA, (CVE 96). (NHHC)

By Robert W. Porter

November 9, 1944, I was in VC-87, flying Wildcats aboard USS SALAMAUA (CVE 96). We were anchored with the fleet in the Ulithi Lagoon preparing for major operations ahead. One of our FM-2s Wildcats was on alert, hooked up to the catapult, the only one so rigged. I was reading on my bunk in our junior officers' stateroom. Seaman First Class Benny Moreno, one of our plane captains, was tending the plane. He took pride in his work and had the Wildcat ready to go.

High above the lagoon a Japanese reconnaissance aircraft was spotted heading our way. The alert was sounded. I hustled to the ready room before anyone else and heard the loudspeaker blasting, "Flight quarters! Scramble one fighter!"

I grabbed my gear and hurried to the FM-2 where Benny was waiting. He helped me with my equipment and we climbed onto the wing. I manned the cockpit and Benny leaned in to help me strap in before I started the engine. The damp salt air made the seat belts sticky and hard to cinch tight, so all four of our hands were on the belt.

Suddenly, the catapult fired! Benny was tossed up into the air as the FM-2 leapt forward. The vertical stabilizer caught Moreno across his back, the aircraft carried him along until it heaved him onto the forward part of the flight deck. He died instantly. Benny was one of our oldest sailors, a 30 year-old Filipino with a wife and three children.

As the Wildcat jolted forward, my head snapped back. I was startled and confused and thought, "*So this is it—this is the way I'm going to get it.*" But adrenaline flowed through me and positive thoughts took form. I was able to lift my head off the head pad in time to see the flight deck disappear beneath me. I grabbed the control stick, and eased the nose down to retain some flying speed. The FM-2 responded, for the moment

anyway. I prepared for a tail-first water landing. I was traveling at 60 mph when I hit the water. The plane skipped momentarily then slammed into the sea.

Not being strapped in, my face smashed into the gun sight. I lost consciousness. The canopy slid forward, ran off its track and jammed shut. The aircraft was already sinking. In less than a minute the plane's tail slipped below the surface.

Carrier personnel hurried to help. Two sailors manned a whale boat and started toward me. The cockpit was filling with water as I struggled to regain consciousness. I felt as if I was waking from a dream. In a few seconds I knew where I was.

I tried to open the canopy but it wouldn't budge. I must have gained strength because with a second desperate effort I was able to move it back far enough to work my way out, even with my gear still attached. As soon as I was clear, I popped my Mae West and slipped out of the parachute harness.

The water was dark but I saw light above and I started kicking and pulling with all my might. It was later determined I was 70 feet down. Fortunately, I had been a California beach boy—a surfer and skin diver—and I kept on swimming though I believed I was too far down to make it. Near the surface I lost my breath, gulped sea water then broke the surface, gasping for air, vomiting and bleeding. The buoyancy of my Mae West probably saved my life.

My vision was fuzzy but I saw the whale boat speeding toward me. The sailors drew alongside, hauled me in and headed back to the carrier. Once there, thinking I would miss out on our first engagement with the enemy, I sought an airplane to join the fray. But CPO Spaven wisely cornered me and insisted I go to sick bay to get my face sewn up. I was flying again a few days later.

There may have been others, but I believe I could be the only pilot to launch from a carrier before the engine was started.



2011 Blue Angels Schedule:

March

12 NAF El Centro, CA
19-20 Keesler AFB, MS
26-27 NAS Meridian, MS

April

2-3 Sun-N-Fun, Lakeland, FL
9-10 NAS Corpus Christi, TX
16-17 Fort Worth JRB, TX
30 MCAS Beaufort, SC

May

1 MCAS Beaufort, SC
3-4 NAS Pensacola, FL
7-8 NAS New Orleans, LA
8 Flight Academy Fly-over, Pensacola, FL
14-15 Indianapolis, IN
21-22 TBD
25 & 27 USNA show and graduation fly-over
28-29 Millville, NJ

June

4-5 Rockford, IL
11-12 Evansville, IN
18-19 Davenport, IA
25-26 North Kingstown, RI

July

2-3 TBD
9 Pensacola Beach, FL
16-17 Rochester, NY
23-24 Ypsilanti, MI
30-31 Great Falls, MT

August

6-7 Seattle, WA
13-14 Fargo, ND
27-28 Brunswick, ME

September

3-5 NAS Patuxent River, MD
10-11 Lincoln, NE
17-18 Millington, TN
24-25 NAS Oceana, VA

October

1-2 MCAS Miramar, CA
8-9 San Francisco, CA
15-16 NAS Lemoore, CA
22-23 El Paso, TX
29-30 San Antonio, TX

November

5-6 NAS Jacksonville, FL
11-12 NAS Pensacola, FL

(Continued from Page 5)

looked pretty bad. So finally they gave me two guards and moved me out.” James Wilkins would never see Jack Koelsch alive again.

Jack Koelsch and George Neal joined other prisoners at a POW compound. Infuriated by his defiant attitude, his jailers immediately singled out Jack for harsh treatment, trying to break his will and use him for propaganda purposes. He was placed in solitary confinement, beaten and tortured mercilessly. Throughout his ordeal, Jack Koelsch remained defiant and true to his principles. His example of courage, patriotism, and loyalty to his brothers in arms served as an inspiration and morale booster to his fellow prisoners. This courageous young man, of slender build, but with the heart of a lion, finally succumbed to mistreatment, malnutrition, and dysentery on October 16, 1951. On August 3, 1955, Lieutenant Junior Grade John Kelvin Koelsch, United States Navy, was posthumously awarded the Medal of Honor for his actions in Korea. He was the first helicopter pilot in history to be awarded his country’s highest military decoration. He is buried in Arlington National Cemetery, Arlington, VA.

Both Capt. Wilkins and AM3 Neal survived their POW ordeal and returned to the U.S. after the end of the war. Aviation Machinist’s Mate Third Class George Milton Neal was awarded the Navy Cross for his actions in Korea. USS KOELSCH (FF-1049) was commissioned on June 10, 1967. It remained in service until May 31, 1989.



2012 Marks Marine Aviation Centennial

“For nearly 100 years, Marine Aviation has demonstrated the adaptability, agility and unique ethos that come with the title “Marine.” Supporting our ground and logistics brothers and sisters, Marine Aviation has forged a lasting legacy of professionalism, innovation and transformation. The centennial of Marine Aviation provides us a unique opportunity to reflect on this legacy of success as we turn our eyes to the future.”

— General James F. Amos,
35th Commandant of the Marine Corps

From the first aerial exploits of 1stLt Alfred Cunningham in 1912 to the mountains of Afghanistan today, Marine Aviation has been at the forefront of advancing aviation technology and doctrine. As we punctuate a century of achievement this year by celebrating the Marine Aviation Centennial we recognize that our success rests on the shoulders of audacious and innovative Marines, who were unyielding in their integration of aviation into the Marine concept of combined arms and unwavering in their support of the individual Marine on the ground.

A GLANCE AT THE PAST -

EARLY JET POWER



(Above) The Ryan FR-1 Fireball was a hybrid aircraft with a Wright R-1820 Cyclone piston engine in the nose and a General Electric J31 turbojet in the tail. VF-66 was the only squadron to operate the Fireball. (San Diego Air & Space Museum)



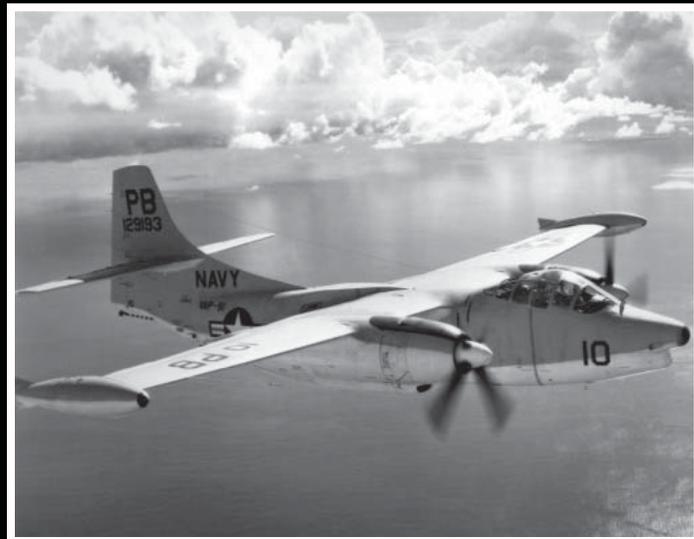
(Above) The Navy's first jet was an Army Air Force Bell YP-59A Airacomet. The Navy would eventually evaluate five Airacomets with the designation YF2L-1. Capt. Frederick Trapnell was the first Naval Aviator to fly a jet, the USAAF XP-59A on April 21, 1943. (NNAM)

The McDonnell XFD-1 Phantom was the first American jet to operate from an aircraft carrier and the first jet assigned to squadron service with the Marine Corps. Seen here is the first carrier takeoff of a jet on USS FRANKLIN ROOSEVELT (CVA42) July 21, 1946. (NNAM)





(Above) The North American FJ-1 Fury was the first operational jet aircraft in the Navy's inventory. This VF-5A (later VF-51) is seen coming aboard USS BOXER (CVA 21) with XO Lt. Cmdr. Bob Elder at the controls. (Tailhook Assn.)



(Above) The North American AJ Savage was powered by two Pratt & Whitney R-2800 reciprocating engines plus a single Allison J33 turbojet in the lower rear fuselage. (Tailhook Assn.)



(Above) The XF6U-1 Pirate was Chance Vought's first attempt at a jet-powered aircraft. The Pirate lacked performance and production ceased after just 33 aircraft. (Vought Heritage Archives)



Grumman XF9F-2 Panther (BuNo. 122475) was the prototype for the most successful of the early carrier jets. Panthers played a major role in the Korean War with both the Navy and Marine Corps. (NHHC)

Centennial of Naval Aviation

He Was One Lucky Dog

By William Lawrence, reprinted with permission

High winds and heavy rain from the Atlantic Ocean were in the forecast for the Naval Air Station at Brunswick, Georgia one summer night in 1955.

The airships (blimps) at the station were ordered to be flown out of the area, as they could not be docked or stowed in the hangars during bad weather.

I was in charge of the 20-man ground handling crew with Airship Squadron 2 (ZP-2). Our job was to assist a blimp being released from its mobile docking mast. We handled the lines attached to the blimp until it gained enough speed to lift off.

Our squadron had adopted a stray mutt we named "Black Dog." He had a habit of chasing after blimps on the runway. On this night, just as the blimp became airborne, Petty Officer Hampton started yelling, "Black Dog! Black Dog!," and pointed at the blimp. In the darkness, I couldn't see what he was pointing at. Then the blimp circled the field and flew near the floodlights. There was Black Dog, hanging by one of the short lines! The line had thrown a half-hitch around one of his hind legs, and his weight was holding him in place.

The officer of the day was contacted. He immediately issued Emergency Plan I, which meant all hands on deck. The blimp pilots were then told to dump all nonessential weight from the airship and fly back over the base for a landing pass. That meant they were to fly as low and as slowly as possible without actually touching down.

As the blimp came back, all available lights were turned on. Black Dog was still hanging in there. We ran alongside the blimp, and Hampton grabbed Black Dog as I prepared to cut the line. But as he did, the tension on the line eased and our little mascot fell into his arms and was saved.

I will always remember Black Dog licking Hampton's face-terrified, but happier than ever. The ambulance took Black Dog to sick bay. His front paw pads had been scraped just before he

went airborne. He wore bandages and booties for a couple of weeks and made a full recovery. Black Dog was also a quick study when it came to airship flights. That was his first, and last, as I never again saw him on the runway chasing after a blimp.



Black Dog, the mascot of Blimp Squadron 2 (ZP-2). Black Dog's 1955 blimp flight ended happily, with only minor scrapes to his paw (William Lawrence)



Airship Squadron 2 (ZP-2) had another mascot besides Black Dog. This turtle bore the squadron logo on its shell. (William Lawrence)

News and Notes

- HM-12 celebrated 40 years of service April 15 and 16, 2011 at NAS Oceana, Va.
- October 16, 1943 has been officially designated as the Birthday of Rotary Wing Naval Aviation.
- The 27th and final Centennial of Naval Aviation Heritage Paint Project aircraft, Hawker Beechcraft T-6A (BuNo 165966) was delivered to Training Wing SIX at NAS Pensacola, May 31, 2011.
- The A-3 Skywarrior has flown its final flight with the delivery of EA-3B (BuNo 144865) to the National Naval Aviation Museum, June 30, 2011. Another was delivered to NAS North Island June 28, and will eventually be displayed at the Pacific Air Museum on Ford Island in Hawaii.
- May 29, 2011, the Secretary of the Navy Ray Mabus announced the selection USS JOHN F. KENNEDY as the name for the second FORD-Class aircraft carrier, (CVN 79).



Centennial 2011 "Tier 1" Events Schedule

Ted Carlson/Fotodynamics

This year, the Sea Services will partner with and execute 32 "Tier 1" Centennial of Naval Aviation events across the country, plus two gala events. These events will include extensive Navy, Marine Corps and Coast Guard involvement, in conjunction with existing Fleet Weeks, Navy Weeks, Marine Corps Weeks, Blue Angels' Air Shows, and other significant aviation events during the Centennial year.

Join us across the country this year as we celebrate 100 years of progress and achievement during the Centennial of Naval Aviation.



Centennial Kickoff & Aerial Review/Open House, San Diego CA.	09-Feb	-	12-Feb
Mississippi Navy Week, (NAS Meridian & Keesler AFB air shows), MS.	19-Mar	-	27-Mar
NAS Corpus Christi Salute to 100 Years of Naval Aviation, TX.	09-Apr	-	10-Apr
Dallas Navy Week & NAS Fort Worth JRB Air Power Expo, TX.	10-Apr	-	17-Apr
MCAS Beaufort Air Show, SC.	30-Apr	-	01-May
Centennial of Naval Aviation Week Pensacola, FL.	03-May	-	09-May
New Orleans Navy Week & 'Nawlins Air Show, LA.	05-May	-	11-May
MCAS New River Air Show, NC.	13-May	-	15-May
DoD Joint Services Open House, Andrews AFB, MD.	20-May	-	22-May
New York Fleet Week & Jones Beach Air Show, NY.	22-May	-	02-Jun
Philadelphia Navy Week & Millville AAF Show, PA.	23-May	-	29-May
Rockford AirFest 2011, IL.	04-Jun	-	05-Jun
Evansville Freedom Festival, IN.. . . .	11-Jun	-	12-Jun
Davenport Navy Week & Quad Cities Air Show, IA.	16-Jun	-	22-Jun
Marine Week St. Louis, MO.	20-Jun	-	26-Jun
National Guard Association of Rhode Island Open House & Air Show, RI.	25-Jun	-	26-Jun
Rochester Navy Week & ESL International Airshow, NY.	11-Jul	-	17-Jul
Detroit Navy Week & Thunder over Michigan Airshow, MI.	18-Jul	-	24-Jul
EAA AirVenture Oshkosh, WI.	25-Jul	-	01-Aug
Seattle Fleet Week & SeaFair, WA.	31-Jul	-	08-Aug
Fargo Navy Week and Air Show, ND.	08-Aug	-	14-Aug
The Great State of Maine Air Show, ME.	26-Aug	-	27-Aug
NAS Patuxent River Air Expo '11, MD.	03-Sep	-	04-Sep
Omaha Navy Week & Guardians of Freedom Air Show, NE.	06-Sep	-	11-Sep
National Championship Air Races, Reno Nevada, NV.	14-Sep	-	18-Sep
Memphis AirFest, TN.	17-Sep	-	18-Sep
NAS Oceana Air Show & AIAA Centennial Convention, VA.	20-Sep	-	25-Sep
San Diego Fleet Week & MCAS Miramar Air Show, CA.	19-Sep	-	02-Oct
San Francisco Fleet Week, CA.	08-Oct	-	09-Oct
NAS Lemoore Air Show, CA.	15-Oct	-	16-Oct
El Paso Navy Week & Amigo Air Show, TX.	17-Oct	-	23-Oct
NAS Jacksonville, Birthplace of the Blue Angels Air Show, FL.	05-Nov	-	06-Nov
Pensacola Blue Angels Homecoming, FL.	11-Nov	-	12-Nov
Centennial Closing Gala, Washington DC.	31-Nov	-	01 Dec

Centennial of Naval Aviation

It's a Wrap!



Douglas A4D-1 (BuNo 137814) was the third of 2,960 Skyhawks built. Primarily used as a weapons test aircraft during its active service, 137814 is now a proof-of-concept aircraft for the use of vinyl adhesive “wraps” to ensure that “gate guards” are attractive and presentable. (China Lake Public Affairs)

Capt. Rich Dann

When aircraft reach the end of their useful service lives, a majority are sent to the 309th Aerospace Maintenance and Regeneration Group (AMARG) at Davis-Monthan Air Force Base, the “Boneyard” for disposition and disposal. Some aircraft are distributed to museums and other displays, while others are sent to military bases as “gate guards.” Gate guards, typically mounted to a pylon or set in an air park are at the mercy of local weather conditions, and without proper care over time can begin to look forlorn and faded.

The option of repainting a gate guard can be an expensive proposition. Environmental, monetary and safety concerns can make the effort nearly impossible to coordinate and cost prohibitive to execute.

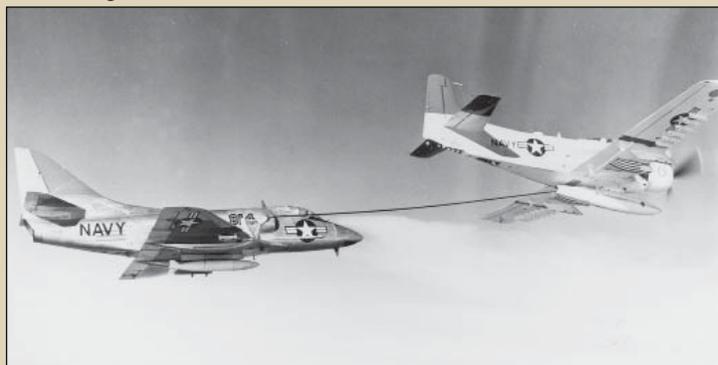
NASCAR and Indianapolis racing teams for the most part have long since stopped painting their racing automobiles. With the many sponsorship logos that are applied to the cars, most race teams have gone to the use of vinyl “wrapping” as a means of decorating their machines. The Navy is now involved in a similar effort using vinyl adhesive wraps.

Naval Air Weapons Station China Lake, a leader in advancing technology in the field of weapons development has recently set a new standard in the maintenance of gate guard aircraft. Since 1969, Douglas A4D-1, (BuNo 137814) has graced the flag circle at the base. While painted in an attractive, but inaccurate scheme, the aircraft was in need of a facelift by the spring of 2011.

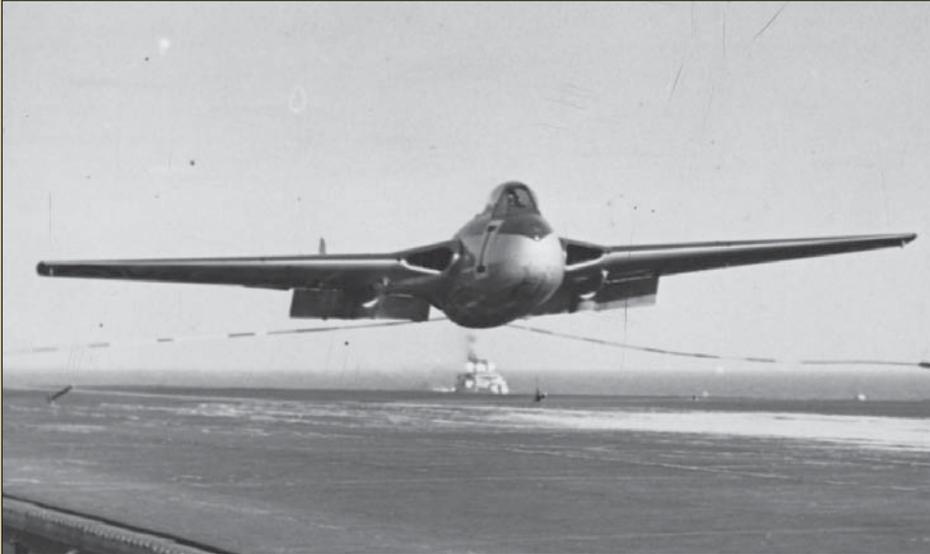
137814 was the third A-4 Skyhawk ever built. Following

some developmental testing the aircraft was assigned to Naval Ordnance Test Station (NOTS) China Lake, where it remained until its retirement in 1963. Some of its duties included in-flight refueling tests.

Mr. Aaron Podell, of AP Studios in Ridgecrest, Calif., was contracted to apply the wrap. Coordinating closely with Cmdr. Ian Anderson, Executive Officer of VX-31 and Capt. Rich Dann at Commander, Naval Air Forces (CNAF), the A4D-1 was first wrapped in the basic aircraft colors. Once complete, all additional markings were added and sealed. With the success of the A4D-1, the next aircraft in line to be wrapped is F-4S (BuNo 157259) at NAS Point Mugu, Calif.



Douglas A4D-1 (BuNo 137814) seen during its test days at China Lake. 137814 was tested with a wing-mounted refueling probe. In-flight refueling was incorporated into A4D-2 and later Skyhawks. (Gary Verver)



Lt. Cmdr. Eric “Winkle” Brown of the Royal Navy’s Fleet Air Arm catches a wire on HMS WARRIOR while testing the “Flex Deck” concept of carrier landing. (NNAM)

Flex Deck Follies

Thomas C. Hone, Norman Friedman, and Mark D. Mandeles

In 1946, the engineers and technicians at the Royal Navy’s Farnborough facility were actively developing and testing their prototype flexdeck, or cushioned carrier landing deck. The flexdeck was actually “an interim measure which, if used with existing jet designs with their undercarriages removed, would teach us a lot and show the way to the solution” of the problem of creating a new type of carrier. That, at least, was the view of Rear Adm. M. S. Slattery, the Royal Navy’s Chief of Naval Research, in April 1945.

After extensive tests of developmental models of flexible landing surfaces, the staff at Farnborough began working on a full-scale system in January 1946. As anticipated, some major problems developed. The “cushion” for the flexible deck was composed of a series of inflated, sausage-shaped flexible cylinders. On top of the cylinders was a flat rubber deck—the “carpet”—along which the landing aircraft was to skid. Tests with modified gliders dropped onto such a surface showed that a method had to be found to keep the weight of the landing aircraft from pushing one inflated cylinder over its neighbors and thereby reducing dramatically the cushion effect.

The real problem confronting the ground crew at Farnborough, however, turned out to be the carpet itself. As one of the engineers observed, “nothing of this magnitude had been attempted before, [and] a great deal of experimental work with the manufacturers [was] necessary before the design could be finalized.” Beginning in March 1947, the engineers and technicians at Farnborough began testing a flexible deck two hundred feet long and sixty wide, complete with its own arresting gear cable. The firstmanned landing was made on 29 December 1947 by the noted RN test pilot Eric Brown, and it nearly cost him

his life. He was fortunate not to be seriously injured or killed.

Tests continued in 1948, and Brown made “forty of these landings in all” at Farnborough. Then the flexible deck was installed aboard carrier HMS WARRIOR, and Brown put a Vampire down on it for the first time on 3 November 1948. After a long string of successful landings, Brown argued in his report of the trials on Warrior “that the principle of flexible deck landing for undercarriageless aircraft is fundamentally sound. . . It may even be that future swept-back and delta plan form aircraft will be forced to adopt this method of landing on carriers, since all calculations point to serious wheeled landing problems on such aircraft.”

Brown was puzzled that other navies did not perceive the utility of the flexdeck. He knew that the U.S. Navy’s Bureau of Aeronautics had watched the progress of the Royal Navy’s work, and he knew that engineers in BuAer were interested in it. What he may not have known about, however, was the opposition to the flexdeck by BuAer’s chief, Rear Adm. Alfred M. Pride. Once Pride left BuAer and became the aviation type commander for West Coast aircraft in May 1951, the engineers in BuAer who thought that the flexdeck might have potential got the green light to develop a version for the U.S. Navy. Though that version was eventually tested, the U.S. Navy never adopted the flexdeck, mostly for the same reasons that the Royal Navy did not make it standard.

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Grumman F9F-7 Cougar (BuNo 130862) upon completion of an arrested landing at NAS Patuxent River on February 1, 1955. The belly of the aircraft was beefed up significantly to absorb landing loads. (NNAM)

Centennial of Naval Aviation

The FJ Fury



Technicians demonstrate the space-saving ability of the FJ-1 Fury to kneel on small twin nose wheels and allow other carrier planes to be moved under its tail. A hatch opens on the nose landing gear door, and the wheel assembly is screwed into a fitting on the nose landing gear strut, which is then retracted into the aircraft by use of a jacking mechanism as seen here. (Photo courtesy of NMNA 1996.253.7235.010)

Ron Lewis, Historian, Flying Leatherneck Historical Foundation

The FJ 'Fury' series of Naval aircraft is little-known and poorly understood, but revolutionized naval aviation, introducing new technologies and techniques that changed both US Navy and Air Force aviation history.

Popular myth has it that the U.S. lagged far behind Britain and Germany in developing jet aircraft, only adopting them after the war. The reality is very different.

February 1940, the Navy approached Prof. H.O. Croft of the University of Iowa about jet propulsion for naval aircraft. In October 1941, the U.S. issued a contract to study the first completely American designed jet engine, the Westinghouse 19A. By 1943, the Navy selected McDonnell Aircraft Corp. to develop the XFD-1 Phantom (later known as the FH-1) because McDonnell was the only company not engaged in building other aircraft critical to the Navy. This strategy minimized the risk of failure with unproven jet designs.

By mid-1944, the Allies had witnessed attacks by the German Me 262 jet fighter and Navy officials feared that the Japanese would obtain the technology. Such an aircraft would be virtually unstoppable in kamikaze attacks on Allied ships during the planned invasion of mainland Japan. Now, instead of worrying about a failed design eating up resources, the Navy feared having no other options. Two more contracts were issued, one to North American, for the XFJ-1 'Fury', and another to Vought for the

XF6U-1 "Pirate".

The Navy had cautiously dabbled with hybrid jet/piston concepts like the Ryan FR-1 Fireball but now began to push ahead in earnest with pure jets. Orders for 100 each of the different jet designs were placed in anticipation of the coming final battle in Japan. Fortunately, the war ended just as Japan was beginning to test the first of its feared jets.

The XFD-1 Phantom was first to launch from a U.S. carrier but the first carrier operations with a fully operational jet squadron was on 10 March 1948, with two FJ-1 Fury aircraft of VF-5A aboard USS BOXER. The XFJ-1 Fury adopted the straight wings, tail and bubble canopy of North American's P-51 Mustang, and had wing dive brakes from the A-36 Apache. It would be the last Navy fighter equipped with .50 cal machine guns. Only 30 FJ-1s were built and were seen as only marginally suitable for carrier use, but they did prove the concept of jet operations on carriers and showed that jets needed to be catapulted due to their low relative thrust upon take-off. The Army Air Forces showed an interest in the XFJ-1 but wanted the swept wings that had been theorized by U.S. scientists and proven by the Germans. The Fury evolved into the legendary swept-wing F-86 Sabre but the Navy resisted swept wings due to fears of instability, until the Korean War proved the need and the FJ-2 Fury, along with the F9F-6 Cougar would become the first swept-wing Navy aircraft. Ultimately, slightly more than 11,000 Fury/Sabres would be produced, and it all started with one tubby little Navy jet.



Yehudi Lights



This Grumman TBM-3D Avenger is fitted with “Yehudi” lights in the leading edges of the wings and cowling. It was determined that adjusting these lights to ambient conditions allowed for significantly reduced visual detection ranges against hostile submarines. (Mark Aldrich)

Capt. Rich Dann

“Camouflage - the act, means, or result of obscuring things to deceive an enemy, as by painting or screening objects so that they are lost to view in the background, or by making up objects that have from a distance the appearance of fortifications, guns, roads, etc.” - www.dictionary.com

The art of concealing an aircraft via “camouflage” has been around since the beginnings of military aviation. In fact, even before World War I, the U.S. Navy experimented with various camouflage schemes. During the Great War, the necessity of concealment was reinforced, and to this day, military aircraft are painted with patterns that help to keep them from being seen.

There was a very little-known effort during the 1930s and 1940s that actually saw the use of “active camouflage.” In 1936, the prototype Grumman XFF-1 (BuNo 8788) was fitted with lights as an active camouflage method. Known as “Yehudi”, results of these tests were disappointing since there was no method to adjust light intensity.

During World War II, the idea of active camouflage was revived by both the Army and the Navy. By this time, technology had caught up to the concept. Army Project AC-45 involved the installation of lights in the leading edges of the wing of a U.S. Army Air Force B-24D Liberator.

Project NA-188 was a similar effort to AC-45, but involved the use of a Navy TBM-3D torpedo bomber.

In the 234-page research paper, “*Visibility Studies and Some Applications in the field of Camouflage. Volume 2*” published by the National Defense Research Committee in 1946, results of these tests appeared to be rather promising. While detection ranges of uncamouflaged aircraft were as far as 12 miles, Yehudi lights, adjusted for illumination to match ambient lighting conditions allowed aircraft to approach the target ship to within 3,000 yards

before being detected. A final Navy experiment with the Pratt-Read LBE “Glomb” glide bomb aircraft to be fitted with Yehudi lights was terminated when the war ended and the contract for the LBE was cancelled after only four aircraft were built.

Counter-illumination was tested again in 1973, using a U.S. Air Force F-4C Phantom II with lights, under the name COMPASS GHOST, apparently with some success.

The idea reappeared in the 90s with tests of an F-15 fitted with fluorescent panels. According to one report, “*the fighter virtually disappeared as it lifted off the runway.*” Most recently, tests were conducted using a drone at the University of Kansas. In an article in FlightGlobal on-line magazine, “*Electroluminescence is Key to Invisibility.*” Researchers from the University of Kansas outfitted a small drone “with an electroluminescent surface” — a material that lights up in response to a current. Then they took a pair of pictures, with the drone at 1,000 ft., with and without power on the electroluminescent surfaces. “*...The visual signature suppression is relatively spectacular.*” Stated associate professor Ron Barrett.



The U.S. Air Force revived research into active camouflage towards the end of the Vietnam War. This F-4C (63-7407) was equipped with “Yehudi” type lights. (Jack Morris)

From Past ...



... To Present



Photographed while participating in the Navy's annual "Legacy Flight" refresher training, the Commemorative Air Force's Curtiss SB2C-5 Helldiver flies wing on F/A-18C BuNo 163733 of VFA-122. Both aircraft are painted in the three-tone camouflage scheme adopted by the U.S. Navy in late 1943. (Tyson Rininger)