FRCSW Almanac

Naval Aviation Centennial Commemorative Issue

Skipper's Corner:
100 Years of Naval Aviation

Capt. Fred Melnick

I am pleased to share with you this special issue of the Almanac. In it, we are celebrating the 100th anniversary of naval aviation and the roles Fleet Readiness Center Southwest (FRCSW) and Naval Air Station North Island have, and continue, to play.

From Glenn H. Curtiss' historic hydroaeroplane flight which took place on the Air Station on January 26, 1911, to former naval aviator Neil Armstrong's first steps on the moon July 21, 1969, ours is truly a history of innovators and innovation.

In less than four months after Curtiss' flight, Captain Washington Irving Chambers ordered the Navy's first airplane, a biplane designed by Curtiss, called the A-1 *Triad*. The eight-cylinder aircraft cost the Navy $4,400.

Also during 1911, the Navy's first aviator, Lieutenant T. G. Ellyson trained at North Island, forever immortalizing the Air Station as the official "Birthplace of Naval Aviation."

On July 15, 1919, the foundation of what was to become FRCSW was set with the designation of an Assembly and Repair Department.

In March 1922, the Navy's first aircraft carrier USS *Langley* was commissioned in Norfolk, Va. On October 17, 1922, the first takeoff from the carrier was made, followed by the first landing nine days later.

Eventually, *Langley* was assigned to North Island.

Today, North Island is the homeport to two supercarriers, with FRCSW providing much of the repair, maintenance and overhaul to the aircraft they deploy.

During the past 100 years, the evolution of naval aircraft from wood and linen, then metal, to the advanced composites used today, is not only indicative of the unrelenting ingenuity of those who preceded us, but also serves to remind us that the technological innovations of naval aviation are a vital key to our national defense now, and well into the future.

FRED MELNICK
Captain, U.S. Navy
Commanding Officer

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FRCSW Mission, Vision & Values

Mission
Deliver responsive maintenance, repair and overhaul products and services in support of Fleet readiness and National Defense objectives.

Vision
Be the preferred provider of innovative aviation maintenance solutions, committed to customers, partners, workforce, and community.

Values
Integrity (honesty, accountability, personal responsibility), teamwork (open communications, transparency, information sharing), mutual respect, and workplace diversity.

FRCSW ALMANAC
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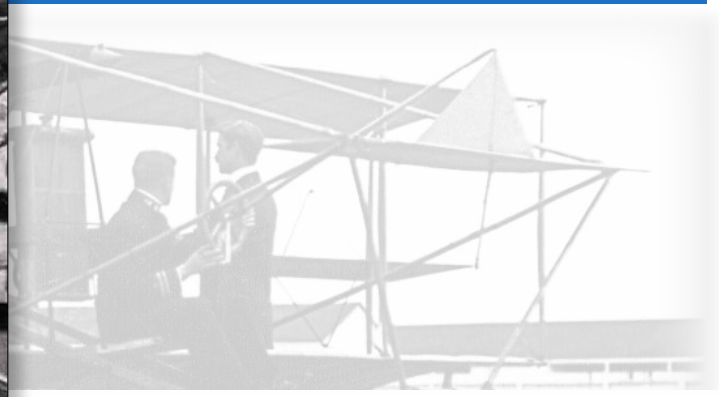
Dedication

To the men and women of the United States Navy and Marine Corps who have served their country in pursuit of excellence during their duties in Naval Aviation and to all the teammates past and present that have strived to ensure the safety and well-being of aviators while working to maintain, repair and overhaul the aircraft, components and equipment necessary to help the Warfighters complete their mission.

Glenn Curtiss (center) and members of the first military aviation school at North Island in 1911. Left to Right: Lieutenant Theodore G. Ellyson, who became Naval Aviator #1; First Lieutenant Paul W. Beck, Second Lieutenant G.E.M. Kelly, and Second Lieutenant John C. Walker, Jr., U.S. Army.



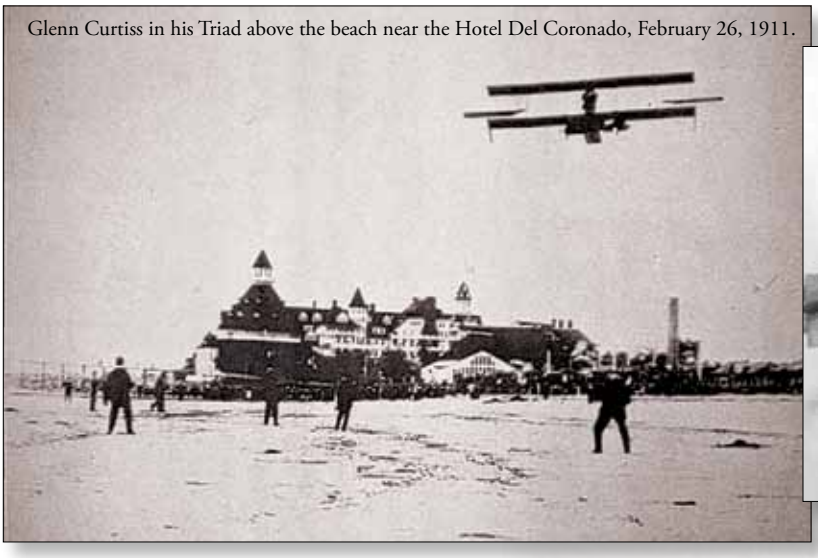
Glenn Curtiss (standing at front of airplane) instructing Lt. Ellyson (seated at controls) at the Coronado Polo Grounds during the San Diego Aero Club meet, January 29, 1911.

Lt. Ellyson in the "Grass Cutter" 4-cylinder aircraft that Curtiss initially used for training pilots.

Note: *All photos are U.S. Navy photographs. Every effort has been made to correctly identify people and aircraft in the photographs, however omissions or errors may occur. Attribution to photographers has been made where information is available.*

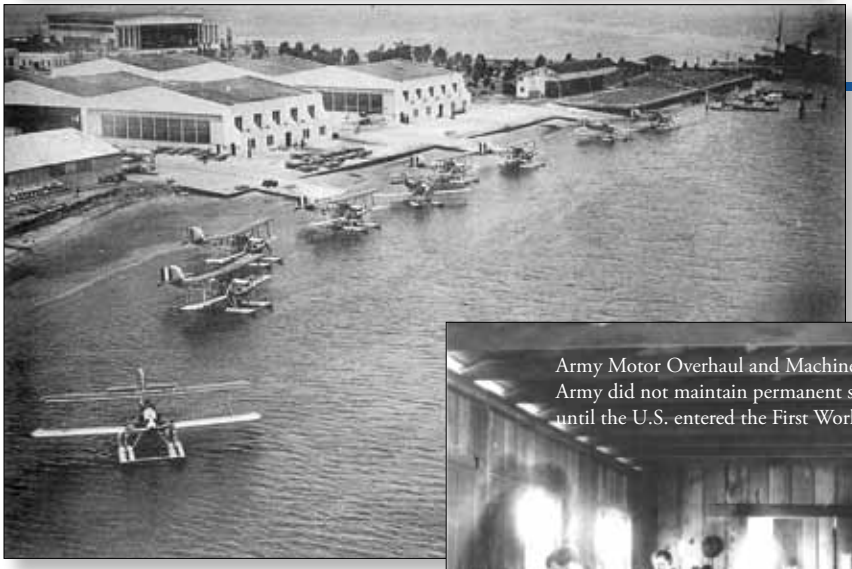
Cover photo illustration by Chuck Arnold.

1910 – 1920s

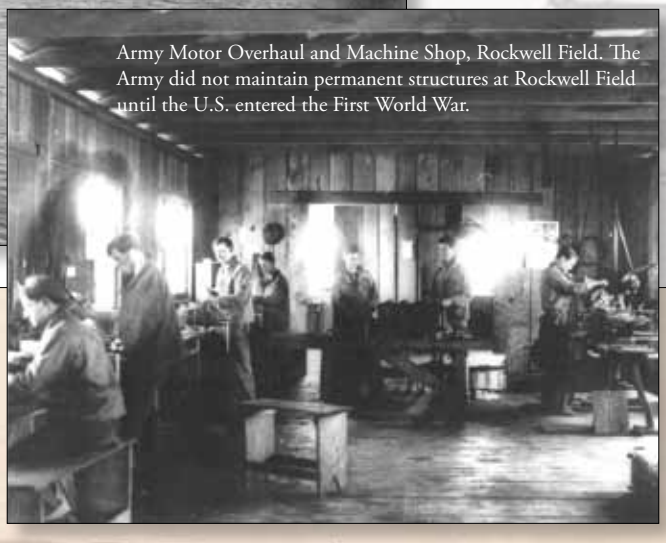


Glenn Curtiss in his Triad above the beach near the Hotel Del Coronado, February 26, 1911.

Glenn Curtiss experimenting in Spanish Bight with the "hydroaeroplane", 1911.



May 1926. Martin SC-2 aircraft at the seaplane ramps. Buildings directly behind are Hangars One and Two, which are still in use today.



Army Motor Overhaul and Machine Shop, Rockwell Field. The Army did not maintain permanent structures at Rockwell Field until the U.S. entered the First World War.

The airship USS *Shenandoah* (ZR-1) moored at North Island; October 1924.

Curtiss TS-2 seaplanes over North Island. USS *Langley* (CV 1), the Navy's first aircraft carrier, can be seen bottom center. Circa 1926.

Boeing F2B-1 aircraft. These planes formed the first Navy flight exhibition team, the "Three Sea Hawks" in 1928.

Douglas DT-2 launching from the deck of the USS *Langley* (CV 1) while moored at the pier at North Island.

Curtiss Model F and Burgis U-2 seaplanes on the beach to San Diego Bay, 1918.

1930s

Consolidated XPBY-1 *Catalina* seaplane flying over North Island (above aircraft) and Lindberg Field (below aircraft nose), 1936.

Boeing F3B-1 Fighter Bomber used by the Navy during the late 1920s and early 1930s. Many were converted to command and staff transport planes after 1932.

Marine Fighting Squadron 10 stands inspection on North Island, 1933.

The second aircraft in the front row, a Boeing F4B-4, (Fuselage 10 - 02), Tail Number 9241 was shipped from the Boeing factory in Seattle on December 20, 1932, arriving nine days later at the North Island Air Station in San Diego, California. This F4B-4 was assigned as the number two aircraft in Marine Fighting Squadron 10, and served there until July 1933. This aircraft is currently on display in the Smithsonian National Air and Space Museum in Washington, DC.

Other aircraft in this photo include two Curtiss N2C-2 trainers, a Ford *Trimotor*, Curtiss OC2 *Helldiver* dive bombers, and Vought SU-2 scout and observation planes, along with the Boeing F4B-4 fighters.

Aerial view of North Island, August 1933. The large circular area known as Rockwell Army Airfield can be seen in the upper left of the island, with the Navy's first aircraft carrier, USS *Langley* (CV 1) docked at the pier at the lower right of the photo.

A rare color photograph of Vought SB2U and Northrop BT-1 dive bombers on the ramp at North Island around 1938. The famous tower (Building 8), can be seen at the right edge of the photo.

The USS *Ranger* (CV 4), the first Navy ship designed from the keel up as an aircraft carrier, docked at North Island pier. Alongside and flying above her are Consolidated P2Y seaplanes.

Anchored in San Diego Bay is the USS *Langley* (AV 3), formerly the Navy's first aircraft carrier, which was converted to a seaplane tender in 1936.

1940s

USS *Yorktown* (CV 5) loading aircraft at the North Island pier, March 1940.

Aircraft maintenance inside the hangar of Building 94 during the early 1940s.

F4U-4 *Corsair* and Curtiss SB2C *Helldiver* aircraft on the final test area ramp, late 1940s.

Preparing a Vought F4U-4 *Corsair* for storage,

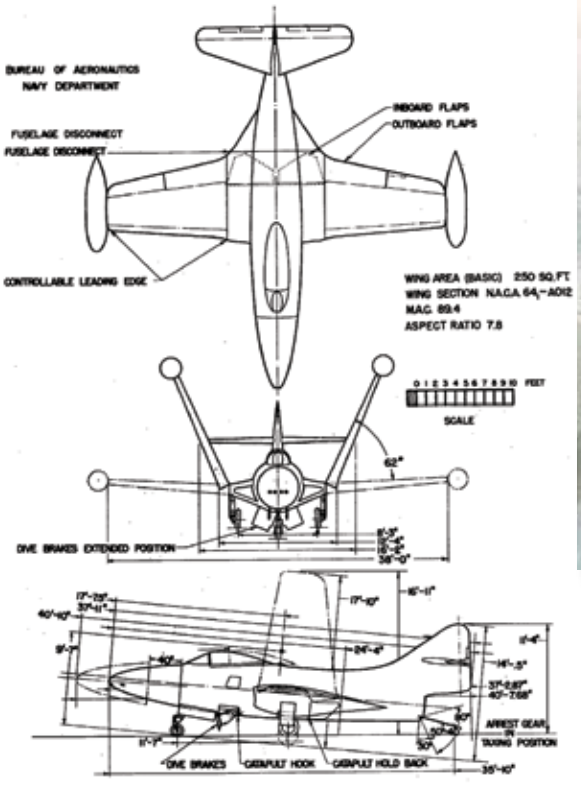
V-J day, NAS North Island, August 14, 1945.

During World War II, the Assembly and Repair department (precursor to Fleet Readiness Center Southwest) repaired, modified or otherwise prepared 22,577 aircraft for combat, and overhauled 3,043 planes.

Between December 17, 1941 and September 2, 1945, 27,273 civil service employees were hired for North Island, many in the Assembly and Repair department.

1950s

AD *Skyraider*s of Navy Composite Squadron 35 (VC-35) fly over Coronado, 1953.



F9F *Panther*, one of the first Navy carrier-based jet aircraft. F9Fs were the first carrier jets to fly in combat (July 1950, shooting down two North Korean YAK-9 aircraft), and the first carrier jet to shoot down a jet powered opponent; a MiG-15, in November 1950.

USS *Essex* (CVS 9) leaving San Diego harbor, probably around 1957, just after her modernization which added the angled flight deck and hurricane bow to the World War II veteran ship.

On the flight deck are AD *Skyraider* and F9F *Panther* aircraft, as well as an F4U *Corsair* fuselage which was likely used for fire-fighting and pilot rescue practice.

Douglas F3D (later F-10) *Skyknight*, Lockheed TV-2 (later T-33B) *Shooting Star* and McDonnell F2H (later F-2D) *Banshee* aircraft undergoing repair in Building 94 hangar, 1954.

1960s

Grumman S-2E *Trackers* of Sea Control Squadron 38 (VS-38) "Fighting Red Griffins" over Point Loma, with NAS North Island in the background.

Aeronautical Engineering Drafting Section of Naval Air Rework Facility (NARF) in the 1960s.

Aerial photo showing Building 94 and seaplane ramps and Hangar Two in the foreground; Building 17 (Dirigible Hangar) can be seen in the center of the photo, which was built in 1919, and demolished in 1971.

The 1961 cruise book of the aircraft carrier USS *Kitty Hawk* (CV 63) shows an aerial photo of the crew spelling out "KH + SD = PARTNERS" on the ship's flight deck before arriving in its new homeport on Nov. 1, 1961.

Kitty Hawk would spent 25 years in San Diego, Calif., only leaving for major shipyard periods, and 10 years operating from Commander Fleet Activities Yokosuka, Japan. Kitty Hawk arrived back in her traditional home Aug. 7, 2008, on her way to decommissioning in Bremerton, Wash., in early 2009.

The final F-4D (later designated F-6A) *Skyray* reworked at NARF North Island in 1962. This particular aircraft (BuNo 139177) is currently on display at the Flying Leatherneck Museum at MCAS Miramar.

Vought F-8 *Crusader* aircraft over NAS North Island and Coronado. Rework of these jets and the F-4 *Phantom II* became a staple workload of NARF during the 60s and 70s.

1970s

McDonnell F-4J *Phantom II* in US Bicentennial-themed paint; 1976. NARF North Island painted this special paint scheme for U.S. Navy Air Test and Evaluation Squadron Four (VX-4) "Evaluators".

An NARF artisan processing engine parts for a J79 engine used in the F-4 *Phantom II* aircraft during the 1970s.

F-4 *Phantom II* aircraft being reworked in Building 94 during the 1970s. The first F-4 was reworked by the NARF in 1962; the last F-4 left the NARF in 1985.

F-4N *Phantom II* over NAS North Island in the 1970s. The logo on the tail surface is from the "Bee Line" which updated F-4B aircraft into F-4Ns, with modified engines and other updates under a Service Life Extension Program.

F-4 *Phantom II* aircraft on the NARF test line. The yellow colored aircraft were undergoing testing prior to receiving their final paint scheme.

1980s

Boeing-Vertol CH-46E *Sea Knight* helicopter in final assembly phase.

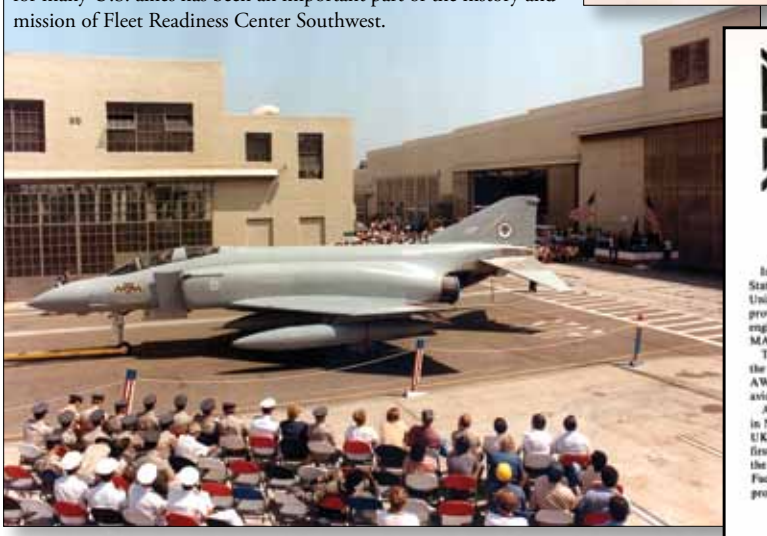
Grumman E-2A *Hawkeye* early-warning aircraft, in final assembly on the tarmac in front of Building 460.

McDonnell Douglas F/A-18 *Hornet* multi-role fighter/ attack aircraft, first flown in 1978.

Grumman F-14 *Tomcat* undergoing rework in Building 94. The F-14 served as the Navy's air superiority fighter for many years, eventually supplanted by the F/A-18 *Hornet*.

The UK F-4J during its test flight.

F-4J *Phantom II* roll-out ceremony for the United Kingdom, August 10, 1984 in front of Building 94. Rework and repair of aircraft for many U.S. allies has been an important part of the history and mission of Fleet Readiness Center Southwest.



F-4J AIRCRAFT FOR THE UNITED KINGDOM

In March 1983, the United Kingdom (UK) accepted a United States Government letter of offer for 15 F-4J aircraft from the United States Navy. In addition to the 15 airframes, the offer provided for modification kits, the Rework/MOD of airframes and engines and the withdrawal from storage of 10 aircraft located at MASDC, Davis Monthan Air Force Base, Arizona.

The basic airframe configuration consists of complete rewire of the aircraft, structural improvements, J79 low smoke engines, AWG-10B upgraded radar, new UHF radio and TACAN, updated avionic systems, and provisions for Skyflash Missiles.

Aircraft inductions at the Naval Air Rework Facility commenced in November 1983 under an extremely ambitious schedule to meet UK commitments. Today we witness the roll-out, on schedule, of the first F-4J (UK). But it is not just the completion of another F-4, it is the culmination of dedicated effort by the entire Naval Air Rework Facility team and displays our determination to produce a quality product on schedule in meeting the obligations of our country.

PROGRAM

Project Background
MR. R. L. DUNCAN, JR.
PRODUCTION PLANNING AND INVENTORY CONTROL DEPARTMENT HEAD

Master of Ceremony
Remarks and Introduction of Guest Speakers
CAPTAIN P. A. MONROE
COMMANDING OFFICER

Guest Speakers

DR. J. E. GREEN
MINISTER COUNSELLOR DEFENSE EQUIPMENT
BRITISH EMBASSY

AIR COMMODORE L. SWART
CBE AFC RAF, AIR ATTACHE, BRITISH EMBASSY

Transfer of Aircraft Log Book
CAPTAIN P. A. MONROE
AND
DR. J. E. GREEN
AIR COMMODORE L. SWART

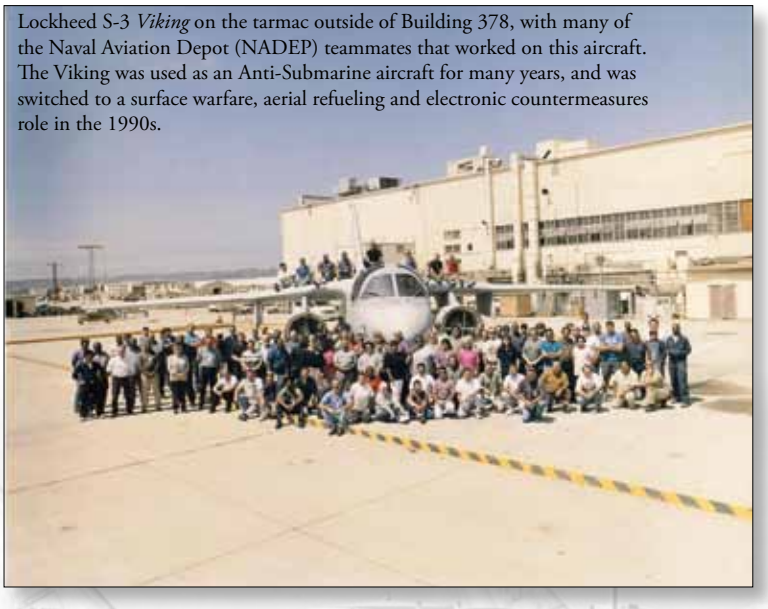
Ribbon Cutting Ceremony
and Acknowledgements
CAPTAIN P. A. MONROE
MR. R. L. DUNCAN, JR.
DR. J. E. GREEN

An artisan works in the nose of a CH-46 undergoing depot-level rework.

The H-46 Survivability, Reliability and Maintainability (SR&M) program removed and replaced much of the wiring and hydraulic tubing, repaired and reinforced many of the structural components and updated the avionics in the Vietnam-era helicopters, extending the lifespan of the aircraft well into the 21st Century.

Consolidated PBY-5A *Catalina* seaplane repainted in celebration of the 75th Anniversary of Naval Aviation, for the San Diego Aerospace Museum in 1986. This aircraft is now on display at the museum in Balboa Park.

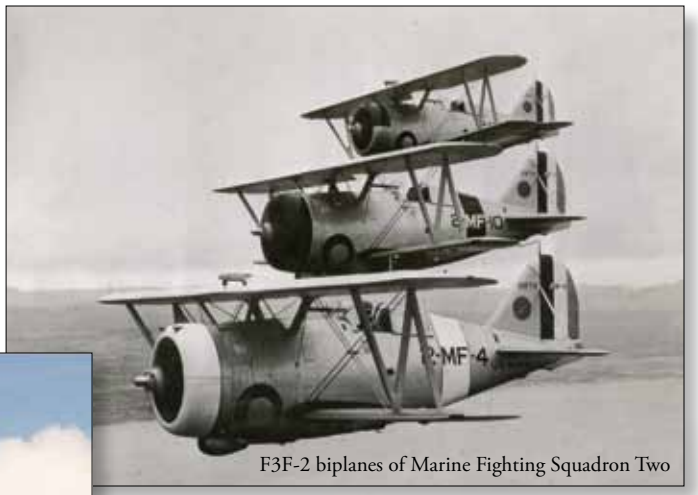
1990s



Lockheed S-3 *Viking* on the tarmac outside of Building 378, with many of the Naval Aviation Depot (NADEP) teammates that worked on this aircraft. The Viking was used as an Anti-Submarine aircraft for many years, and was switched to a surface warfare, aerial refueling and electronic countermeasures role in the 1990s.

F/A-18A *Hornet* over the Silver Strand and Coronado Bridge. The F/A-18 became a common sight at North Island during the 1990s.

S-3 *Viking* and F/A-18 *Hornet* aircraft on the Naval Air Depot Test Line during the 1990s.



F3F-2 biplanes of Marine Fighting Squadron Two

The F3F-2 being loaded aboard a flat-bed truck for transport to the Naval Aviation Depot for cleaning and preservation. The aircraft was recovered after nearly 50 years on the ocean floor in 1990.

On August 29, 1940, Lt. Robert E. Galer of Marine Fighting Squadron Two, Second Marine Aircraft Group crash landed his Grumman F3F-2 off the coast of Del Mar while trying to land aboard the USS *Saratoga* (CV 3), due to the faulty installation of a fuel selector valve.

On April 4, 1990, the aircraft was salvaged from a depth of 1,900 feet, and brought to Naval Aviation Depot to assist in cleaning and preservation of the aircraft in preparation for restoration. This aircraft had been at the depot nearly 51 years before undergoing overhaul.

Galer served during World War II and earned a Medal of Honor for his role in the Battle of Guadalcanal, as well as during the Korean War, eventually retiring from the Marine Corps as a Brigadier General. Galer was present at North Island when the aircraft was returned to shore in 1990.

The F3F-2 was restored by the San Diego Aerospace Museum, and is currently on display in the National Naval Aviation Museum in Pensacola, Fla.

Grumman F-14 *Tomcat* aircraft on the NADEP Test Line during the 1990s.

The Boeing F/A-18E *Super Hornet* was selected in 1994 to gradually replace the F-14 in the role of a Fleet defense and carrier-based strike aircraft.

2000s

AD2 Bradley Bryson (standing) and AD2 Journald Camiling prepare a T700-401C engine for shipping. The T700-401C turbine engine is used on the H-60 *Seahawk*, UH-1 *Super Huey* and AH-1 *Super Cobra* helicopters. *Photo by Joe Feliciano*

Northrop Grumman E-2C *Hawkeye* Airborne Early Warning aircraft undergoing rework on the tarmac in front of Building 460.
Photo by Joe Feliciano

Sheet metal mechanic Jeff Riley removes the inner seal inside the engine intake of an F/A-18 center barrel.

The Center Barrel Plus program has extended the usable life of F/A-18 A through D model aircraft by replacing the center fuselage "barrel" section that serves as the main connection point for the wings, main landing gear and front and back fuselage sections.
Photo by Jim Markle

Electronic integrated system mechanic William Ly prepares to test a circuit card using a Consolidated Automated Support System (CASS) test equipment. *Photo by Joe Feliciano*

Aircraft mechanic Andy Sarsoza installs an antenna in the nose of an H-60 *Seahawk* helicopter. *Photo by Joe Feliciano*

Boeing F/A-18 *Hornet* aircraft undergoing rework in the hangar area of Building 94.
Photo by Scott Janes

Grumman F-14D *Tomcat* aircraft. The Tomcat was replaced by the F/A-18E and F *Super Hornet* aircraft in 2006.

E-2C *Hawkeye* Airborne Early Warning aircraft

Sikorsky H-60 *Seahawk* series helicopter.

Sikorsky H-53 *Super Stallion* helicopter.

Some of the Aircraft Serviced by Fleet Readiness Center Southwest in the first decade of the 21st Century

AH-1W *Super Cobra* attack helicopter

UH-1Y *Super Huey* (also known as the *Venom*) helicopter. The UH-1 and AH-1 are Marine Corps aircraft reworked at Camp Pendleton by an FRCSW detachment.

Boeing AV-8B *Harrier II* Vertical /Short Take-Off and Landing ground attack aircraft, reworked by FRCSW at MCAS Yuma.

Northrop Grumman C-2A *Greyhound* Carrier Onboard Delivery aircraft.

The 30th Anniversary of the first flight of the F/A-18 *Hornet* was commemorated in 2008 by a recreation of the paint scheme on the very first F/A-18 (see photo, page 16) flown in 1978.

The F/A-18 Legacy (A through D model) and F/A-18 *Super Hornet* (E and F model) variants are a large part of the aircraft repaired at FRCSW. *Photo by Lt. Alex Alwein*

Centennial of Naval Aviation Kick-Off Celebration

February 12, 2011

By Chuck Arnold

On a sunny Saturday afternoon in February, NAS North Island played host to an estimated 70,000 visitors for the kick-off celebration for the Centennial of Naval Aviation. The Navy's demonstration squadron, the Blue Angels, led the "Parade of Flight" which included many of the aircraft that had served the Navy during the past 100 years. Prominently displayed was an operational replica from the San Diego Aerospace Museum of the Curtiss A-1 *Triad* hydroaeroplane that Glenn Curtiss and Lt. Theodore G. Ellyson first flew from San Diego Bay in 1911.

From the Bell-Boeing V-22 *Osprey* tilt-rotor aircraft, Boeing F/A-18 *Super Hornet* fighter, and Northrop Grumman MQ-8 *Fire Scout*, X-47B Unmanned Combat Air System (UCAS) and RQ-4 *Global Hawk* unmanned air vehicles (UAVs), to the HU-16 *Albatross* seaplane, TBM *Avenger* torpedo bomber and F4U *Corsair* fighter from bygone days, nearly every era of Naval Aviation was represented in static or flying displays.

Fleet Readiness Center Southwest (FRCSW) and the NAVAIR In-Service Support Center (ISSC) were well represented at an interactive display, as well as FRCSW's involvement with "retro" paint schemes on numerous H-60 helicopters and F/A-18 aircraft which harkened back to the Naval aircraft paint styles of the 1940s and 50s. FRCSW has a legacy nearly as old as Naval Aviation itself; FRCSW can trace its history back to 1919 and the first Assembly and Repair Department on North Island.

The aircraft carrier USS *John C. Stennis* (CVN 74) was docked at nearly the same spot that the first carrier, USS *Langley* (CV 1) had tied up many years before in the early days of carrier-based aircraft, while Carrier Air Wing Nine flew a formation over North Island in honor of Naval aviators past and present.

F/A-18 *Hornet* in "retro" colors from World War II. *Photo by Joe Feliciano*

A visitor to the FRCSW booth tries to land a toy airplane on a simulated carrier deck. *Photo by Scott Janes*

The Blue Angels F/A-18 *Hornets* lead off the "Parade of Flight." *Photo by Scott Janes*

HU-16 *Albatross* seaplane on display. The HU-16 was first flown in 1949. *Photo by Joe Feliciano*

The Curtiss A-1 *Triad* flyable replica from the San Diego Aerospace Museum taxies on San Diego Bay. *Photo by Scott Janes*

TBM *Avenger* torpedo bomber was used during World War II. *Photo by Joe Feliciano*

MQ-1 *Fire Scout* UAV is an unmanned vertical lift vehicle designed for armed reconnaissance. *Photo by Joe Feliciano*

V-22 *Osprey* tilt-rotor aircraft flies above San Diego Bay. *Photo by Daniel J. Hernandez*

F/A-18 *Super Hornets* participating in the Parade of Flight. *Photo by Daniel J. Hernandez*

FRCSW would like to thank the following teammates for their key roles in the production and delivery of the ¾ scale Curtiss Triad A-1 model featured at the 100th Anniversary Parade of Flight and North Island Open House on February 12, 2011 in commemoration of the Centennial of Naval Aviation:

Electroplater: Brett Anacker, Rolando Durano

Graphic Designer: Jason Feather

Industrial Planning: George Fernandez

Layout Specialist: Isaac Llamas

Machinist: Anthony Delgadillo, Alexander Fernandes, Charles Scott

Mechanical Engineer: Alex Lipovic

Metal Finisher/Painter Leader: Joseph Bailey

Metal Finishing/Painter: James Helpingstine

Model Maker (Sheet and Plate): Corregidor Games, Ambrosio Garcia, Charles Gipson, Danny Hammersten, Richard Hughes, Camerino Machado, Rolland Makinano, Timothy Maloney, Mark Yarrow

Facilities Project Manager: William Mah

Sheet Metal Mechanic: Darrin Clark, Henry Galvan

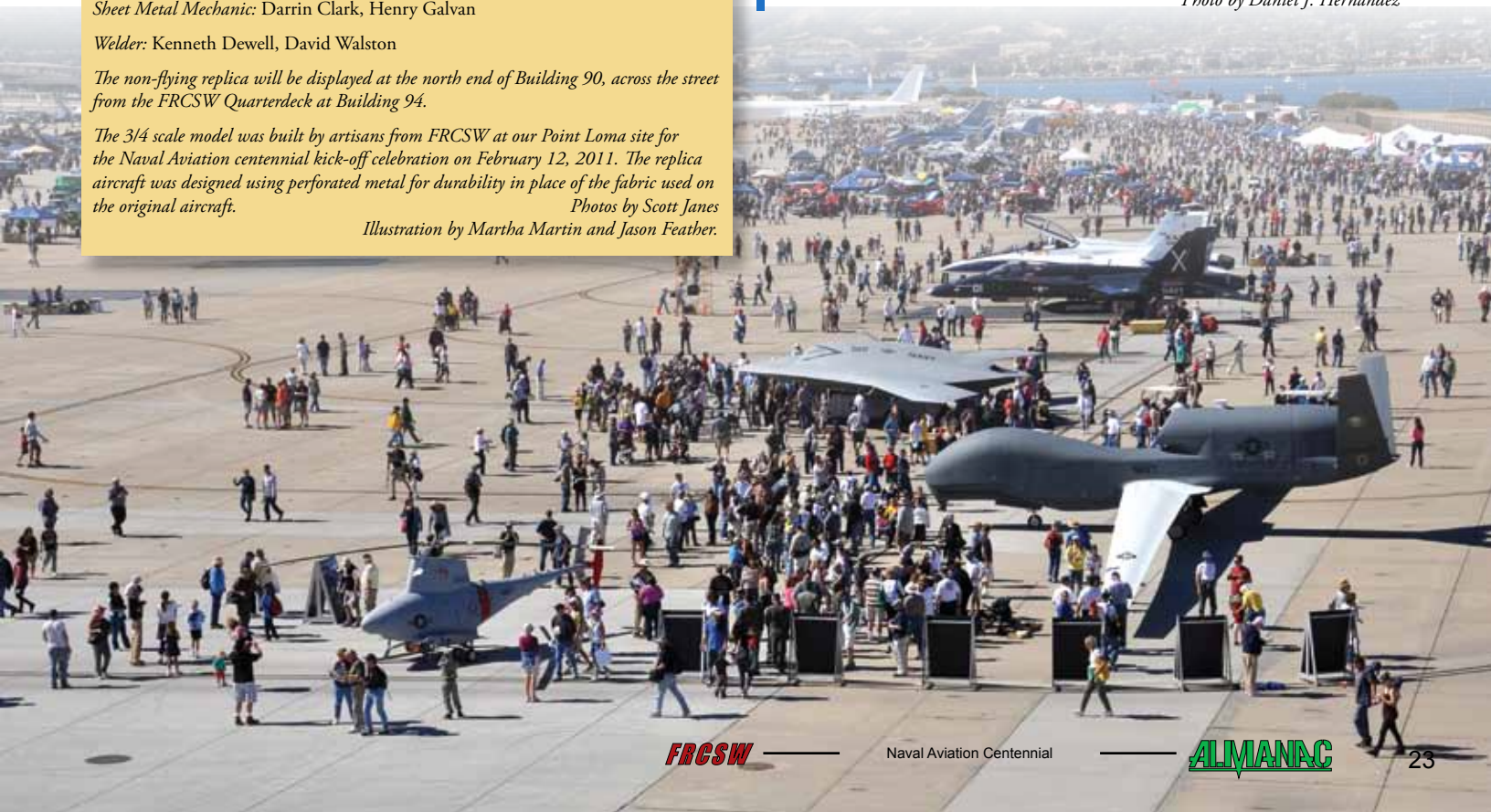
Welder: Kenneth Dewell, David Walston

The non-flying replica will be displayed at the north end of Building 90, across the street from the FRCSW Quarterdeck at Building 94.

The 3/4 scale model was built by artisans from FRCSW at our Point Loma site for the Naval Aviation centennial kick-off celebration on February 12, 2011. The replica aircraft was designed using perforated metal for durability in place of the fabric used on the original aircraft. *Photos by Scott Janes*
Illustration by Martha Martin and Jason Feather.

C-2A *Greyhound* cargo aircraft fly in formation during the centennial celebration.
Photo by Mike Furlano

A KC-130 *Hercules* simulates aerial refueling of two H-53 *Super Stallion* helicopters.
Photo by Daniel J. Hernandez



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