



Missions for
America
Semper vigilans!
Semper volans!

The Coastwatcher

Official Publication of the Thames River
Composite Squadron
Connecticut Wing
Civil Air Patrol
300 Tower Rd., Groton, CT
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Issue 11.22

13 June, 2017

CALENDAR

See the Squadron Calendar for Meeting Details

17 JUN-Commander's Cup Rocket Contest
19 JUN-01 JUL NER ES Training
20 JUN-ES Training
 Cadet Aerospace or Emergency Serv.
27 JUN-ES Training
 Cadet Aerospace or Emergency Serv.
25 JUN-WAA Pancake Breakfast
01 JUL-CTWG SAREX
23 JUL-FAA Av. Career Ed. Academy
24 JUN-TRCS SAREX
14-20 AUG-CTWG Encampment
19 AUG-National Aviation Day

09 SEP-CTWG Smallbore Rifle Clinic
23 SEP-WAA Young Eagles
06-07 OCT-AOPA GON Fly-in
21 OCT-CTWG Smallbore Rifle Clinic

CADET MEETING

13 June, 2017

Lt Drost led a character development session.

A promotion and awards ceremony was conducted.

The Cadets packed their rockets and gear for the Commander's Cup Rocketry Contest on Saturday.

SENIOR MEETING

13 June, 2017

Lt Pineau delivered a safety briefing.

Lt Col Doucette commented on the status of the operations plan for the Long Island Sound Patrol.

Maj Farley briefed the Squadron on the highlights of the Pilots' Meeting.

ACHIEVEMENTS

Cadet Colin Hallahan was promoted to Airman First Class.



Maj Farley and Lt Drost attach C/AIC stripes to Cadet Hallahan's collar.

Cadet John Pineau was promoted to Cadet Staff Sergeant.

Mrs Pineau and Lt Pineau present sergeant stripes to their son.



C/Maj Daniel Hollingsworth, a Distinguished Expert Rifleman, presented marksmanship awards to the Ramsey trio.

C/SMSGt Benjamin Ramsey and C/CMSGt Hannah Ramsey were awarded certificates certifying that they have qualified as Sharpshooters Bar 3 with the smallbore rifle.



C/MSgt Daniel Ramsey received a certificate and medal emblematic of the Sharpshooter level in the Winchester-NRA smallbore course of fire.



C/AIC Hayden Kirkpatrick made two presentations about CAP activities to students at the Carl. C. Cutler Middle School in Groton.

PILOTS' MEETING



Lt Col John deAndrade, CTWG Director of Operations, chaired the CTWG pilots' meeting which was hosted by Thames River Composite Squadron on Saturday, June 10th.

A number of critical issues were discussed: LISP protocols, aircraft deployment to hubs, and the quality of Form 5 and Form 91 check-rides.

Capt Raymond Laramie, CTWG Standards and Evaluation Officer, played a CAP video illustrating the difference between a good check-ride and a poorly planned one.

Lt Col deAndrade has posted a letter which outlines his command philosophy and requirements regarding aircraft records. To avoid a blizzard of e-mails, all operational orders will be consolidated in one document which will be available electronically.

Selected squadrons will serve as hubs and be assigned "ownership" of an aircraft and will be expected to handle scheduling and aircraft reports. Each squadron will have a Flight Release Officer appointed and will schedule monthly pilot safety meetings.

The hubs will be within a hours drive of any squadron location and are Waterbury-Oxford, Hartford Brainard, Groton-New London, and Meriden-Markham.

The financial accountability of members and the time limits for submission of reports for missions and fuel usage were explained.

Lt Col Richard Doucette will be the point of

contact for Long Island Sound Patrol missions. An operational plan is under development and the hub system will be used for aircraft and crew scheduling.

AEROSPACE HISTORY

The A-4 Alphabet

Part I-The US Navy and Marine Skyhawks

Several weeks ago, the Cadets of the Thames River Composite Squadron partook of an aerospace education field trip to the New England Air Museum. The visit was pre-planned and museum docents had been contacted to make presentations about specific aircraft with which they had special knowledge. One docent, Dr. Roger Van Dyke is a retired Navy commander and had flown the carrier based Douglas A-4 Skyhawk in combat. Dr. Van Dyke made no secret that he was a partisan of this amazing aircraft, its features and its record.



He stated that Ed Heinemann, the designer has a long career at Douglas Aircraft during which he designed 22 different aircraft. His forte was attack aircraft and he was responsible for a long line of notable planes. In the fifteen years between 1938 and 1954, the SBD Dauntless (the Army Air Force A-24 Banshee), A-20 Havoc, A-26 Invader, AD Skyraider, A-3 Skywarrior, and A-4 Skyhawk were launched from his drawing board.

Heinemann and Some Hawks

(photo credit: San Diego A&SM)



From his earliest days, Heinemann was enamored with aviation. He attended the Los Angeles Manual Arts High School, the same institution which Jimmy Doolittle had attended, but left early with no diploma. His first job was a draftsman for the Douglas Aircraft Company at \$18/week. This position allowed him to associate with legendary aircraft builders such as Donald Douglas, Jack Northrop, Lee Atwood, and Dutch Kindelberger. Northrop pioneered the development of stressed skin construction and flying wings. Atwood and Kindelberger went on to found North American Aviation and produced the Mustang, Sabre series, X-15, and contributed to the Apollo Space Program. While Northrop and Atwood went on to found their own companies, Heinemann stayed with Douglas for 34 years.

In the early 1950s, the Navy issued a request for proposals (RFP) for a carrier capable jet powered attack plane to replace the venerable Heinemann designed Douglas Skyraider. Heinemann studied the Navy's Bureau of Aeronautics specifications delineated in the RFP and decided to produce and aircraft which would exceed the Navy requirements which were: 500 mph, a 460 mi combat radius, the ability to carry 2,000 pounds of ordnance and a weight of 30,000 pounds all for \$1 million per aircraft.

Heinemann's design philosophy was to take the most powerful engine and surround it with the lightest possible airframe. He posted a sign on his office door which read

If its: less weight, more gas, simple design, better quality improved takeoff, less gingerbread, better performance, COME IN: as a matter of fact, we're glad to have you!

A placard on his office wall read: "*Simplicate and Add Lightness.*"

One of the Douglas employees, Irene Maarsingh penned a poem reflecting the Heinemann design philosophy.

*O Lord, please guide each engineer
That works for me to persevere*

*In paring off each idle pound -
I want no extra weight around!
I must be light so I can fight
and come back home to roost at night!*

The weight of an aircraft has been an endemic problem from the earliest days of aviation until today. Every pound of added weight requires about ten pounds of structure or fuel to maintain performance and must be offset, generally by increasing the power. But the power increase demands additional airframe strength or aerodynamic modifications which add weight and the designer is caught in a viscous circle in order to maintain contracted performance.

Heinemann's answer to the Navy's request was to lead his design team in building a small, no frills aircraft using every possible weight reduction technique. The small delta wing did not need to be folded which eliminated the complex system needed to do so. The original aircrafts had no oil recovery system, pumping spent oil overboard, eliminating the weight and cost of pumps and sumps. Ancillary units such as the ejection seat, control panel, air conditioning, and electronics were simplified. The leading edge wing slats operated automatically, actuated by air flow and gravity rather than hydraulics. The prototype weighed half the Navy's original minimum requirement, cost \$140,00 less and was capable of operating from the smaller fleet class carriers.

The diminutive Skyhawk acquired several nicknames: Scooter and Tinkertoy. But its agility led to a name which honored the designer, Heinemann's Hot Rod.

First a word about the designations which apply to the A-4. Before 1962, the U.S. Navy used a system in which the first letter denoted the mission of the aircraft, the next symbol, a number, stood for the design number, and a letter identified the manufacturer. A hyphen followed by a number indicated modifications of the basic design. So, XA4D-1 stated that the aircraft was an experimental attack aircraft, the fourth design in the series, manufactured by Douglas Aircraft and the first modification. A "Y" prefix indicated that

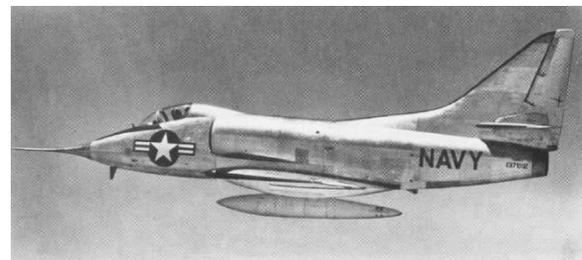
the aircraft was a service prototype.

From 1962 onward, the Department of Defense mandated a uniform system in which the initial letters denoted the mission and a hyphen followed by a number and letter indicated the design and its modifications. Thus, the TA-4F stands for an attack trainer, fourth in a series, modified six times.

Some 2,960 Skyhawks rolled off the production line over a period of 23 years, a record for U.S. attack aircraft, and the aircraft still flies missions today, 60 years after its introduction into service. Interestingly, the Cessna 172, also called Skyhawk has been around for some 60 years too. Both celebrate their maiden flights this month, June 12, 1955 for the 172 and June 22, 1954 for the A-4. Both types have received 18 basic modifications and carry the "S" suffix in their alpha-numeric designations. The Cessna holds the record for the most produced aircraft in history. It is still in production and more than 43,000 units have graced the skies.

A study of all of the models of the A-4 produced shows that the design needed 22 of the 26 letters in the alphabet, 23 if you count the "w" in Skyhawk. So let's take a look at an A-4 alphabet soup.

First out of the stable was the experimental XA4D-1 and the service prototypes, YA4D-1.



XA4D-1

(photo credit: USN Aviation News)

The A4D-1 became the A-4A under the designation system adopted in 1962. A total of 166 were built.



An A-4A bearing the markings of NAS Las Alamitos

The 542 A-4Bs, formerly the A4D-2, added an air-to-air refueling capability.



A-4B on the deck of the USS Intrepid museum ship.

The addition of radar, an autopilot, the Low Altitude Bombing System, and a more powerful engine were incorporated into the 638 A-4C models.



A USMC A-4C at the Flying Leathernecks Museum, Mirimar. (Note the externally ribbed rudder. It was originally designed to reduce rudder oscillations in the early aircraft.

A-4D was not used to avoid confusion with the pre-1962 A4D.

The Wright engines from previous Skyhawks were changed to more powerful Pratt & Whitneys to support the addition of two additional weapon pylons and additional navigation and weapons delivery electronics. 499 A-4E units were built.



An A-4E carries the livery of VA-23, the Black Knights which flew from the USS Oriskany in the late 1960s.

The TA-4E was the prototype for the trainer version and only two were produced. The last two A-4E were removed from the production line and a 28 inch fuselage plug installed. This allowed for the addition of a second cockpit. Spoilers and nose wheel steering were installed. The modifications were radical enough so the production versions emerged as the TA-4J.

The compact Skyhawk was running out of internal room for more electronics so the A-4F featured a fuselage hump which provided additional space. Upgraded Pratt engines provided 20% more thrust than the first of the A-4Es.



The A-4F flew as an "adversary" aircraft to train fighter pilots to combat dissimilar aircraft. These "Red Star" Skyhawks belong to VFC-13.

(photo credit: PH2 Bruce R. Trombecky, USN)

The Blue Angels also used the A-4F and the TA-4F for about a dozen years. However they were modified. The "hump" was removed, the wing slats were permanently closed, and a smoke generator and inverted flight fuel system was installed.



Blue Angel A-4s in the Atrium at the Museum of Naval Aviation, Pensacola. The lead aircraft is an A-4E. The others are A-4Fs.



A-4F at Seattle's Museum of Flight

Only four EA-4F electronic warfare trainers were produced. The external stores which they carried were electronic packages which transmitted simulations of Soviet missile and aircraft signals.

The TA-4J was the first production model of a dedicated line of trainers. The weapon systems were removed and the engines downrated.



This TA-4J is on display at the Grissom Air Reserve Base Museum in Indiana. The paint colors are the typical high visibility white and orange scheme used on trainers. Note the deployed leading edge slats.

The TA-4J was flown by VC-8 simulating Soviet aircraft and used in dissimilar air combat training.



(Photo Credit: richard vander meuten)



(Photo Credit: Erik McCarthy)

The A-4L order was 100 A-4Cs remanufactured for Navy and Marine Corps reserve squadrons. The "hump" was retrofitted and A-4F electronics installed.



*An A-4L at the Castle Air Museum
(photo credit: Castle Air Museum Website)*

The A-4M, Superhawk II, was a USMC order with special ordnance delivery electronics and of course, a more powerful engine. The factory turned out 158.



This A-4M proudly displays its refueling probe.

Four A-4Ms were modified with the Hughes Angle Rate Bombing System and called the A-4Y

but the designation was never officially adopted by the Navy nor Marines.

From time to time, you might find an aircraft with an unusual prefix such as the NA-4M pictured below.

If an aircraft is extensively modified for special tests and reconversion to the original configurations is not intended, it receives the "N" prefix.



The aircraft bears the SD tail code of VX-23, the Salty Dogs and is on display at NAS Patuxent River, a Navy aviation test center.

The OA-4M was a modified TA-4F used by the USMC as a forward air controller. Twenty five were built and served in Vietnam.



*An OA-4M inside a revetment at Osan Air Base, South Korea.
(photo credit: f-16crewchief)*

The US Army has had an ongoing struggle with the USAF in order to field its own force of forward air control, reconnaissance and close air support fixed wing aircraft. At one point, they were looking at the Cessna T-37 Tweet. In 1961, the Army selected three aircraft for evaluation: the Fiat G-91, Northrop N165F, and the Douglas A4D-2 (A-4C) Skyhawk and sought to evaluate them for operations from unimproved fields.



Douglas, Northrop, and Fiat perched on a sod field.

The aircraft needed modifications to perform the mission. Drag chutes, wide low pressure tires, and dual wheels on the landing gear are examples of what was tried. The Navy aircraft retained their service paint but the Fiats and at least one of the Northrops acquired US Army markings.



An Army modified Skyhawk. Note the dual main wheels.

As always, the USAF scotched the Army hopes. The Skyhawks, which had competed favorably went back to Douglas where they were restored to their original configurations and returned to the Navy. The Army then put its funds into the development of helicopters and with few exceptions, never annoying the Air Force bureaucracy by arming fix wing aircraft.

The next edition of The Coastwatcher will carry Part II of the tribute to the A-4 Skyhawk and will feature Skyhawks in foreign and civilian service.

AVIATION CHRONOLOGY

15 June, 1936 - First flight of the Westland Lysander.



16 June, 1984 – Frontier Airlines Flight 244 departs Denver, Colorado for Lexington, Kentucky. Capt. Emily Warner commands the Boeing 737 and First Officer Barbara Cook sits to her right. This is the first time that an all-woman flight crew has flown for a U.S. airline.



(Photo Credit: Frontier News)

17 June, 1941 - The Royal Navy commissions its first escort aircraft carrier, *HMS Empire Audacity*, later renamed *HMS Audacity*.



18 June 1971 - Southwest Airlines is founded.



19 June, 1944 – Japanese carrier aviation receives its death blow at the Battle of the Philippine Sea. The “Marianas Turkey Shoot” The Japanese lose 315 aircraft and two carriers which are sunk by submarines. Lt Alex Vraciu, flying a Hellcat off the *USS Lexington*, shot down six Japanese in eight minutes using only 360 rounds of ammunition!



(Photo Credit: US Navy)

18-20 June, 1937 - Pilot Valerie Chkalov, Navigator Alexandr Belyakov and Flight Engineer Georgi Baidukov fly an ANT-25 from Moscow to Vancouver, Washington, the first flight from Europe to North America over the North Pole. The 5,400 mile flight took 63 hours and 25 minutes.



21 June, 1960 – The Boeing B-29 Superfortress was retired. Hap Arnold took a chance and approved quantity construction of the revolutionary aircraft while the experimental and service prototypes were still being tested. The B-29 was the most expensive weapons system in World War II, more costly than the Manhattan Project's atom bomb development.



The recently reconstructed Doc takes flight. Volunteers took over two decades to complete the reconstruction work.

22 June, 1954 - First flight of the Martin XB-48. Constructed as a back-up to the Boeing B-47 Stratojet, only two prototypes were built.



The two engine pods, each holding three engines, are airfoil sections which increase lift. The space between each engine is for cooling.
Photo Credit: Martin)

23 June, 1942 – First flight of the Martin JRM Mars. The Navy's largest flying boat, only seven were built. Two are left, the Philippine Mars and the Hawaii Mars.



The Philippine Mars is operated by Coulson Flying Tankers and is based at Sproat Lake, Vancouver Island, British Columbia.

| MARS WATERBOMBERS | |
|-------------------|---------------------------------|
| WINGSPAN | 200 FEET |
| HEIGHT | 48 FEET |
| GROSS WEIGHT | 85,000 POUNDS |
| CREW | FOUR |
| ENGINES | FOUR IN CYLINDER WRIGHT CYCLONE |
| PROPELLERS | CURTIS ELECTRIC FOUR BLADES |
| CRUISE SPEED | 150 KNOTS |
| RANGE | UP TO 25 HOURS |
| FOAM/WATER LOAD | 6000 IMPERIAL, 7200 US, GALLONS |

| THE LEGEND OF THE MARS | |
|--|---|
| <p>#1 THE OLD LADY SEPT. 22, 1941 - 1945 XPB2M-1 BUFP1520 CONVERSION TO BUFPB2M-1R DEC. 3, 1942 SCRAPPED 1945</p> | <p>#5 MARSHAL MARS 1945/46 JRM-1 BUFP1922 CRASHED AND EXPLODED OFF HAWAII MAY 8, 1950</p> |
| <p>#2 HAWAII MARS JUNE 1945 - AUGUST 5, 1945 JRM-1 BUFP1919 CRASHED AFTER LOSING VERTICAL STABILIZER ON LANDING AT CHEBAPEAKE BAY</p> | <p>#6 HAWAII MARS 1945/46 JRM-1 BUFP1923 REPLACEMENT FOR ORIGINAL HAWAII MARS STILL FLYING FOR COULSON FLYING TANKERS</p> |
| <p>#3 PHILIPPINE MARS 1945/46 JRM-1 BUFP1820 JAN. 10, 1945 STILL FLYING FOR COULSON FLYING TANKERS</p> | <p>#7 CAROLINE MARS 1947/48 JRM-2 BUFP1924 THO DESTROYED BY HURRICANE FRIEDA *AS THE HOME PLACE YOU SEE IN FRONT OF YOU WAS BUILT IN 1945 BUT WAS NEVER FINISHED AS THE WAR ENDED. IT SAT OUT IN THE ELEMENTS FOR THE LAST 62 YEARS UNTIL 2007. WHEN THE COULSON FAMILY BOUGHT THE COMPANY AND OPENED THE VISITOR CENTRE AT THE TANKER BASE ON SPROAT LAKE.</p> |
| <p>#4 MARIANAS MARS 1945/46 JUNE 23, 1950 JRM-1 BUFP1821 CRASHED AND BURNED ON A FOREST FIRE NEAR PARKSVILLE, VANCOUVER IS.</p> | |

WESTERLY AIRPORT ASSOCIATION

SUMMER PANCAKE BREAKFAST

Proceeds Benefit Westerly Airport Ass'n, Humphrey J. Amodeo, Jr. Scholarship Foundation

SUNDAY JUNE 25, 2017
8 AM - 1 PM

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