Missions for America
Semper vigilans!
Semper volans!

Publication of the Thames River Composite Squadron
Connecticut Wing, Civil Air Patrol
http://ct075.org.
300 Tower Rd., Groton, CT

Issue 17.08 21 February, 2023

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SQUADRON MEETING

21 February, 2023

Cadets and Seniors met in concert for the mandated annual safety meeting.

Capt. Kopycienski, Ass't Safety Officer briefed the members on CAP's culture of safety and its relation to CAP's core values. The example presented were the decisions which led up to the destruction of the space shuttle Challenger just after launch.

C/Maj Bosse discussed the dangers which fatigue poses for decision making.

Lt Pineau, Squadron Commander and a captain in the Meriden Fire Department offered a video detailing the danger of fires involving plastic materials.

Maj Noniewicz, TRCS Safety Officer used the normal and emergency check lists in an aircraft's pilot operating handbook to point out how planning and a methodical approach can mitigate the dangers inherent in flying.

Boom-Boom

A Look at Twin Boom Aircraft
Part Three
Fighter-Interceptors

Almost everyone is familiar with the Lockheed P-38 Lightning, the most successful twin boom fighter plane ever manufactured. Just over 10,000 were produced during World War II. The top U.S. ace of the war, Richard Bong, flew a Lightning in the Pacific Theatre scoring 40 victories. So let us take a look at some twin boom designs which were produced by four other companies from World War II through the Cold War.

Fokker G.1

The Dutch Fokker G.1 is an example of what is sometimes termed a “heavy fighter” and its role as escort and long range air superiority fighter puts it in the same class as the far more successful but overrated Messerschmidt Bf 110 and the highly successful but underrated Bristol Beaufighter, both of which were produced in the thousands.

First flown in March of 1937, the G.1's career came up a guilder short and a stuiver short when the Germans crossed the border in 1940. Only 63 were built. They had limited success in the unequal struggle with the Luftwaffe but the survivors fell into the hands of the Nazis and were relegated to training roles.

It carried heavy armament as a fighter, eight 7.9 mm machine guns in the nose and a single 7.9 for tail defense. Like most fighters, it could fly as a fighter bomber and could carry a modest payload

of about 750 pounds. Its could almost reach 300 mph, climb to 33,000 feet and cruise for 1,000 mile. Some half dozen air forces expressed interest in acquiring the G.1 but that was not to be.

Northrop P-61 Black Widow

Early Black Widow in green rather than the more common black and still sporting the quad .50 caliber turret.

Intercepting enemy bombers at night became a priority mission as early as World War One when the Germans launched air raids against Britain using both Zeppelins and large fixed wing aircraft. However, it was only with the advent of ground and airborne radar that the mission could gain a modicum of success.

The earliest tactics in World War Two involved the development of ground control techniques and radar equipped aircraft, both by the RAF and the Luftwaffe. The two heavy “fighters” which come to mind are the Douglas A-20 Havoc, known as the P-70 in American service and the highly versatile Junkers Ju 88.

But the Northrop P-61 wins laurels as the first aircraft specifically designed as a night fighter. As with the P-51 Mustang, the Black Widow found its earliest support from the hard-pressed British who were seeking an aircraft with the ability to carry the still heavy airborne radar which they had developed in order to counter the Blitz bombing campaign. The brilliant Jack Northrop realized that the qualities demanded, heavy armament, radar capability and radar crewman and a long loiter time would require a twin engine aircraft.
The concept was novel and many design changes occurred before the operational variants were built. Experiments were conducted with engine improvements, hard points for auxiliary fuel tanks and bombs and the complement of machine guns and cannons. The P-51-15 had the largest production run of the Black Widow family, about 22% of the 706 made.

The original armament consisted of four .50 caliber machine guns in a dorsal turret and four forward firing 20 mm cannons in a ventral nose mount. A radar operator, gunner and pilot worked in concert locate and engage enemy aircraft. Maximum speed was around 350 mph, range 1,400 miles and the service ceiling was 33,000 feet.

The Black Widow served in all of the theaters of war but its late entry into combat and the time to develop combat tactics and crew experience left it with a mediocre combat record. They had limited

use as tactical bombers and as the F-15A Reporter photo-reconnaissance version. During the Korean war, the Reporter was used for aerial mapping. NACA found uses for the Black Widow in its research programs and NACA collaborated with the US. Weather Bureau to gather radar data on electrical storms.

SAAB's Forays Into the Twin Boom Fighter Field

Most people recognize the name Saab as a purveyor of automobiles favored by Yuppies bu the company started as *Svenska Aeroplan Aktiebolaget* which means Swedish Airplane Corporation. The company was founded in 1937 to build aircraft for the Swedish Air Force. Prior to World War II, their air force was a motley collection of foreign aircraft from German, Great Britain, the Netherlands and Italy. As the war clouds darkened the skies of Europe, Sweden declared neutrality and opted to provide its air force with domestically produced models. Hence, Saab.

J21 and Saab 92, their first production automobile, c. 1949.

The J21 was the third type developed by Saab. They elected for a twin boom configuration with a pusher engine for improved visibility forward and a concentration of armament in the nose. The nose held a 20 mm cannon and two 13.2 mm machine guns. Two more machine guns were mounted, one in each wing. The rear propeller demanded an ejection seat. It performance was similar to that of the Fokker G.1 and P-61.

It made it first flight in December of 1945 but was finally retired in 1954 and replaced with a turbine powered version of the J21R which made its first flight in 1947 and entered the inventory in 1950.

The new jet was a successful conversion of its piston predecessor, most of which were actually rebuilt heavily modified J21 airframes.

Power for the J21R was provided by a license built de Havilland Goblin II centrifugal flow turbojet producing about 3,000 pounds of thrust. It was, of course, faster and could reach 500 mph but the heavy fuel consumption forced a cruise speed of 380 mph. Ceiling was higher but its range was half of the propeller driven J21 from which it was derived.

Building new aircraft from salvaged previous aircraft or from parts made deliberately for other

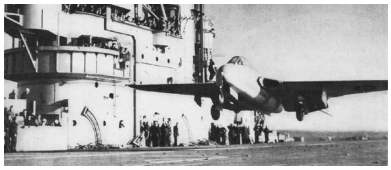
models is not uncommon. The Lockheed SR-71C was built from an engineering mockup of an SR-71A forward fuselage built for static testing and the rear fuselage of the retired first YF-12A. The Aero Spacelines Guppy series are an example converted from the Boeing C-97. According to the Bard from Stratford on Avon, borrowing from others “dulls the edge of husbandry” but borrowing from your own cheap or available free resources is praiseworthy economy.

de Havilland's Family of Vampires, Venoms and Vixens

Between 1943 and 1951. de Havilland Aircraft produced three lines of twin boomed jet fighters. The first was the 1943 DH.100 Vampire, initially called the Spider Crab. This was followed in 1949 by the DH.112 Venom which was first called the Vampire FB.8. The final offspring of the Vampire was the DH.110 Sea Vixen, a carrier-based and radar equipped for fleet air defense.

Swiss FB.6 Vampire at Dübendorf!

Winkle Brown making the first landing of a jet on a carrier in a modified Vampire.



DH.112 Venom Originally designated Vampire FB.8

Sea Vixen Designed for fleet defense, it was also used a a refueling tanker and ground attack aircraft.
(Credit: wallycacasabre)

The Vampire was the RAF's second jet fighter, following the Gloster Meteor by about a year. Like the Swedish J21R, it also used the Goblin centrifugal flow engine. An odd feature of the Vampire was that the forward fuselage was constructed of plywood and four 20 mm cannons were mounted underneath. The mature models such as the FB.5 of which over a 1,000 were produced recorded performances as good as or somewhat better than the Swedish J21R. It was good enough that the Swedes imported 310 as the J28B in 1956.

The aircraft was a financial blessing for the distraught British aircraft industry and over 3,000 were produced domestically or under license.and over 30 different nations incorporated it into their air forces. Too late for World War Two, the Vampire achieved a notable combat record. The served with the RAF in Korea and the Malaysian Emergency and Kenya's Mau Mau insurgency Dominican Civil War, with Egypt in the Suez, India and Pakistan against each other, and the Rhodesian Bush War.

In 1945, the Vampire achieved distinction when Captain Eric "Winkle" Brown landed a Sea Vampire Mk.10 on the *HMS Ocean*, the first landing of a jet on an aircraft carrier. She aircraft was originally the second of two prototypes DH.100s and modified with an arrestor hook and strengthened fuselage and landing gear.

Honorable Mentions

Glacier Girl

The Lockheed P-38 needs little introduction or the reading audience, But the story of the P-38F named "Glacier Girl" deserves mention.

In July of 1942, six P-38Fs and two B-17Es were headed to Great Britain over the North Atlantic. Bad weather led to an emergency landing on the Greenland ice cap. Everyone was rescued but all eight aircraft were abandoned and over the years buried under 268 feet of snow.

Recovery efforts 268 feet below the ice cap surface.

The Restored Glacier Girl.

After a half century, a resourceful salvage crew performed an epic engineering enterprise and brought one of the aircraft to the surface. The aircraft, to be named "Glacier Girl." was restored and is flying today.

AEROSPACE CHRONOLOGY FOR THE WEEK

Feb. 22, 1995 – The National Reconnaissance Office's Corona reconnaissance satellite program, 1959-1972, is declassified. The original Corona launches were cloaked under the mission name Discoverer as civilian scientific and engineering experiments.

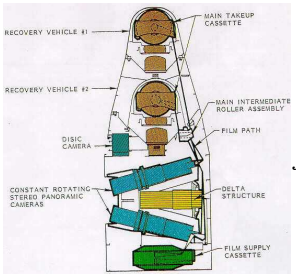
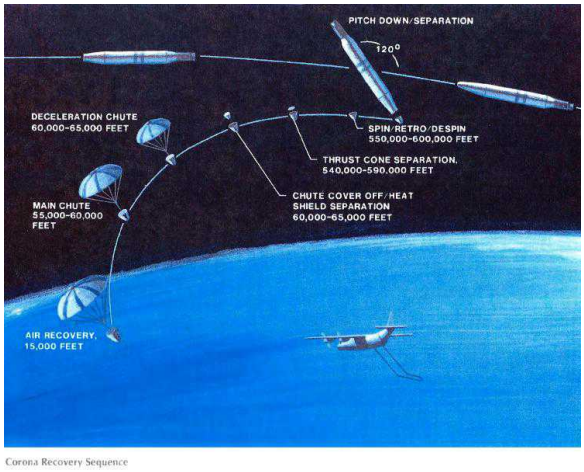


Diagram of the film transport system feeding into the two re-entry capsules.
(Credits: National Reconnaissance Office)

The capsules used to return the imagery of the Soviet Union and China were said to contain biological specimens. After re-entry, capsules were parachuted over the Pacific Ocean where they were snagged by specially equipped USAF C-119 Flying Boxcars.



Corona Recovery Sequence

A trapeze equipped Flying Boxcar retrieving a capsule.
(Credit: USAF)

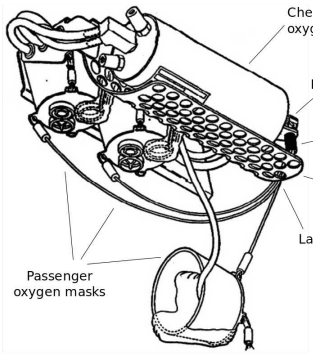
February 23
Aircraft and Spacecraft Fires

1997

Aboard the Mir Space Station, a solid-fuel, oxygen-generating canister bursts into flames. The fire and dense smoke block the emergency access to the docked Soyuz space craft. Four Russians, a German and NASA astronaut Gerry Linenger donned oxygen masks and successfully fought the fire for 14 minutes.

The Mir Crew. Jerry Linenger, US member is center front.

Solid fuel oxygen generators are in common use wherever an emergency supply of oxygen might be needed, in mines, submarines, fire-fighting apparatus and drop-down oxygen masks in airliners. A typical unit uses lithium perchlorate which releases oxygen after ignition. The oxygen is cooled and filtered. A lithium hydroxide filter is part of the system to remove exhaled carbon dioxide.



Credit: National Transportation Safety Board)

2008

The Spirit of Kansas, a Northrop-Grumman B-2A bomber crashed at Andersen AFB, Guam. Moisture had entered the air data sensors and incorrect airspeed and angle of attack information was sent to the flight control computers causing a 30 degree pitch-up at too low a speed. The stall was unrecoverable and both crewmen safely ejected. The aircraft was destroyed in the ensuing fire. The loss of the aircraft cost $1.4 billion, the costliest in aviation history.

Firefighters spray the wreckage. *(Credit: USAF)*

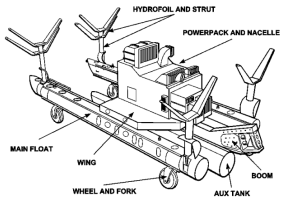
A video tape of the accident is available at: https://www.youtube.com/watch *v=0zZFD1KAl64*

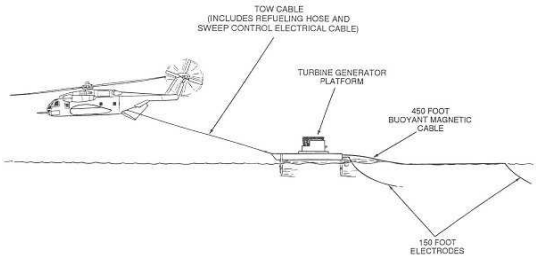
Feb. 24, 1973 – Clearing mines is not an occupation with a long list of applicants for employment and fewer able to perform the task safely. The final accords which led to the United States disengagement in Vietnam required that the United States clear the mines which we had sowed in North Vietnam waters.

There are lots of ways to clear sea mines: grapnels, towing cutters on paravanes, employing underwater demolition teams, and using various magnetic, noise, and pressure devices to set them off. The USN and USMC used helicopters towing sweeping gear to execute Operation End Sweep. About a two and a half dozen Sikorsky CH-53 Sea Stallion helicopters were mustered from the Navy's Helicopter Mine Countermeasures Squadron 12 and two Marine detachments. The Navy also supplied a flotilla of mine sweepers and support vessels.

The helicopters towed a sled which which was equipped with an onboard turbine which drove an alternating current generator. Electricity from the generator is sent to a submerged sweep cable array which produces a magnetic field in the water sufficient to set off magnetic mines. An acoustic device can be installed which will cause acoustic mines to detonate.

Details of the Methodology used to clear sea mines by helicopter towed sleds.





The Marines were not specialized mine sweepers so practice was held towing the hydrofoil sweeping sleds off Charleston, S.C. and Subic Bay in the Philippines before final deployment and many lessons were learned. Although helicopters are faster, they demand a higher degree of maintenance and logistics support than surface ships so the Navy concluded that future operations would require a balanced force or air and surface assets to effectively clear mines.

Feb. 25, 1941 – First flight of the Messerschmitt Me 321 *Gigant* cargo glider capable of carrying a 50,000 pound load. The aircraft was designed to accommodate the load of a standard German railroad flatcar or carry 120 combat ready troops.

However, there is no free lunch and its large size made ground handling difficult and capable tug aircraft were rarely available. The follow-up to the glider *Gigant* was the Me 323, a six engine behemoth with approximately the same carrying capacity.

Feb. 26, 1942 – One of the most advanced pre-war passenger liners, the Boeing 307 Stratoliner, an offspring of the Boeing B-17C, is pressed into government service as the C-75 and immediately used to haul armor piercing ammunition to the hard-pressed British forces fighting Rommel's Afrika Corps in Libya.

The pressurized airliners were taken from TWA and PanAm. To save weight, the pressurization system and sound insulation was removed as was most of the other luxurious features designed to delight the decadent rich civilians who could afford the tariff. Extra fuel tanks were installed, an astrodome for the navigator and military radio equipment. The landing gear was strengthened to support the 10,000 pound increased maximum take-off weight.

Only ten were ever built. The prototype crashed during testing. Eventually, the nine survivors were all returned to civilian service and had interesting careers. Five went back to TWA and were christened with the names of North American Indian tribes, *Zuni*, *Cherokee*, *Apache*, *Navajo* and *Comanche*.

Was this an early example of politically incorrect cultural appropriation? Its too late to cancel TWA. They left the skies in 2001. But American Airlines acquired their assets. Are the sins of the acquired corporation visited upon the acquiring corporation? Check out *Exodus 20:5-6* or *Deuteronomy 5:9-10*.

Cherokee, formerly N19906, loading up following conversion to C-75 standard.Her name is visible in white just under the cockpit windows.

PanAm christened theirs *Clippers Comet*, *Rainbow* and *Flying Cloud*.

NC19904 was bought by Howard Hughes and named the *"Flying Penthouse"* but was later converted into a houseboat, the *Cosmic Muffin*!

Hughes' Stratoliner
(Credit: San Diego Air & Space Museum)

The Cosmic Muffin

Most of them were purchased from TWA and PanAm and operated by a variety of French airlines, ended up in Indochina and met unhappy fates, a story for another time.

TWA's Cherokee ended up with a French airline and along with two sister ships from TWA, served the *Commission Internationale de Contrôle (CIC),* International Control Commission (ICC) upon which Indian, Canadian and Polish delegates oversaw the Geneva Accords that ended the First Indochina War.

F-BELU, formerly Cherokee in Saigon.

Cherokee ended up with Royal Air Lao, registered as XW-TFP. An Aviation Safety Net report states that:

> *An aircraft was reported missing on this date while on a flight from Hong Kong to Vientiane. MacAlan Thompson reported that a Stratoliner was forced to carry out a controlled crash-landing in a river (ed. Note "Mekong River in Laos). Captain Jimmy Lieu and the copilot were held prisoner by the communist Pathet Lao for several months then released about May 1975.*

The one survivor has found its rest in the National Air and Space Museum's Udvar-Hazy Annex. But it had a rough ride to Dulles. At one point, it was the personal aircraft of the abominable Haitian dictator "Papa Doc" Duvalier and operated by Compagnie Haïtienne de Transports (COHATA), the Haitian military airline. It also passed through some corporate ownership before returning to the United States. Boeing volunteer retirees restored the aircraft.

After restoration, N19903, PanAM's *Clipper Flying Cloud* was being prepared for a ferry flight to Virginia but it ran out of fuel and ditched in Elliot Bay, Seattle. Restored again, it finally made it to its final resting place in Virginia.

The Saga of Clipper Flying Cloud

In PanAm Service
(Credit: Goleta A&SM)

Papa Doc's Stratoliner
(Credit: Ed Coates Collection)

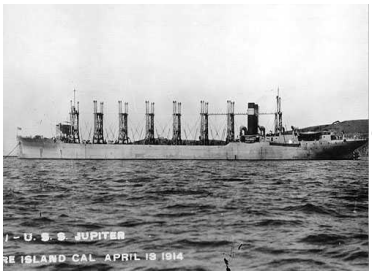
At Pima Air Museum, Tucson after move from Falcon Field, Mesa, Arizona.

Recovery from Elliot Bay

The resurrected Flying Cloud at the Udvar-Hazy Annex, National Air and Space Museum

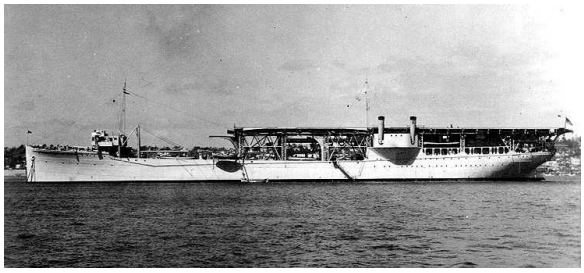
February 24
Two Aircraft Carriers of Sorts

1942 – The aircraft tender *USS Langley* (AV-3), previously the U. S. Navy's first aircraft carrier, *USS Langley* (CV-1) and before that the *USS Jupiter* (Fleet Collier No. 3), is sunk by Japanese aircraft in the Indian Ocean. She had sailed from Australia with a deck-load of 32 Curtiss P-40 fighters, their pilots and ground crews fighters for delivery to Tjilatjap**,** Java in the Dutch East Indies.



USS Jupiter (AV-3) Prosaic Carrier of Coal

Moored next to USS Saratoga (CV-3) and Lexington (CV-2), c. 1930



USS Langley, Aircraft Tender, AV-3

1945 – The *USS LST-776*, offshore Iwo Jima, successfully launches a USMC Stinson OY-1 Sentinel observation plane for specially rigged booms and cables developed by Captain James H. Brodie, USAAF, a fine example of inter-service cooperation.

L-5 after Brodie Gear recovery (Credit: USN) and Brodie Gear L-5 at Udvar Hazy Annex, NA&SM)

Videos of the Brodie Gear in action during practice on the Mississippi River are accessible at:

https://www.youtube.com/watchv=OIba5RNEFSA

Feb. 28, 1996 – NASA astronauts Elliot See and Charles Bassett, the original Gemini 9 crew, go West. They were flying into Lambert Field, St. Louis to visit the McDonnell plant where their space craft was under construction.

The Gemini 9 Prime and Backup Crew

The mission originated at Ellington AFB near Houston. See and Bassett were in a flight of two with their backup crew, Gene Cernan and Thomas Stafford. Poor weather required an instrument approach and both T-38s missed on the initial attempt.

See elected to try a visual circling approach, the most dicey of all possible options and in the vernacular of the gambler, crapped out. He missed again, went to afterburner, turned right and

crashed into McDonnell building 101, the same building in which the Gemini 9 craft was being built. Stafford decided to follow the normal approach procedure and landed after the crash.

Stafford and Cernan were moved up to the primary position for Gemini 9 which was re-designated Gemini 9A. Jim Lovell and Buzz Aldrin assumed the back-up role. For Aldrin, this was a lucky move. He had been slated for the prime crew of Gemini 13 which was cancelled. So he flew on Gemini 12 which moved him into a crew rotation sequence leading to his seat on Apollo 11 and his place in history as the second man to set foot on the moon.

NASA still maintains a fleet of 20 T-38 Talons at Ellington Field JRB on bailment from the USAF.

Meeting the Threat to the Nation's Aerial Sovereignty

Reader Phil Kortesis has submitted a picture of the latest addition to the USAF air-to-air ordnance, the BIW-1 (Balloon Intercept Weapon-1). It was designed in record time by the Naval Air Weapons Station at (ironically) China Lake, California, the same facility which gave us the AIM-9 Sidewinder. This newest A-tack weapon will pin back foreign penetrations of our borders.

This will supplement the stratospheric high wall currently under development by the Army Corps of Engineers. Not only will this wall prevent spy balloon incursions from the north but also prevent the migration of Canada Geese which are a constant treat to airliners. Between 1990 and 2018, the FAA reports 1,772 known civil aircraft strikes with Canada Geese.

The BIW-1 is produced in four different versions, each designed to meet a specific need of NORAD. They are color-coded in the same way that small arms cartridges are marked to distinguish armor-piecing from tracer from incendiary, *etc*.

BIW-1A (Green) is a short range missile launched by metallic springs.
BIW-1B (White) is a low cost version which uses the inertia of the delivery aircraft to propel it.

BIW-1C (Blue) is long range and launched by massive bungee cord.
BIW-1D (Yellow) is a close in last chance weapon employed by ramming. In a rare case of inter-service cooperation, the US Army is also detailing bayonet instructors to all Air Force bases which maintain BIW-1 armed interceptor aircraft.

As a strategic resource push-pins are produced in a plant in Pennsylvania and we need not beg foreign countries to supply us with this much needed defense implement. Maybe we show sow calthrops along the southern border.

And with some apologies to Frank Loesser,

Yes the sky pilot said it
Ya gotta give him credit
For a sonofagun of a gunner was he, shouting

Praise the Lord its time to do some stickin'.
Praise the Lord, get your fighter in position
Praise the Lord and we'll make the balloons shrivel
And make the CCP bristle.
And we'll all stay free.