Missions for America
Semper vigilans!
Semper volans!

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WHERE ARE THEY NOW?

Cadet 1st Lt Roan Schaffer Reports

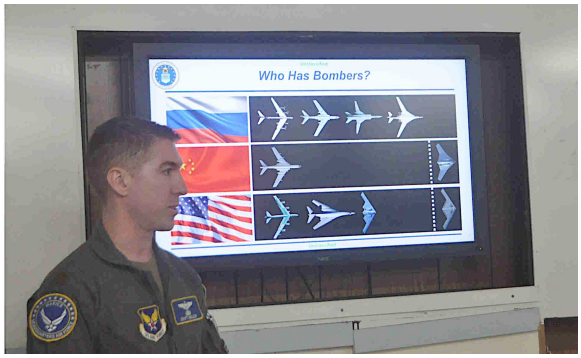
I recently received my tailwheel endorsement at Andover Flight Academy located on the Andover-Aeroflex airfield in New Jersey. We practiced lots of takeoffs and landings as they are the most difficult tasks in a conventional gear aircraft.

I attend Farmingdale State College on Long Island in their flight training program and my plan plan to earn instrument, multi-engine and commercial pilot ratings to meet a professional standards as a career goal. Enlistment in the Air National Guard at Francis S. Gabreski airport is also an option.

FORMER CADET ERIC NELSON VISITS SQUADRON

Eric Nelson left Thames River for the USAF Academy as a cadet lieutenant. He returned to speak to us from The Pentagon as a USAF major selected for lieutenant colonel and headed to command a B-2 squadron.

He briefed the TRCS cadets on his careful planning to enter the USAF Academy, life at the Academy and his Air Force career flying B-52s and earning two master degrees.



Maj Nelson's most cogent advice to accomplish success was to choose goals early, keep notes, practice skills, and allocate time wisely.

CURRENT EVENTS

Boeing Starliner, Calypso, Returns to Earth

Instead of splashing down in the ocean, as SpaceX's Crew Dragon and other capsules have done dating back to NASA's Mercury program, the unmanned Starliner landed, as the Russians do, on dry land. Boeing designed the reusable Starliner for dry recovery to avoid corrosion of components from salt water and to avoid the cumbersome arrangements for an ocean landing.

The spacecraft used two parachutes and deployed six airbags for a safe touchdown. Starliner will be returned to a laboratory for studies of the problems which threatened the mission and left its crew or two stranded on the International Space Station until a planned February return on a SpaceX Dragon.


Starliner descends and is inspected on the ground.

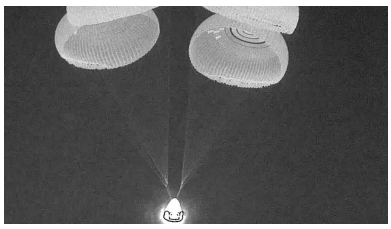
Boeing and NASA used New Mexico's White Sands Space Harbor, the former Northrup Strip in New Mexico. The strip was used to recover on Shuttle Mission STS-3. *Columbia*, in 1982 due to, ironically, flooding of the landing site, Edwards Air Force Base, located on Rogers Dry Lake! It was also used for the training of shuttle pilots. The Shuttle Training Aircraft were modified versions of Gulfstream IIs which could could simulate the aerodynamic characteristics of a shuttle when flying in the atmosphere and landing.


STA descends with extended main gear and spoilers. The cockpit is set up with a shuttle panel on the left for the astronaut trainee and a standard panel on the left for the instructor/safety pilot. Video at **https://www.youtube.com/watch?v=pCcdxhBddDI**

Polaris Dawn Mission

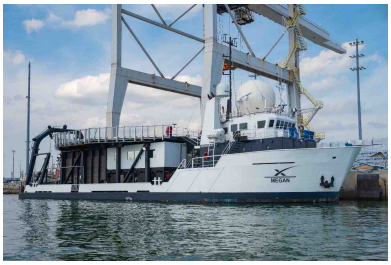
The Polaris Dawn crew, from left to right: Anna Menon, Scott "Kidd" Poteet, Jared Isaacman and Sarah Gillis. *(credit: Polaris Program/John Kraus)*

The crew of Polaris Dawn returned to earth on early morning September 15th, a fiery re-entry, descent followed by parachute deployment and splash-down near near the Dry Tortugas Islands in the Gulf of Mexico. SpaceX maintains two vessels designed to supply offshore oil and gas facilities, *MV Megan* and *MV Shannon,* converted to recover their spacecrafts and crews.



Infrared image of spacecraft after parachute deployment.

MV Megan in Port Canaveral.
(Credits: SpaceX)



Launched by a SpaceX Falcon rocket on September 10th, the Crew Dragon capsule, *Resilience*, was manned by a crew of four, two men and two women.

The mission set new records by exceeding the highest earth orbit of a manned spacecraft, 870 miles, which was previously held by *Gemini 11*, 853 miles. They then entered a new orbit with an apogee of 458 miles where they depressurized the spacecraft and Issacson and Gillis did short space walks to test the new EVA spacesuits developed by SpaceX.

The mission was commanded and financed by Jared Isaacman, a technology billionaire who made his fortune with Shift4, a company which developed improvements for handling credit card transactions. Isaacman is a highly skilled pilot, over 6,000 logged hours and holder of the world's record for a circumnavigation of the earth. He also founded Draken, a military contractor which provides governments with various tactical training modes and maintains a fleet of approximately 150 aircraft which includes F-16s, Mirages, A4D Skyhawks and MiG 21s. Isaacman holds a bachelor's degree in aeronautics from Embry-Riddle Aeronautical University.

Retired USAF Lt Col Scott "Kidd" Poteet flew combat, served as a member of The Thunderbirds and commanded a USAF Aggressor Squadron. Over the last two decades, Poteet has finished 15 Ironman Triathlons.

Two mission specialists were aboard. Sarah Gillis, an engineer, is the lead space operations engineer at SpaceX and is responsible for astronaut training. Past duties also included navigation and communication responsibilities for the Dragon manned missions.

Anna Menon, medical specialist, manages crew operations development for SpaceX and has been a crew communicator and mission director for both manned and unmanned cargo flights. Formerly, NASA employed her as a biomedical flight controller of the International Space Station.

The final two days of flight time was used to carry out 36 science experiments, most of which concentrated on studying the effects of space flight on human beings. One important experiment was testing a laser communication system compatible with the huge constellation of SpaceX's Starlink satellites which are capable of providing broad band internet service.

The Polaris Dawn flight is another step in developing the science and engineering to support Elon Musk's goal of a voyage to Mars.

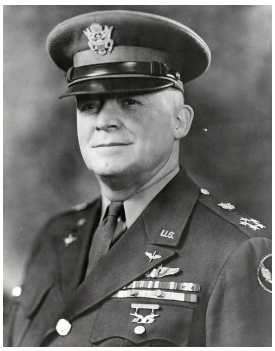
AEROSPACE HISTORY AND CHRONOLOGY

Sept. 17, 1947 – The United States Army Air Forces are separated from the United States Army and become an independent armed service, the United States Air Force.

The National Security Act of 1947 which created the USAF states that

> *In general, the United States Air Force shall include aviation forces both combat and service not otherwise assigned. It shall be organized, trained, and equipped primarily for prompt and sustained offensive and defensive air operations. The Air Force shall be responsible for the preparation of the air forces necessary for the effective prosecution of war except as otherwise assigned and, in accordance with integrated joint mobilization plans, for the expansion of the peacetime components of the Air Force to meet the needs of war.*

The creation of an independent air arm may can be credited to General Billy Mitchell and his acolytes, chief of whom was Henry Harley "Hap" Arnold, Commanding General of the U.S. Army Air Forces in World War II. Arnold became the only man to hold Five-Star rank in two military services.



Hap Arnold

Out with the old! In with the new!

The first Chief of Staff of the newly formed service was General Carl Andrew Spaatz who commanded the Army Air Force after the retirement of Arnold in 1946.

But in the military "what goes around, comes around!" The U.S. Army has adopted the "Army Greens," similar to the WWII "pink and tans" for a general service uniform.

"Tooey" Spaatz

Stuart Symington was appointed the first Secretary of the Air Force, a civilian appointee who has the authority to conduct all affairs of the Department of the Air Force, a branch of the Department of Defense which had assumed the responsibilities of the Department of War and the Department of the Navy under the The National Security Act of 1947.

AEROSPACE HISTORY AND CHRONOLOGY

17 SEP, 1959-A. Scott Crossfield, legendary test pilot and CAP icon, pilots North American X-15 on the first of its 199 flights at Edwards AFB.

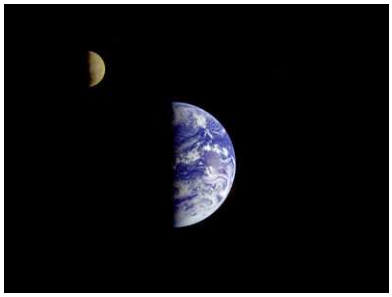
Stuart Symington, First Secretary of the Air Force (credits: USAF)

A CAP Aerospace Education Officer who attains a Master Rating is awarded the CAP's Scott Crossfield ribbon.

A new service deserves a new uniform so the Air Force bid farewell to the classy "pink and tans" and said "...took the blue from the sky and a pretty girl's eye and a touch of Old Glory too" as their new livery.

18 Sept. 1977 - The first photograph showing the earth and the moon together was taken by the Voyager I spacecraft.

(Credit: NASA)



19 Sept. 1949 – First flight of the Fairey Gannet. Both the namesake bird and the aircraft hunt underwater prey. The aircraft has some unusual features:

Gannet's dive from a height and pursue they prey underwater.(Credit: Mike Pennington)

The special equipment which optimizes this technique are nostrils in the mouth, air sacs which act like bubble wrap to cushion the impact with the water and binocular vision.

The Fairey Gannet also has special features such as good visibility from the cockpit, a long loiter time, electronic search equipment and a large payload of sonobuoys, depth charges and anti-sub torpedoes.

Space aboard an aircraft carrier is limited so almost all carrier-borne planes have folding wings. Commonly, the wings fold vertically or rotate and fold back along the fuselage. The Gannet has an unusual bi-fold wing.

AS.1 (Credit: JHM Collection)

The dual counter-rotating propellers were each run by a separate turbine engine. For extended cruising range, the pilot could shut down one of the engines.

An AS.4 of the Bundesmarine now at the German Air Force Museum, Gatow.

20 SEP. 1946 - First Flight of the Martin P4M Mercator. Like the Gannet, the Mercator had an unusual feature. Whereas the twin-engine Gannet looks like a single engine aircraft but actually has two engines, the Mercator looks like a twin engine aircraft but actually has four engines. Outwardly powered by two piston engines, the Mercator had two turbo jets mounted in the aft end of the piston's nacelles.

Only 21 were built and they found their main employment with VQ-1 and VQ-2, Navy squadrons charged with gathering signal intelligence. During the course of these missions, two were shot down and one heavily damaged by Chinese or Soviet interceptors.

21 Sept, 1938 – Major General Oscar Westover, Chief of the U. S. Army Air Corps, goes West at the Lockheed Air Terminal, Burbank, California, in the crash of a Northrop A-17AS. His mechanic, S/Sgt Samuel Hynes also dies in the crash.

Westover was one of only a few general officers to have earned the Distinguished Rifleman's Badge visible under his ribbons (Credit: USAF)

German aircraft at Freeman.The red Me 108B is reputed to have been Herman Göring's

The A-17 served in 10 countries during WWII.

22 Sept, 1945 – Operation Lusty (**LU**ftwaffe **S**ecret **T**echnolog**Y**) was the USAAF effort to collect and evaluate German aeronautical technology during and after World War II. Many of the German and some Japanese and Italian aircraft were tested and stored at Freeman Field, Indiana, the government's Foreign Aircraft Evaluation Center. Warehouses were filled with captured aviation equipment of all sorts.

At one point, the 71st Special Operations Squadron were based there and trained in the Fairchild AC-119K Stinger gunship.

The Stinger carried 4 7.62 mm miniguns and 2 M61 Vulcan 20 mm cannons.

On Sept. 22, 1945, Lt William V. Haynes was on final approach in a Focke-Wulf Fw 190 when his aircraft pitched up, rolled over and crashed killing Haynes. The cause was unclear but previously, another FW 190 had crashed under similar conditions due to a faulty horizontal trim switch.

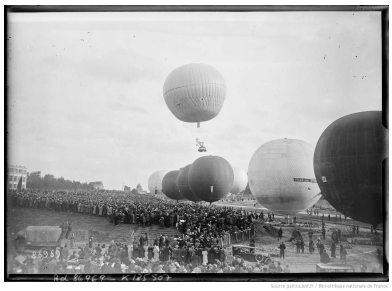
Fw-190 at Freeman

71st SOS calling card

During CAP's National Emergency Service School, Freeman was one of the "target" sites for mission air crew training. The air crews sortie out of Columbus Airport, formerly Atterbury-Bakalar Army Air Field. The Editor and his observer, Capt John Lawless located a beacon at Freeman during a training flight in 2006.

Columbus Airport now. The original control tower stands in the middle and at least one CAP 182 is visible on the far left.

23 Sept. 1923 – Disaster at the annual Gordon Bennett International Balloon Race. 1st Lts Robert Olmsted and John Shoptaw depart Brussels in the U.S. Army Balloon D-6. They collide with the Belgian balloon *Ville de Bruxelles* on launch, damaging it and causing it to withdraw from the race.

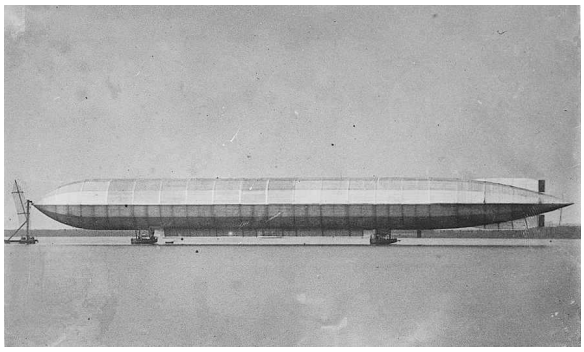


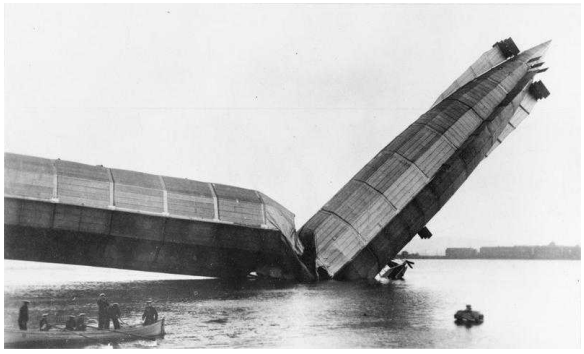
S-6 lifting off with Ville de Bruxelles visible in foreground.
Credit: Bibliothèque Nationale de France

Over Nistelrode, Netherlands, the balloons enter a region of thunderstorm activity. Lightning strikes the S-6. Olmsted is killed instantly and Shoptaw is killed in the fall. The Swiss entry, *Génève,* is also struck and burns, killing both crewmen. Then, lightning strikes the Spanish balloon, Polar, which burns. One of the Spaniards dies and the second breaks both legs when he leaps to safety.

24 Sept., 1911 – The Royal Navy's first rigid airship, *HMA Hermione,* nicknamed *Mayfly* breaks in half.

The Sequence Leading to the Disaster
Removal From Hangar-Moored-Sundered



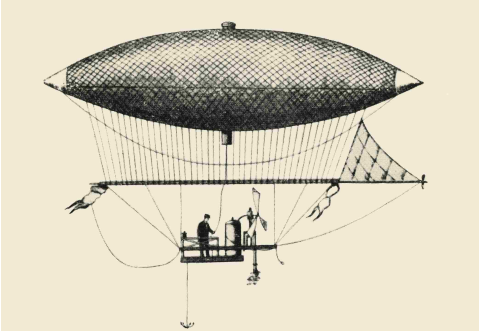


Earlier, *Mayfly* had been found too heavy and was modified by removal of its external keel. Given the slenderness ratio of the airship and the torques it might encounter this was a mistake. As the crew were attempting to remove it from its floating hangar, someone failed to remove the lines which tethered the bow. The after car tangled with a buoy and a squall struck, breaking the airship in half.

On the same date in 1852, an English engineer, Henri Giffard makes a 17 mile journey, Paris to

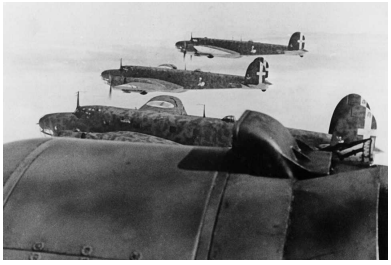
Élancourt, in a steam-powered dirigible of his own design.

This is the first passenger-carrying dirigible. Thet hree horse power engine mixed the combustion gases with the exhaust steam and ejected via a vertical downward pointing exhaust pipe to reduce the chance of sparks rising and igniting the hydrogen gas bag.



(Credit: Getty)

25 Sept., 1940 – A special unit, the Corpo Aereo Italiano (Italian Air Corps) (CAI) arrive in Belgium to participate in the Battle of Britain. When the fighters arrive later, Mussolini has committed some 200 aircraft to strike the British Isles.



The Fiat Br.20 Cicogna (Stork) was an effective bomber and equal to the best light bombers in the RAF.

Fiat CR.42 Falco (Falcon)

The legendary test pilot Winkle Brown, charged with evaluating captured enemy aircraft for the RAF reported that the Falco was "remarkably fast" for a biplane but had "marginal stability which is the mark of a good fighter…brilliantly maneuverable, an acrobatic gem, but under-gunned and very vulnerable to enemy fire"

The Fiat G.50 Freccia (Arrow) was slow, short ranged, had a limited endurance and suffered from an open cockpit.

There is some dispute about the effectiveness of the Italian contribution. The Italian aircraft were obsolescent and sortied against cities other than London. The bomber force flew 97 sorties, 77 at night, losing three aircraft. CAI fighters flew 954 sorties, 113 of which were bomber escort missions.

WHEN ROCKET WAS THE R-WORD

One definition of the word “jet” is “an energetic stream of fluid such as water or a gas discharged through a narrow opening generally called a nozzle and is now commonly used to describe a common turbine engine used in aircraft as in “jet planes.”

Turbines depend upon an atmospheric source of oxygen. However, a rocket carries its own oxidizer on board as a dry chemical such as gunpowder or a liquid, frequently liquid oxygen. So how can one account for the following uses of the term "jet" as in JATO (jet assisted take off) or Jet Propulsion Laboratory (JPL) whose main interests are in rocketry or Aerojet Rocketdyne whose current production engines are all rockets and whose past production only included a single air breathing ramjet.

As it turns out, rockets and “rocket scientists” once had an unsavory reputation. The general public, and scientists, academics and investors regarded those who developed rockets as somewhat cuckoo, simpletons or scatterbrains, devoting their

resources to a dubious objective.

For example, *The New York Times*, which for over a century carried its motto, *"All the news that's fit to print"* on its masthead printed the following on January 13th , 1920.

> *That professor Goddard, with his 'chair' in Clark College and the countenancing of the Smithsonian Institution [from which Goddard held a grant to research rocket flight], does not know the relation of action to reaction, and of the need to have something better than a vacuum against which to react -- to say that would be absurd. Of course he only seems to lack the knowledge ladled out daily in high schools.*

The Guggenheim Aeronautical Laboratory at the California Institute of Technology (GALCIT) was specializing in high speed flight in the mid-1930, but many of its engineers and professionals would raise eyebrows at the mention of eccentrics developing rockets and their one group of rocket experimentalists, the so-called "Suicide Club," was exiled from the campus and sent to the distant *Arroyo Seco* to carry out their experiments. Consequently, the pioneers who founded the JPL eschewed the term "rocket" in favor of a more respectable term "jet."

CAP ART

Maj. Ron Finger is a freelance illustrator and member of Civil Air Patrol's Minnesota Wing. He is CAP's national artist and one of his goals is to create a painting of every plane flown by CAP.

CAP Flying Boat Hulls

Grumman Widgeon

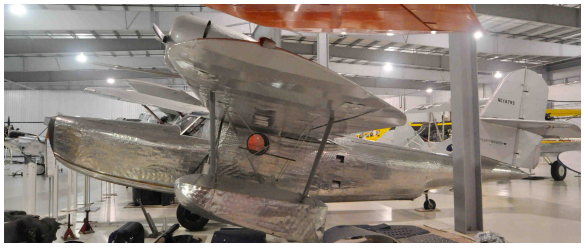
The aircraft pictured is probably a G-44. The G-44A was a post-war production.

CAP Capt. Johnny Haggins and Major Wynant Farr depth-charged a U-boat and were credited with a kill except that post-war research could not verify the claim and at best, the submarine was damaged given the sighting of an oil slick.

Fleetwings Sea Bird

This aircraft is the sole prototype and sole survivor of the six Sea Birds manufactured. It was constructed from spot-welded stainless steel. Howard Hughes flew it at one time.

F-401 was once part of Greg Herricks incredible collection of classic aircraft, Golden Wings in Blaine, Minnesota. The collection was put up for sale in 2015 and the FAA shows that F-401 is currently registered to an owner in Texas.



F-104 at Golden Wings

Sikorsky S-39

The aircraft is an improved version of the S-39A of which only 21 were built. The aircraft pictured is on display in the New England Air Museum.

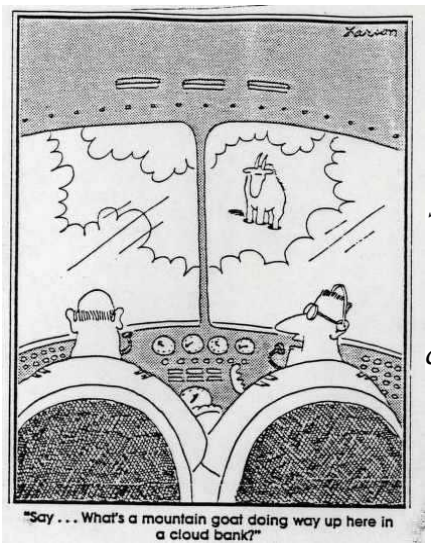
S-39 at NEAM

Officers from CAP's Coastal Patrol Base No.2, Rehoboth Beach, Maj Hugh Sharp and 1st Lt. Eddie Edwards performed an heroic rescue of the survivor of a ditched CAP aircraft on July 2, 1942 in this vedry same S-39. Swells were 8-10 feet and the aircraft lost a pontoon and could not takeoff. They had to make an overnight taxi to land while Edwards hung onto a wing to keep the aircraft level. Both were awarded Air Medals by President Franklin D. Roosevelt.

A TIME TO FROLIC

Always laugh when you can. It is cheap medicine.

George Gordon Byron



From the surrealistic pen of Gary Larsen and the legendary comic strip, The Far Side.

The stealthy Lockheed F-117 Nighthawk on display on Celebrity Row at the Davis-Monthan 309th Aerospace Maintenance and Regeneration Group in Arizona.

BA Concordes gathering to sniff the back of a freshly built one before deciding if they let it into their group. If rejected, it has to go to Air France.

Take off with a flight of your childhood fantasies as you live them again with Bill Watterson's Calvin and Hobbes.