



Missions for
America

Semper vigilans!

Semper volans!

Publication of the Thames River Composite
Squadron
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Civil Air Patrol

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22 January, 2019

SQUADRON CALENDAR

29 JAN-TRCS Meeting
05 FEB-TRCS Meeting-Staff
09 FEB-Ground Branch Director Course
10 FEB-Mission Safety Officer Course
12 FEB-TRCS Meeting-Commander's Call
19 FEB-TRCS Meeting-Pratt and Whitney Tour
22 FEB-TRCS Meeting
23-24 FEB-ICS300 Course & ICS400 Course
26 FEB-TRCS Meeting
05 FEB-TRCS Meeting-Staff
12 FEB-TRCS Meeting-Commander's Call
19 FEB-TRCS Meeting
26 FEB-TRCS Meeting
16 MAR-CTWG SAREX
29-31 MAR-Cadet Competition-Camp Niantic06
APR-CTWG SAREX
17-19 MAY-USAF Evaluation of CTWG
10-17 AUG-CTWG Encampment



The closer the bird is to the surface of the water, the firmer and more inelastic is the uplift of the rising air. The bird appears to almost feel the surface with the tip of its weather wing.

*Lawrence Hargrave
Engineer, Astronomer
Inventor of the Box Kite*
(photo credit: Museum of Applied Arts-Sydney)

CADET MEETING 22 January, 2019

C/2dLt Christopher Munzner transferred command of the cadet unit to C/2dLt Ryan Schantz.



(Photo Credit: Lt Jennifer Thornell)

1stLt Michael Kopcienski presented the mandated safety briefing about cold weather dangers and methods to mitigate them.

Lt Col Stephen Rocketto discussed the best way to learn material needed to pass cadet aerospace education courses. He demonstrated a methodology involving directions provided by the “learning outcomes” section of *Aerospace Dimensions Two, Aircraft Systems*.

The topics about engine operations, engine types, pressure, and flight and engine controls and instruments were enriched by a series of computer imagery, instruments and models pertaining to the learning outcomes, demonstrations, and hands-on activities.

SENIOR MEETING

22 January, 2019

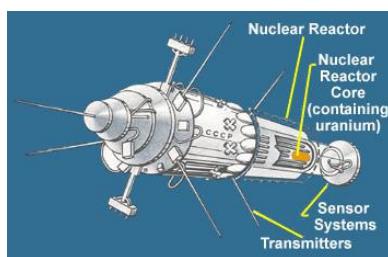
1st Lt Adam Spreceace briefed the senior membership on the operation plan for the upcoming ice patrol, aerial photography and the method to upload photographs.

AEROSPACE HISTORY AND CHRONOLOGY

23 Jan., 1948–First flight of the De Havilland Australia DHA-3 Drover, a small tri-motor transport based on the De Havilland DH-104 Dove. Howard Gatty's Fiji Airlines (see last issue) acquired four of them from QANTAS min 1954.

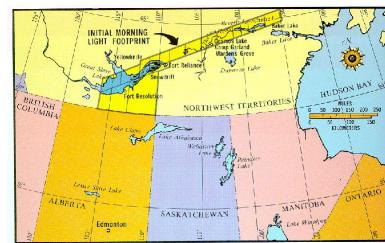


24 Jan., 1978– Kosmos 954, a Soviet reconnaissance satellite malfunctioned on re-entry.



(Credit: US Department of Energy)

Its nuclear reactor broke up and scattered a 370 mile long field of Uranium-235 particles over Canada's Northwest Territories.



(Credit: Natural Resources Canada)

Canada billed the Soviet Union six million dollars for the clean-up and the Soviets paid half. They may not be capitalists but they sure know how to bargain.

25 Jan., 1926– First flight of the Stinson Detroiter. The first 26 were built as biplanes and the remainder, about 100, were monoplanes. The SM-DX1 was the first aircraft to be powered by a diesel engine. The engine was a collaboration between the Packard Motor Company and Hermann Dorner.

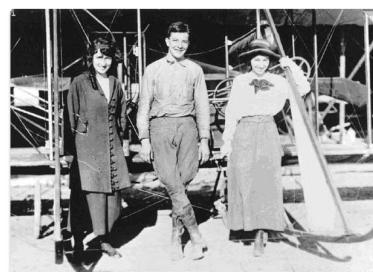


The aircraft was on display at the Golden Wings Museum, Anoka, Minnesota.

26 Jan. 1932 – Edward Anderson 'Eddie' Stinson, Jr. goes West when the Stinson Model R which he was demonstrating crashes while attempting an emergency landing in Kalamazoo, Michigan.

At the time of his crash, he was the world's most experienced pilot with 16,000 hours in his logbook.

The Stinson family were pioneers in aviation.



Katherine, Eddie, and Majorie Stinson

Katherine, his older sister was the fourth woman in the United States to earn a pilot's certificate (1912). A year later she partnered with her mother Ora and formed the Stinson Aviation Company which sold aircraft and flew exhibitions.



Katherine, known as the "Flying School Girl"

Her sister Marjorie attended the Wright School, soloed, and a week later received her pilot certificate (1914).



Marjorie, the "Flying School Marm."

The sisters then taught their brother, Jack, how to fly. However Eddie had to take flying lessons from others. The sisters considered him undisciplined and frowned on his heavy drinking.

After learning to fly, Eddie teamed with Jack and opened up the Stinson Aeroplane Company in Dayton, home of aviation contrary to what the Connecticut State Legislature claims.

World War I found the ladies running a flight school in San Antonio and with Eddie as their mechanic and Mother Stinson as the business

manager. Marjorie who instructed Canadian cadets became known as the "Flying Schoolmarm." All the Stinson's continued in aviation after the "War to End All Wars."

Katherine continued to fly exhibitions, established records and was the first woman to perform a loop, fly at night and fly in Japan and China.

Marjorie's career followed a similar pattern of Flight instruction, exhibition flying, and record setting. The Postmaster General approved her appointment as the first female airmail pilot.

Eddie went on to work as a test pilot for Stout Aircraft before forming a syndicate with Jack and establishing Stinson Aircraft in Detroit, Michigan. The company survived Eddie's death and produced a line of aircraft into the 1950s.

Stinsons were adapted for use by the Civil Air Patrol in World War II. A Model 10 in CAP war colors is on display at the New England Air Museum.



The aircraft represents a Stinson 10 based at Coastal Patrol Base 3, Latana, Florida. The aircraft carried the original factory paint but bore CAP WWII insignia. Note that the insignia does not have the red propeller, consistent with the deletion of the red circle within the star which had been carried by US military aircraft.

27 Jan., 1929 - The U.S. Navy stages a training exercise, Fleet Problem IX, in the Pacific Ocean. The scenario pits the Battle Fleet and the aircraft carrier *USS Saratoga* against the Scouting Fleet which includes the *USS Lexington*, *Saratoga's* sister. The Scouting Fleet's mission was to protect the Panama Canal.



Saratoga's sister, USS Enterprise, had an horizontal stripe on the funnel to help returning aviators avoid the embarrassment of landing on the wrong ship.

In a daring tactical maneuver, Rear Admiral Joseph Reeves detached the *Saratoga* with a light escort and sent it in a wide sweep west and south which placed it in a position to launch a dawn aircraft attack against the Panama Canal.

The exercise was the first test of a carrier task force and suggested the potential of naval aircraft as a force multiplier and importance as a first strike weapon. No doubt, the Imperial Japanese Navy took note.



Aircraft on USS Saratoga's flight deck preparing for launch. Planes in the foreground are Boeing F3B-1 fighters. In the background are fifteen Martin T4M-1 torpedo planes.

(Photo Credits: Naval Historical Foundation, Washington, D.C. Collection of Admiral William V. Pratt, U.S. Naval History and Heritage Command)

The *Saratoga* and her sister ship, the *Lexington*, were originally planned to be battlecruisers but limits on capital ships imposed by an international naval treaty resulted in the conversion of the two partially completed battle cruiser hulls into aircraft carriers. She served with distinction throughout World War II.

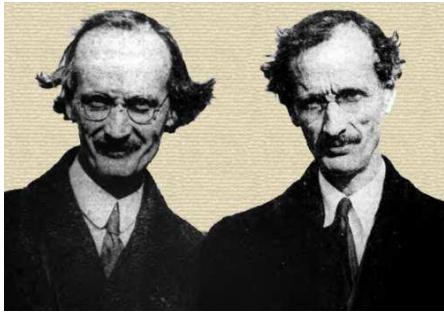
Her final assignment was as a target in Operation Crossroads, atomic bomb tests held at Bikini Atoll to determine the effect of nuclear bombs on warships. *Saratoga* survived Test Able, an airburst, with relatively minor damage. Test Baker, July 25, 1946, was an underwater detonation. 21 kilotons, 400 yards away from *Saratoga*. The hull was severely damaged and the *Saratoga* sank. She is now a popular site for the visits of SCUBA divers.



*A diver investigates one of the five inch gun turrets. A drawing of the *Saratoga*'s resting on the bottom of the lagoon is superimposed on the photograph. Note that the funnel is missing, blown off by the explosion. (Credit: Jan Kocian)*

28 Jan., 1963 – Jean Felix Piccard goes West. Piccard was part of the most talented Swiss family since the Bernoullis.

His identical twin brother, August Piccard, not only pioneered stratospheric balloon flight and cosmic ray research with Jean, but also built the first bathyscaphe which pioneered deep ocean exploration. After all, from an engineering point of view, both balloons and submarines are pressure vessels.



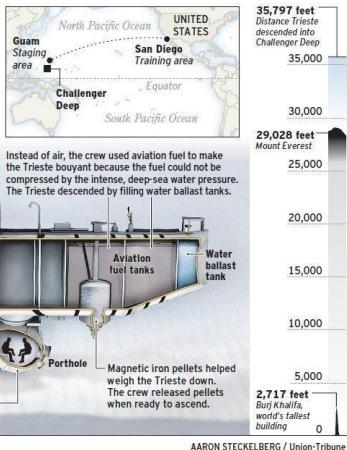
August and Jean Piccard (Credit: International Photo News Service)

Don Piccard, Jean's son, organized the first ballooning club in the United States and was instrumental in forming the national organization. His company developed plastic and mylar balloons. In 1963, he and Ed Yost were the first to cross the English Channel in a hot air balloon.

Jacques, August's son, collaborated with his father and continued their work, improving deep sea submersibles. In 1958, Jacques and Lt. Don Walsh, USN, descended 35,800 feet and reached the bottom of the Marianas Trench, the deepest place in the ocean.

A historic dive revisited

Fifty years ago, a two-person crew from San Diego reached the bottom of Challenger Deep, a section of the Marianas Trench nearly 7 miles deep. The dive was made possible by a bathyscaphe, a deep-sea submersible, named the Trieste.



SOURCE: U.S. Navy

Jacques, his wife Jeanette Ridlon (also an identical twin) and Otto Winzen worked together and developed the first of the polyethylene balloons and cluster balloons used for high altitude research.

Jeanette was the first woman to fly in the stratosphere and the first woman ordained as an Episcopal priest.



Jacques and Jeanette in the gondola of a stratospheric balloon, circa 1935.

Jacques son, Bertrand and Brian Jones made the first successful balloon circumnavigation of the earth in the Breitling Orbiter Three. Bertrand was also a principal in the organization of Solar Impulse which made the first round-the-world solar powered flight.



According to the Editor's Trekkie friend, Gene Roddenberry named Jean-Luc Picard after Jean Felix Piccard and according to some, Jean-Luc is a descendent of Jean Felix.

After unscrambling the family line and some of the many achievements of the Piccards, the Editor needed to relax so he ordered "Tea, Earl Grey, Hot!"



29 Jan., 1850 – Birth of Lawrence Hargrave, English born Australian engineer, explorer, astronomer, inventor and aeronautical pioneer. Hargraves best known contribution to aviation is the box kite., some of which are large enough to carry a man.



Hargrave (seated) and Swain, an assistant setting up a man-lift kite train in 1894.

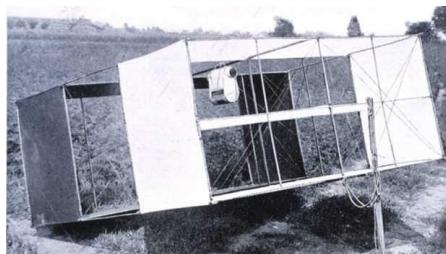
Hargrave flew powered kites but he never found an engine with sufficient power to develop sufficient power to lift a man.

His kite design was extremely useful in the early days of meteorology. trains of box kites were used by the weather services to collect upper air data and were flown as high as 8,000 feet. The absolute world record for altitude for kites was set in 1919 by a German meteorological station in Lindenberg, Germany, 31,955 feet!



Weathermen launch at Hargrave box kite near where Reagan National Airport is now located.

(Credit: National Oceanic and Atmospheric Administration)



Kite Instrumented with Marvin Metrograph

In 1901, the first radio message was transmitted

across the Atlantic from Cornwall to St. Johns, Newfoundland. The Newfoundland antenna was carried aloft by a kite.

30 Jan., 1965—First flight of Aerial Distributors DW-1. This was an unusual design of a "crop duster" in that it had two engines, one for flight power, a 360 HP Lycoming, and a second, mounted directly underneath the first.



(Photo Credit: Bill Larkin, Aerial Distributors)

The second engine, a 108 HP Lycoming, supplied compressed air which was used to blow dry chemicals from a hopper over the flaps and through orifices mounted along the trailing edge of the wing. The second engine could also be throttled to provide lifts control.

Testing of the sole prototype was supported by NASA and two universities but market conditions eventually brought an end to the experiment.

31 Jan., 1951 – Captain Charles Blair flies Excalibur III, a P-51C Mustang non-stop from New York to London to study the jet stream. Blair's flight travels 3,478 mile in 7 hr 48 m for an average speed of 446 mph, a piston engine record.



Blair, Navy trained, had a wide-ranging career and flew for the Navy, Air Force, Air Transport Command, four airlines, and as a Grumman test pilot. In 1959, Blair, a Brigadier General, led the first jet flight from England to Alaska over the North Pole.

In 1963, he formed Antilles Air Boats based in the Virgin Islands and providing air service among the Caribbean islands.

In 1978, Blair died when a Grumman Goose which he was piloting crashed on a flight from St. Croix to St. Thomas.

Three of the aircraft which he owned are now preserved in museums. The Mustang hangs in the National Air and Space Museum's Udvar-Hazy Annex. A Short S.25 Mk. IV Sandringham flying boat may be viewed at the Southampton Hall of Aviation. The actress Maureen O'Hara, his fourth wife, donated his Sikorsky VS-44 flying boat to the Navy which has transferred it to the New England Air Museum.



*Short Sunderland
and Sikorsky VS-44*

In fact, there were seven if you count the five variants.

The X-1A was to fly at Mach 2 and 90,000 feet. Chuck Yeager set new altitude and speed records of 74,700 feet and Mach 2.33. Then the aircraft spun out of control due to a condition called inertial coupling. It took Yeager 50,000 feet to regain control. The aircraft was transferred to NACA and blew up while it was being prepared for launch.



(Photo Credit: USAF)

The X-1B was scheduled for thermal research. It flew 27 times before fuel tank cracks led to its grounding. It was the first aircraft fitted with reaction rockets for directional control.



ERRATA

Capt Ed Miller writes that there were more than two Bell X-1 aircraft built.

The third X-1, designated X-1-3 made on glide test flown by test pilot Joe Cannon. The next flight was a one hour captive flight. After landing, the aircraft exploded while being defueled. Both the X-1-3 and the mothership were destroyed and Cannon suffered serious burns.

The X-1C was planned to test armaments. The project was cancelled the aircraft was still in the mock-up stage.

*Artist Conception
of X-1C*



The X-1D program was research on heat transfer. It used a new low pressure fuel system and bigger fuel tanks which gave it greater endurance. Its first flight, unpowered, but the nose gear collapsed on landing. After repairs, while being prepared for launch from the EB-50A mothership, it was jettisoned when a fuel tank exploded.



Bell X-1D (Photo Credit: USAF)

The cause of the explosions were due to an interaction between chemically treated leather gaskets which became unstable when subjected to mechanical shock in a liquid oxygen atmosphere.

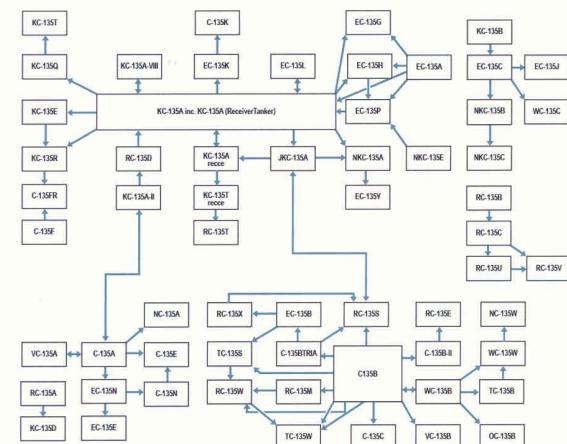
The faults in the system were eliminated and the Bell X-1-2 was rebuilt and became the X-1E. The cockpit canopy was changed and an ejection seat installed. After the 26th flight, cracks were found in the internal structure and the X-1E was retired.



The X-1E is on display at the the NASA Armstrong Flight Research Center, Edwards AFB, California.

The Extended C-135 Family

Lt Col Carl Stidsen supplied a “family tree” for the C-135 and it is printed below. Enlarge to see details.



*NKC-135A
Airborne
Laser Lab*



*VC-135B Air
Force One for
Eisenhower
and Kennedy*



EC-135E Apollo/Range Instrumentation Aircraft