

*Missions for America
Semper vigilans!*



Semper volans!

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25 JUL-TRCS Meeting
29 JUL-05 Aug-CTWG Encampment
01 AUG-TRCS Staff Meeting
08 AUG-Commander's Call
15 AUG-TRCS Meeting
19 AUG-Connecticut Aviation Day-GON
22 AUG-TRCS Meeting
26 AUG-TRCS Water Survival
29 AUG-TRCS Meeting
09 SEP-Touch-A-Truck-East Lyme
15-17 SEP-CTWG Conference
21-24 SEP-Durham Fair Parking Detail
23 SEP-Scarecrow Festival-Preston

CADET MEETING

18 July, 2023

The cadets attending encampment were briefed on what equipment and clothing is required at encampment.

Visiting cadet Tupas, AZWG, was promoted to cadet airman first class and received the Hap Arnold Award.

SENIOR MEETING

18 July, 2023

Maj Keith Neilson delivered a lesson on surviving a ditching. The briefing consisted of two parts. First, overwater flight practices to include altitudes and wind estimates to allow for engine-out glides to suitable landing spots and crew responsibilities regarding emergency radio transmissions, checklist readings and preparations of the cabin for ditching. Finally, an evaluation of sea-surface conditions and selection of direction of landing dependent upon winds and swells.

The second part covered personal equipment: dress, flotation devices and emergency equipment carried on the person such as signaling devices.

A round-robin discussion flowed Maj Neilson's presentation.

MISSIONS

Maj Farley and Capt Otrin flew a Long Island Sound Patrol on Saturday. Weather conditions hampered the flight with marginal visual flight conditions prevalent over parts of the patrol area.

The USCG reported a person in the water in Peconic Bay but Gabreski Airport was reporting instrument flight conditions so the request to investigate was declined.

THE KAI TAK CHECKBOARD AND JFK'S CARNARSIE APPROACH

An article in the last edition of The Coastwatcher recollected the legendary “Checkerboard Approach” at Hong Kong's former Kai Tak Airport. It involved an instrument guided approach which converted to a visual approach using lead-in lights followed by a steep 47 degree right turn and short final initiated when a red and white checkerboard sign was sighted on a hillside.

Some of our readers may have flown a similar approach at John F. Kennedy International Airport. It is known informally as the Canarsie Approach or officially the Expressway Visual Rnwy 13L/R. The weather minimums are 3 miles visibility and a 2,500 foot ceiling.

The approach plate shows the details and there are good ground references along the way: the old Floyd Bennett Field, shoreline and Belt Parkway and the Aqueduct Race Track. The approach is initiated using instrument guidance established by the Canarsie VOR. The Editor has flown this approach in Skywagons and Cherokee Sixes and the best part of it is the series of sequenced flashing lead-in lights on the roofs of the building in Brooklyn. When they are followed, a relatively gently right turn to landing follows to 12L or 13R..



Years ago, I was having a conversation with Tony Vallillo, a CTWG pilot and retired from American Airlines. He has written an article about the history of the approach and flying it in the 707s which is worth reading. It may be found at

<https://airfactsjournal.com/2016/07/visual-instrument-approach-this-both/>

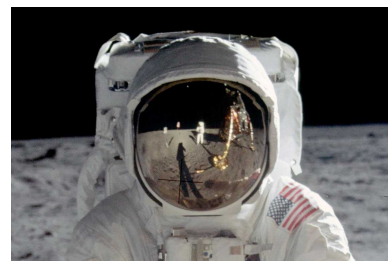
AEROSPACE CHRONOLOGY

July 19, 1943 – Soviet Air Forces fighter pilot Yekaterina Budanova Goes West.



She was on an escort mission when she engaged three BF 109s over Luhansk Oblast. Reports indicate that she shot down one of the Germans and damaged a second but her Yak-1 was hit and caught fire. Budanova managed a crash landing but was found dead in the wreckage. Accounts vary but Budanova is credited with 11 aerial victories.

July 20, 1969 – Apollo 11 lands on the moon.



There are almost no photographs of Neil Armstrong on the moon since he was taking most of the pictures. In the photo above, he is visible in the faceplate of Buzz Aldrin's visor as part of Eagle, earth, the lunar lander and the American flag.

July 21, 1921 – United States Army Air Service Martin NBS-1 bombers sink the decommissioned German battleship *Ostfriesland* in the Atlantic Ocean off the Virginia Capes after Billy Mitchell urges bombing trials to show the power of aircraft to sink major warships. The sinking of the stationary ship, sans damage control parties buttresses claims by Mitchell that the Army Air Service can assume the role of coast protection for the United States and that the age of the battleship was over.



The former SMS Ostfriesland Awash after the close hits of the bombs opened its seams.

The Navy justifiably protested how the test was conducted. Mitchell was vindicated on December 10th, 1941 when the battleship *HMS Prince of Wales* and the battle cruiser *HMS Repulse* were sunk by land based bombers and torpedo planes of the Imperial Japanese Navy off the coast of Malaya.



Repulse, Prince of Wales and Mitsubishi G3M Nell torpedo bombers.

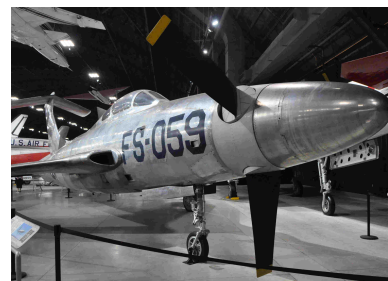
July 22, 1955 – First flight of the Republic XF-84H “Thunderscreech.” An Allison turboprop which developed almost 6,000 hp was centrally

mounted on an F-84 Thunderjet airframe and drove a pair of counter-rotating propellers by means of a long drive shaft. To compensate for the torque developed, a dorsal fin was fitted and the horizontal stabilizers were “T-mounted” to keep them clear of the propwash.



The Thunderscreech was the first aircraft to carry an extendable/retractable ram air turbine. The turbine is used to provide power for electrical and hydraulic systems in cases of catastrophic failure.

The 12 foot in diameter constant speed propellers created a serious problem. The tips were moving at around Mach 1.3 and created what is now believed to be the noisiest aircraft ever built. The incredible noise made men sick, interfered with delicate measuring instruments and it was said the plane could be heard 12 miles away. The authorities at Edwards AFB ordered the tests moved out onto the desert to mitigate the damage to equipment and harm to men.



The “Thunderstruck” only accumulated 6 hours and 40 minutes of flying time in 12 flights. Engine failures, vibration, and longitudinal instability led the first test pilot, Lin Hendrix, to tell the project head that “You aren't big enough and there aren't enough of you to get me in that thing again” Further test flights were conducted by Hank Beard and 10 of the 11 resulted in forced landings. One of the two prototypes survive and is

on display at the National Museum of the USAF.

July 23, 1917 – Major Benjamin D. Foulois, one of the great figures of early American aviation, is appointed commanding officer of the Airplane Division of the United States Signal Corps.



Maj Foulois at about the time of his appointment.

Benjamin Delahauf Foulois was born on December 9, 1879 in the small town of Washington, Connecticut. Benny decided to drop out of school and become a plumber but seeking adventure, changed his mind at at the age of 17 bicycled 90 miles to New York and enlisted in the Army. Being underage, he enrolled under this brother's name and served in the Spanish-American War, the Philippine Insurrection, Pershing's Punitive Expedition and the War to End All Wars.

The U.S. Signal Corps controlled army aviation and Foulois was the first army dirigible pilot and after instruction for three hours and two minutes in fixed wing flight time which included no landings and no solo, was sent to Texas with instructions to “teach yourself to fly.” In March of 1910, he logged his first four flights in Texas which included his first solo landing and take-off and his first crash. The crash almost tossed him out of the plane so he devised a “seat belt,” the first ever. His career zoomed and in 1931, he was a major general and Chief of the U.S. Army Air Corps.

At that point in his career, his tendency to take bold risks got him into political hot water with the Roosevelt administration. In 1934, the “Air Mail Scandal” led the government to cancel the commercial air mail contracts, he was asked if the

Army was capable of taking over the air mail.

Seeing the opportunity for a new mission, the money to run it and an expansion of the air service, he bought into the idea. Unfortunately, the Army did not have the suitable aircraft or experienced pilots to handle the new assignment and disaster after disaster followed with plenty of bad publicity. Benny was the fall guy and his career had reached its end with retirement in 1935.

July 24, 1946 – The first live flight test of the Martin-Baker ejection-seat system took place when Bernard Lynch ejected from a Gloster “Meteor Mk.III” jet.



Mr. Lynch was a fitter in the Martin-Baker factory and an extremely brave man.



July 25, 1909 – Louis Blériot becomes the first pilot to fly a heavier-than-air machine across the English Channel and wins the £1,000 prize offered by London's Daily Mail newspaper. He flies his Blériot Type XI from Calais to Dover in 37 minutes at an average speed of about 45 mph.

Infographic titled '37 kilomètres en 37 minutes à 58 km/h' detailing Louis Blériot's flight. It includes a map of the route from Calais to Dover, technical specifications of the aircraft (e.g., 125m length, 300kg weight), and a timeline of preparatory flights from October 1908 to July 1909. Key details include the use of bicycle wheels and the lack of an engine, with the pilot relying on a propeller.

FEATURE ARTICLE

A Brief History of Signal Intelligence

by
Shawn Terry

Part II

Part I discussed the early history of radio, types of radio transmissions, their vulnerabilities to interception and code breaking as art and science.

At the start of the Cold War, aircraft has had developed range, endurance and lifting capacity to make the useful to carry the electronic monitoring equipment that were also introduced in World War II. Aircraft were equipped with the special equipment to eavesdrop on communication channels and record and analyze the emissions of radar systems. And crew members were trained in both languages and electronic technology to take advantage of these developments.

But aircraft have limitations. The ferret flights had moderate flight endurance and had to remain in international air space to avoid interception by eastern bloc aircraft. The Gary Powers/U-2 shoot-down, a photo-intelligence flight in April, 1960 is the best remembered incident but ten years earlier, April, 1950, the Soviets shot down Consolidated PB4Y-2 Privateer, the *Turbulent Turtle* over the Baltic Ocean with the loss of all 10 crewmen.



The Turbulent Turtle in Gibraltar. The tail code is that of VP-26, based at Port Lyautey, French Morocco.

The ferrets, electronic intelligence aircraft, were

surveying the Soviet radar defenses, both early warning and target acquisition systems. One tactic was to cruise in international airspace along the periphery of the enemy borders collecting signals from their defensive radar. If the radar was not in use, a tactic was to make a feint towards the border which might cause the Soviets to light up their systems and allow the gathering of data such as locations, frequencies, power outputs, pulse repetition rates for example. Sometimes interceptors were launched and ground controller instructions would be recorded. And sometimes, this led to unfortunate results. During the cold war, a few dozen ferret aircraft were lost and approximately 150 American were killed.

Satellites are even more effective and pose no risk of life. For example, the joint U.S-Australian intercept station at Pine Gap near Alice Springs dedicated to collecting communications intercepted by satellites covers the entire Asia-Pacific region and the USAF maintains a similar and very large installation at RAF Menwith Hills in Great Britain.



The U.S. Air Force, Navy and Army, maintain a fleet of signal intelligence aircraft.



*Beech RU-12N
Huron at Groton.*

A typical Huron might carry the Guard Rail System used to intercept, identify, classify and determine the source and location of hostile communications and radio signals. Data collected is transmitted via satellite to a processing center which is then converted, if possible, to actionable

intelligence to a tactical customer.



Chain Home transmitters on the left and receivers on the right.

The RB-47H, a cold war SIGINT ship, carried a crew of three intercept technicians in a pressurized capsule in the bomb bay. One was shot down on July 1, 1960 near Holy Nose Cape in the Barents Sea with the capture of two crewmen and the loss of four.

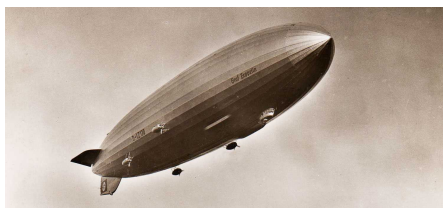


A Beech RU-8D Twin Bonanza on display at National Vigilance Park, NSA, Fort Meade.

The RU-8D was used to by the Army in Vietnam to intercept enemy radio transmissions to locate their troop concentrations and movements and locating enemy transmitters.

Spy Balloons

As for balloons being used for signal intelligence the USA, UK, French, Germany, and Soviets have used these to a limited extent in the 20th century. They have much the same advantages as the use of aircraft in that VHF transmissions can be intercepted from over a hundred miles away and relayed via satellite links to base stations. In the fall of 1939, just before the German's invaded Poland, they used the dirigible *Graf Zeppelin II* (LZ-130) in an attempt to determine details about the British Chain Home radar network.



The LZ-130 was an improved Hindenburg class airship.

Over forty stations provided high level and low level coverage during the critical days of the Battle of Britain.



The Germans cruised along the eastern coast of England and at one even point transgressed British airspace but failed to gather any meaningful data. The British actually tracked the *Graf* with some accuracy and at one point intercepted a position report which they transmitted and noticed that it was incorrect.

The British were using a higher frequency than the Germans thought possible so the receivers on the *Graf Zeppelin II* were not listening to the right wavelengths.

Project Genetrix was a 1950s United States photographic balloon spy program which hundreds of photo-reconnaissance balloons over Eastern Europe, the Soviet Union and China with lamentable results. The balloons were unguided and cloud cover, instrument failure and the failure to recover almost all of the balloons was both a diplomatic embarrassment and a technology failure. Aircraft became the instrument of choice until satellite technology developed sufficiently to provide operational data.

The only known use in this century was the recent series of Chinese spy balloons that I believe had an entirely different and uniquely 21st century purpose which I will discuss in a follow-up article "What the Chinese Spy Balloon was Doing?"