Missions for America
Semper vigilans!

Semper volans!

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02 MAY-TRCS Meeting Staff Meeting
09 MAY-TRCS Meeting Commander's Call
16 MAY-TRCS Meeting
23 MAY-TRCS Meeting
27 MAY-CTWG Rifle Training #3
30 MAY-TRCS Meeting
29 JUL-06 Aug-CTWG Encampment
19 AUG-Connecticut Aviation Day-GON
15-17 SEP-CTWG Conference
27 SEP-Scarecrow Festival-Preston

COMBINED MEETING

25 April, 2023
submitted by
C/SSgt Lucas Dellacono, Cadet PAO Officer

Cadet and Senior members met in concert.

C/1stLt Fago opened the meeting with a two-part safety briefing. The first part was about the precautions necessary to prevent brush and woodland fires. The second part of the presentation discussed heat stress, its signs and mitigations.

Lt Col Rocketto followed with with a an illustrated discourse about the Battle of the Atlantic, the longest campaign in World War II. Topics discussed included the importance of airpower, convoy tactics, logistics, scientific and technological innovation, unified command and control, and industrial strength.

FEATURE ARTICLE

What Goes Around, Comes Around

A Cold War U.S. Spy Balloon Campaign

Project Genatrix

WS-119L

by

Stephen M. Rocketto

The Second Oldest Profession

Moses sent them to spy out the land of Canaan and said to them, "Go up into the Negeb and go up into the hill country...

Numbers 13:17

The use of aircraft to obtain information about the capabilities of enemy troops and equipment can be traced back to the Italo-Turkish War of 1911-12

when the Italians reconnoitered Turkish troops in Libya and took aerial photographs.

In the recent past, the passage of a Chinese spy balloon over sensitive areas of the United States has raised questions about the purpose of the incursion.

The Chinese balloon photographed from a U-2 (Credit: Department of Defense)

However, the furor incited by the 24/7 media cycle fades quickly as does concerns about Chinese theft of intellectual property, the use of slave labor to produce goods for sale by respected corporations and possible genocide agains their Moslem Uyghur population. But it it worth noting a much forgotten episode when the United States used balloon technology to spy on our Communist adversaries.

During the Cold War, the United States ran an active covert aerial spying operation over and near Soviet, Warsaw Pact and Chinese controlled airspace. Gary Francis Powers and the U-2 shoot-down is the best and likely only incident that most now remember but more than 40 U.S. aircraft were downed and around 200 airmen killed while performing intelligence gathering missions.

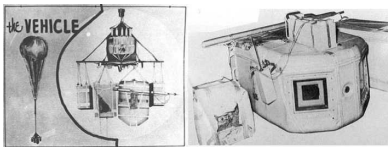
The closed society of Stalin's empire precluded easy access to the military disposition, industrial centers, and transportation networks of the Soviet Union. Aerial methods were demanded in order to prepare for the possibility of a nuclear war. Photography and electronic were brought into play to develop target folders of airbases, radar networks, and strategic industrial targets.

Before, the U-2 and spy satellites, aircraft were vulnerable to standard defensive responses do the idea of using high altitude balloons which could fly above the reach of the contemporary interceptors and missiles held promise. A lot of experience had been gathered during manned and unmanned scientific balloon missions such as Skyhook and the WWII Japanese Fu-Go balloon attacks on North America provided insight into the use of the jet stream to navigate the balloons.

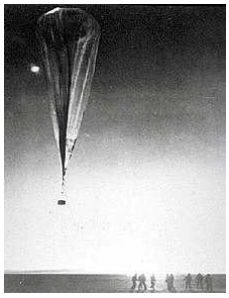
Consequently, the Pentagon initiated Project Genatrix, Weapons System-119L (WS-119L). The plan was to deploy a launch the balloons from western Europe and allow the prevailing winds to carry them over the Warsaw Pact, Soviet Union and China. The balloons would be each carry two cameras set to take day-time photographs and float at an altitude too high to attack. The Air Force planned to use 2,500 balloons, expected 75% to cross the Soviet Union and calculated that 40% (750) would be recovered, perhaps containing 1.4 million photographs. But as Robert Burns wrote:

The best laid schemes o' Mice an' Men Gang aft agley,
An' lea'e us nought but grief an' pain,
For promis'd joy!

During the four weeks between January 10 and February 6, 1956, 512 or 516 (accounts vary) were launched from bases in Norway, Scotland, Germany and Turkey.



A typical launch and instrument package



Only 54 were recovered and of those, usable photographs were recovered from 31 or 32 (accounts vary). The coverage amounted to about 10% of the land mass of the Soviet Union. As it turns out, many of the balloons were shot down. After sun set, the gases cooled and the balloons descended to lower altitude. This was quickly noted by the Soviet anti-aircraft teams and interceptors were launched at sunrise when the balloons were still floating within the altitude capabilities of the MiGs. Results were unimpressive. The notable exception was a nuclear refining facility in Siberia at a newly constructed town called Dodonovo.

Naturally, there was a political tempest with a

passel of protests filed by the Soviet Ministry of Foreign Affairs. Many of the balloons and cameras were captured and a massive display of them was arranged for the foreign press.Within days, President Eisenhower shut down Genatrix.

The intelligence gathering aspects of the U.S. balloon programs could be counted on as a failure but the spin-offs were harvested and found value in future military and scientific applications. The materials used to produce envelopes for high altitude ballooning was perfected. High-altitude winds were better understood. Follow up programs led to the development of a new generation of high acuity panoramic cameras (the HYAC-1) used in the U-2, SR-71 and the early reconnaissance satellites.

HYAC-1 Camera

Some unexpected consequences. The Russians analyzed the recovered film, managed to reproduce its resistance to cold and radiation, produced it and use it in their space program. And it was discovered that the steel bar that secured the envelope, cameras, and ballasting equipment happened, by chance, to measure 2.99 feet (91 cm which was the same wavelength as the new Soviet TOKEN early warning radar. NATO radar operators could clearly see the pulse from the TOKEN system and this provided useful information about the operating modes and the locations of the transmitters. But the most notorious unexpected consequence was the spate of reports about flying saucers which balloon sightings generated all over the world for decades.

Of special interest is the method used to recover the instrument packages carried by the successful balloons. They were tracked over the Pacific Ocean and specially outfitted Fairchild C-119K Flying Boxcar aircraft tracked and rendezvoused with them.

The aircraft which recovered Discover 14, the first successful film retrieval from space is now at the Museum of the U.S. Air Force.

A radio signal released the payload and the airplane crew snagged it in flight with a trailing a looped hook cable trapeze-like apparatus. If the aircraft missed, the payload would land in the sea to be picked up by the Navy. A salt-plug installed in the capsule and dissolve in two days causing flooding and sinking.

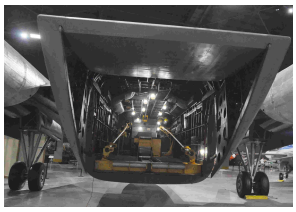
A successful retrieval of a re-entered camera and film pod. *(Credit: National Reconnaissance Office)*

The first of the U.S. photographic satellites were the 38 launches of the Discover series, putatively scientific tests of maneuvering systems, re-entry experiments, and biological studies but actually a cover for the Corona project carrying the Key-Hole camera systems. It was a replacement for the U-2 and tasked with gathering intelligence on the Soviet long-range bombers and missiles as well as producing topographic information for the map-makers.

The first successful retrieval of a film payload

occurred on August 18, 1960 when a C-119K from the dedicated recovery unit, the 456th Troop Carrier Wing. There were three squadrons with detachments in Japan, Okinawa, the Aleutians, and Alaska. The made 44 successful recoveries and were earned the Air Force Outstanding Unit Award.

Their C-119K were specially equipped with the winches and trapezes and outfitted with a beavertail rear door that opened horizontally rather than the port-starboard split on the normal Flying Boxcar.



The "beaver-tail' hatch in both closed and open position.

For those readers who wish to pursue some of the other spy balloon efforts and wander through espionage's "wilderness of mirrors, search for the following key-words: Skyhook, Mogul, Gopher, Moby Dick, and WS-461L.

All the business of war, and indeed all the business of life, is to endeavor to find out what you don't know by what you do; that's what I called 'guess what was at the other side of the hill'.

Duke of Wellington

HIGHLIGHTS
EUROPEAN AIR MUSEUM TOUR

The Editor recently visited four aero museums in Germany and Belgium. All four housed vast displays of scientific and industrial products and processes including automobiles, computers, ships, railroad locomotives and electrical apparatus to name just a few. Given limited time, aircraft and aviation displays were the prime subjects viewed. Here is one highlight from each of of the four museums.

Technik Museum Speyer (Germany)

Buran

Buran meaning "Blizzard" is the class of space planes. Fourteen articles were built, some used for atmospheric flight or ground tests. Only one flew a space mission. It was an unmanned flight launched from the Baikonur Cosmodrome on November 15, 1989. Buran made two orbits under remote control and landed safely. In 2002, it was destroyed when its storage hangar collapsed.

The vehicle on display at Speyer is OK-GLI and was used for 35 test flights. For atmospheric testing, it could take-off under its own power and be used by the cosmonauts for approach and landing practice.

Outwardly, Buran and NASA's orbiters have similar characteristics. This is to be expected because they were designed to perform the same missions. One big difference is that the NASA orbiter is boosted into orbit by a combination of two solid boosters and its integral three liquid propellant engines. Buran uses a attached block of eight liquid hydrogen/liquid oxygen engines.

Technik Museum Sinsheim (Germany)

Tupolev Tu-144D

The Tu-144 was the first supersonic airliner to fly, two months before the Aérospatiale/BAC Concorde. Its NATO reporting name is "Charger" but is is often referred to as the "Concordski." Sixteen were manufactured and only flew 55 scheduled passenger flights. Like the Concorde, they were uneconomical due to limited seating and high fuel prices and maintenance expenses.

Aircraft like the Concorde and Concordski, built for political and propaganda purposes are not always the best investment in resources and funding and although there are always benefits, there is no free lunch and other more worthwhile projects will suffer.

However, the Tu-144 served to train Buran crews and was modified to the Tu-144LL Flying Laboratory which NASA used over a two year period to conduct research into high speed flight.

Note that the Tu-144 has a droop-nose like the Concorde but also sports two small retractable flight controls behind the cockpit windows. These are called moustache canards and are equipped with fixed double-slotted leading edge slats and retractable double slotted flaps. The canards are used to improve stability at low landing speeds but the retract during normal cruise.

Interestingly, the Tu-144 had no reverse thrust capabilities so it was fitted with a drag chute system used during landings. And even more interestingly, it is equipped with ejection seats for the cockpit crew.

The Deutsches Technikmuseum, Berlin

Fieseler F156C-3 Storch (Stork)

The Storch was designed for short take-off and landing performance on rudimentary fields. A fixed slat was fixed to the entire leading edges of the wings and a the trailing edges featuring fowler flaps and ailerons split 50/50 with oversized trim tabs. The ailerons droop when the flaps extend past 20 degrees. It stalls at around 25 knots and with a 10 knot wind can lift off and land inside of 100 yards.

The aircraft at the Berlin museum carries marking of the Swedish Air Force but over 30 countries utilized this aircraft from its first flight in 1936. It was produced post-war until 1965 with nearly 3,000 manufactured.

Royal Museum of the Armed Forces and of Military History, Brussels, Belgium

De Havilland of Canada DHC-3 Otter

This ski-equipped Otter attracted my attention whenI noted the "00-" Belgium national prefix on the registration number. The bloc of numbers was reserved for the national airline, Sabena and its affiliates.

It turns out that the aircraft was used to support the short-term and rather half-hearted Antarctic research during the 1958 International Geophysical Year. *The Centre National Belge de Recherches Polaires* purchased the aircraft in Canada and shipped it to King Baudoin Base named "Jean Loodts" and flew for two years. It was then returned to Belgium after funding problems closed the station, stored for nine years, rebuilt and put on exhibit.

AEROSPACE CHRONOLOGY FOR THE WEEK

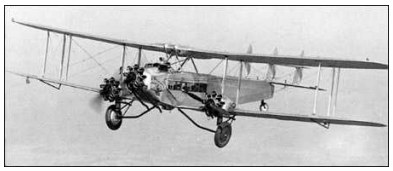
April 26, 1984 – United States Air Force Lt. Gen. Robert M. Bond, Vice Commander of Air Force Systems Command, Goes West in a high-speed ejection from a Mikoyan-Gurevich MiG-23 of the 4477th Test and Evaluation Squadron, Groom Lake, Nevada.

Lt. Gen.Bond and a Flogger *(Credit: af.mil)*

The aircraft is claimed to be a Lockheed F-117A Nighthawk but the unusual rank of the pilot creates suspicions and eventually leads to leakage of knowledge about the covert Constant Peg program in which the Air Force accumulated a collection of Soviet aircraft and was using them in an adversary role to train U.S. pilots to learn the maneuvering strengths of their own aircraft and the weaknesses of the Communist equipment. The actual aircraft which crashed was a MiG-23 Flogger which used the cover designation, YF-113.

April 27, 1932 – Imperial Airways commences a regular passenger service to Cape Town. The airline was established to add faster links to the British colonial empire which was mostly served by relatively slow merchant and passenger liners. After World War I ended, a consortium of British airlines formed to engage in international traffic in completion on the continent against strong French and German airlines. During that time, survey flights, flown notably by Alan Cobham researched the routes to India, Australia and South Africa.

At the end of 1931, mail service had been extended as far as Cape Town with a de Havilland DH.66 Hercules delivering the Christmas mail. A month later, Imperial opened a regular weekly mail service between London's Croyden Airport and Cape Town and passenger service commenced on April 27th. The trip took 10 days.



Then and Now!

Today, British Airways makes the trip in a Boeing 777 in just under 11 hours. The cost in 1931 was about £100 or $10,000 but today, the tariff is about $1,000!

April 28, 1967 – After production and financial problems developed due to investment in the DC-8 and the struggle to expand facilities for production of the DC-9 series and A-4 Skyhawks, Douglas merged with McDonnell, flush with cash from the extraordinarily successful F-4 Phantom II. Although Douglas was the much larger corporation, McDonnell took the controlling interest under the name McDonnell-Douglas Corporation.

Canny Scots Donald W. Douglas) with the DC-7, the last to bear the "DC" prefix and James S. McDonnell *(Credit: Boeing)* *with the 5000th F-4.*

April 29, 1954 – Convair, once Consolidated-Vultee becomes a division of General Dynamics.

General Dynamics was in strong financial position because of its highly successful World War II submarine building activities centered on the Electric Boat Company in Groton, Connecticut. The management was eager to diversify in order to level the peaks and valleys of military procurements. In 1946, they had scooped up Canadair from the Canadian government at a bargain price.

The merged companies became a powerhouse in the military-industrial-political complex producing a highly successful line of interceptors, the Convair F-102 an F-106, B-36, Atlas ICBM, the less successful supersonic B-58s and FB-111 Aardvarks and the unprofitable Convair 880 and 990 airliners.

Atlas Launch and Royal Australian Air Force FB-111 fuel dump and burn.

Their final achievement was winning the lucrative contract for the light weight air superiority fighter, the F-16 produced under the General Dynamics name.

April 30, 1032 – A new international code for air traffic communications is implemented based upon series of three letters starting with "Q." The QAA–QNZ code range includes phrases used in aviation. Others are reserved for maritime communications and the Amateur Radio Relay League has devised it own dictionary prefixed by "QN."

(Ed. Note: The Editor needed to learn some of these codes. For example, when taking off and landing, the altimeters were set so that they indicated height above the ground, the QFE setting. While cruising, QNH was used, the measured or forecast pressure which indicated altitude above sea level). While flying above 18,000 feet (flight levels), the altimeter is set to the standard atmospheric pressure of 29.92 inHg denominated as QNE.)

Altimeter set to QFE, 28 Nov., 2010, Bar Yehuda Airport, Israel (Can you read the altitude?)

May 1, 1949 – The Air Arm, Hong Kong Defence Force is established.

The history of the 99 year lease which allowed the British Empire to control Hong Kong Island and its immediate environs as a trade center also involved maintenance of a defense force. Much of the time, the regular British military establishment garrisoned the colony but a local defense force was also incorporated. This unit, the Hong Kong Regiment included an air arm. Between 1949 and 1970 it was known as the Hong Kong Auxiliary Air Force. Its early inventory included three different marks of Spitfires and a small collection of Taylorcraft-Auster light planes.

The force was disbanded in 1993 and reformed as the Government Flying Service with primary duties in search and rescue, police support, and air ambulance flights.

The principal air assets are nearly a dozen helicopters, Sikorsky S-70s and S-76s and the Aérospatiale SA-360.

The fixed wing fleet consists of a Cessna 404, Britten-Norman BN-2 and a pair of Beech 200C King Airs.

May 2, 1968 – Edwin Charles "Ted" Parsons Goes West. Some men cannot hold a job. Some hold many jobs successfully. Ted Parsons lived in interesting times and made the most of the opportunities.

He learned to fly in 1912 after meeting Glenn Curtiss and contracted to fly a Curtiss aircraft from El Paso to Pancho Villa and train some pilots. During that time he held the rank of capitán and got paid $200 per month in gold. He became disillusioned with the Vilista's after Pancho raided Columbus, New Mexico and headed north.

War had broken out in Europe and in 1916, he lied about his qualifications and sailed for St. Nazaire as an “assistant veterinarian” tending 2,200 horses and “and spent the voyage ankle deep in horse effluent.”

In France, he joined an ambulance unit and managed to finagle his way into the French Foreign Legion's Aéronautique Militaire. The United States would not enter the war *for* another year but Parsons flew with the *Escadrille Lafayette* and the *Groupe de Cigogne*s ending the war as an Ace credited with eight confirmed victories. His decorations included the Legion of Honor, the Croix de Guerre with eight palms, the Belgian Croix de Guerre, the Medaille Militaire and the Croix de Leopold.

During the postwar period, he worked for three years as an investigator for the Bureau of Investigation, the predecessor of the FBI and as a private eye but discovered literary talents which he soon turned to profit. Writing pulp fiction and magazine articles, he gained employment as a aviation technical advisor in Hollywood and worked on *Wings*, the first film to win an Academy Award and Howard Hughes's epic, *Hell's Angels.*

In 1934, Parsons joined the Naval Reserve and signed up for active duty after Pearl Harbor. His WWII service involved assignments to aircraft carriers and tenders and landing ships during which time he participated in the Battle for Leyte Gulf and Okinawa and left the service at war's end as a rear admiral.

The Chinese wish that you might “live in interesting times” and Ted Parsons took full advantage of the times in which he lived.