Missions for America
Semper vigilans!
Semper volans!

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Lt Col Stephen Rocketto Editor
1st Lt David Pineau, Publisher
Maj Roy Bourque, Paparazzo
Capt Edward Miller, Features
Maj Scott Farley, Roving Correspondent

CURRENT EVENT

New Crop of Electronic Intelligence Aircraft

Most of the new generation used for airborne early warning, command and control and tactical battle management aircraft are conversions of airliners or business jets. This has been done in the past. The Air Force and Navy used Lockheed Constellations during the Cold War and the Vietnam unpleasantness.

A Lockheed EC-121K Warning Star converted from an L-1049 Super Constellation. A height finding radar is housed in the conning-like structure on top and and a search radar is housed in the ventral dome.

Currently the USAF operates the Boeing E-3G Sentry, a Boeing 707 conversion, to provide all-weather surveillance, communications and command, and control duties.

The bi-pod pylon mounted in 30 foot diameter rotating dome, "rotodome," houses two antennae, a primary radar system and an identification-friend-or-foe system.

However, replacements are being sought by many air forces. Australia Japan and Turkey, are flying the Boeing E-7 Wedgetail based on the Boeing 737NG airframe. The USAF plans to replace the E-3 fleet and purchase 27 Wedgetails and has issued a 1.2 billion dollar contract for development cost.

RAAF E-7A Wedgetail. It is equipped with a fixed active electronically scanned array radar antenna. *(Credit: William R. Lewis)*

Aircraft which fulfill similar functions are the SAAB Global Eye which is converted from a Bombardier Global 6000 and is operated by the United Arab Emirates and the Israeli Israel Aircraft Industries/ELTA-2805 which uses a Gulfstream G550 airframe and is flown by Israel and Singapore. Note that all of the aircraft display a wide range of other antennae, most visible as small fins on the dorsal and ventral sides of the fuselages.

SAAB Global Eye bearing Swedish registration.

(Credit: SAAB)

IAF version is named "Oron"

(Credit: Owen65)

Generally, melding of an airframe and the electronic suite is a cooperative enterprise between airframe and electronics companies. Most of the new designs use a fixed active electronically scanned array radar antenna rather the the rotating antenna common on older designs.

Hybrid-electric Aircraft Demonstrated to Army, Air Force, Navy and Marines

Electra.aero, Inc., of Manassas, Virginia has demonstrated its EL-2 Goldfinch prototype at Marine Corps Air Facility Quantico and Felker Army Airfield and Joint Base Langley-Eustis. The Goldfinch is a hybrid-electric aircraft with remarkable STOL performance. A collaboration of Electra's founder, John Langford, and Massachusetts Institute of Technology researchers led by Prof. John Hansman and Prof. Mark Drela envisioned affordable and performance features better than other contemporary electric designs.

The criteria which the USAF seeks is defined by what is termed, Agile Combat Employment (ACE) which "When applied correctly, ACE complicates the enemy's targeting process, creates political and operational dilemmas for the enemy, and creates flexibility for friendly forces."

The Goldfinch's energy source is hybrid-electric and uses both an internal combustion engine and an electric motor for propulsion. It incorporates a blown-lift system in which air is blown through nozzles to shape the airflow over the rear edge of the wing, directing the flow downward which increases the lift coefficient.

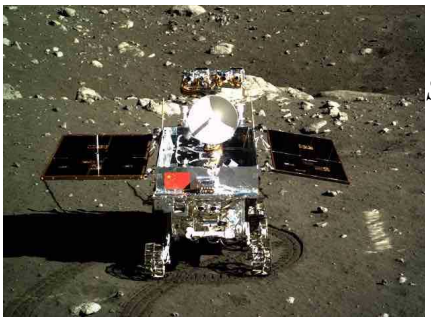
(Credit: Electra)

Test pilot Cody Allee demonstrated takeoffs and landings on an austere grass fields with no need for ground support equipment. Allee needed 150 feet for lift-off and landing and performed 300 foot diameter turns at low speed. These are performance figures which will allow operations from damaged runways and carry out resupply, tactical insertions and medivac operations.

The company holds a $30 million U.S. Air Force funding award and letters of intent from thirty potential customers for a nine passenger production version

Chinese Lunar Rover Sets Record

The Chinese Lunar Rover, Yutu-2 (Jade Rabbit-2) soft-landed on the far side of the moon on January 3rd, 2019 with a planned three month mission. She is still active today exceeding the 321 day record set by the Soviet Union's Lunokhod I in 1970-71



The Jade Rabbit, not Sichuan Rabbit, bears the flag of the People's Republic of China.

(Credit:Chinese Academy of Sciences)

Two quirky comments by *The Coastwatcher*. The name is English is pronounced as "you-two," same as the Lockheed reconnaissance aircraft employed by the USAF and the CIA.

An interesting historical note is the the rover landed in the von Kármán crater, named after Theodore von Kármán, a physicist and engineer who made extremely important contributions to aerospace and was affiliated with the Guggenheim Aeronautical Laboratories at California Institute of Technology and a founder of NASA's Jet Propulsion Laboratory.

One of von Kármán's students was Tsien Hsue-Chen who was persecuted by the U.S Government during Senator Joseph McCarthy's 1950's "Red Scare" and was forced to return to Communist China where he became a central figure in the development of the Chinese rocket program and is known as "the Father of Chinese Rocketry." Lesson learned: Be careful whom you deport."

Yutu-2 carries an impressive assemblage of investigative tools. Among them are a panoramic camera capable of acquiring 3D images, a Visible and Near-Infrared Imaging Spectrometer to analyze the chemical composition of minerals and gases and a ground penetrating radar capable of probing to a depth of 100 meters.

Cheap Space Tourism Tickets to Edge of Space

Space Perspectives of Titusville, Florida is offering a relatively cheap trip for a two hour balloon ride to 100,000 feet. Technically this is not the edge of space. There is some controversy about the height above sea level at which space begins. The *Fédération aéronautique internationale*, keeper of aerospace records' states that space begins at the Kármán line set at 330,000 feet mean sea level. USAF, USN USMC and the FAA set the altitude at 264,000 feet. Eight aviators earned astronaut wings flying the North American X-15.

Space Perspectives has just completed an unmanned proving flight on September 15th using a balloon lofted capsule named *Excelsior* honoring Joe Kittinger's pioneering high altitude balloon flights in the 1950s.

Launch from the mother ship, MV Voyager

(All photo credits for the companies)

Parachute descent of the unmanned test capsule.

Excelsior can carry eight, seven of which Space Perspectives calls Space Explorers and the Captain. It has a fully stocked bar and will offer the traditional champagne toasts at the maximum altitude and provide what Space Perspectives call an inflight "culinary experience. Of course the two necessities, a toilet which they call a spa and Wifi are installed. Could one fly without them?

Passenger accommodations.The all-important spa is visible in the rear.

The flight will last for approximately six hours: a two hours ascent, holding at its apogee of 100,000 feet for two hours and two hours to descend. They brag that the flight is net carbon zero so you can do serious virtue signaling at your next cocktail party.

The balloon, *Spaceship Neptune*, when fully inflated will contain 18,000,000 cubic feet of hydrogen and at launch stand 700 feet tall, a bit shorter than the Eiffel Tower. The ocean recovery will be carried out by the specialized "marine spaceport" *MV Voyager*.

Ocean recovery of Excelsior

Mother ship, MV Voyager based at Port Canaveral

(Credits: Space Perspectives

Reservations are available for a 2025 flight with a deposit of $10,000 earnest money and a total cost of $125,00 dollars per seat. They specify USD so don't try to pawn off those Canadian or Australian dollars left over from you last trip up north or down under. Its time to cash in your 401(k).

For you big spenders, since the dissolution of the Soviet Union, the Russian rump has abandoned communism and adopted capitalism. The ground at Highgate Cemetery in North London must be shaking as Karl Marx rolls over in his tomb. Roscosmos, the Russian Federations equivalent of NASA offers a customized ISS Trip for 12 days on the International Space Station.The tariff runs at around 50-60 million dollars. They will not take the rubles left over when your grandpa escaped from the Czar of All the Russians or the Bolshie insurrection.

The Coastwatcher is not sure if the price is just for the flight but if it does not cover room and board NASA is ready to act as ISS innkeeper for $35,000 per diem.

Jeff Bozos is considering a 12 minute ride to the Kármán line on Blue Origin for between $200K to $300K. Maybe he will offer it on Amazon and if you have Prime you may get a discount. It should be free since free shipping is offered.

Richard Branson's Virgin Galactic offers a 90 minute ride to 295,000 feet for $450K. Unfortunately, his airline, Virgin Atlantic does not fly to Mojave Air and Spaceport so there is no hope that he will throw in a round-trip ticket to New Mexico.

Blue Origins passenger accommodations

(Credit: Blue Origins)

Virgin Galactic passenger accommodations and flight deck.

(Credit: Virgin Galactic)

The Last KC-10 Retired

After 44 years of service, the last of the Douglas KC-10 Extender aerial tanker and transport has been sent to the Davis Monthan's 309th Aerospace Maintenance and Regeneration Group. The aircraft is a derivative of the Douglas KC-10 airliner with which it has much commonality, a positive feature for obtaining spare parts. It carried about 60,000 gallons of fuel and was equipped with a boom and a probe and drogue transfer system, seated 75 passengers and lifted 175,000 pounds of cargo.

It has a special place for older CTWG cadets and seniors. In July of 2012, the Wing's Director of Aerospace Education arranged for an orientation flight on a KC-10 while it practiced aerial refueling. About four dozen members participate. The flight lasted around four hours. We left from McGuire AFB and the refueling exercises were carried out over northern New England. Cadet and officers took turns observing the refueling and the cockpit procedures. Upon return we flew over New London.

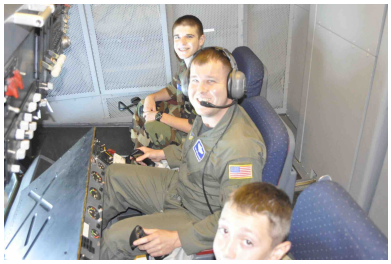
CTWG members in the cavernous fuselage.

A KC-10 at a airshow attended by CTWG. The Air Force did not want us to take pictures of the aircraft in which we flew.

Close encounters of the friendly kind. 250 tons of aircraft about 50 feet away. Note the fuel droplets on the window.

Lt Maye's uniform at the New England Air Museum

Two cadets and the boom operator in the control cab.



The Air Force museum at Robins AFB in Warner, Georgia has a cabinet display with a number of CAP artifacts.

Cadet observing cockpit procedures.

MORE CAP EXHIBITS AT MUSEUMS

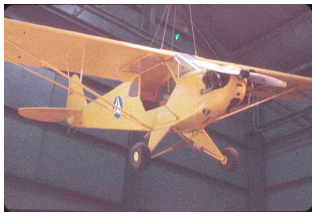
The last edition of *The Coastwatcher*, 18.09, carried an article about the new CAP exhibit at the Museum of the USAF which celebrates N9344L and its mission surveying the World Trade Center after terrorists destroyed it. It turns out that also CAP is honored in a number of different museums.

Connecticut's own New England Air Museum has three different exhibits. Two aircraft, a Sikorsky S-39 and a Stinson 10 and a display honoring 2nd Lt. Andy Maye, courier pilot killed with mechanic George Mansel when their Taylorcraft BL-65 crashed on a flight from Bradley to Grenier Field, Manchester, New Hampshire.

S-39 and Stinson 10

The Pima Air and Space Museum, Tucson, Arizona, displays a Stinson L-5B (Credit: Pimaair.org)

And the Museum of the USAF also has another CAP aircraft hanging in one of the hangars and a bench installed for the 50th anniversary of CAP.



LONG ISLAND SOUND PATROL REPORT

submitted by Capt Adam Sprecace

Capt Adam Sprecace is CTWG scheduler for the Long Island Sound Patrol (LISP). The Patrol assists the U.S. Coast Guard, Sector Long Island Sound by observing recreational boating and commercial shipping, assessing hazards and if necessary, assisting in search and rescue missions.

The season runs from May to September and CTWG flew 40 LISP missions, some what down for 55 in 2023 and 56 in 2022 and CTWG logged 104 flight hours.

Maj Farley and Capt Sprecace were mission pilots on four sorties each. Capt Otrin was observer on four of the mission, Sprecace, Maj Noniewicz, Capt Pineau, Lts Madore, Karia, Gauthier and Capt David Kania from Meriden sat in the right seat once each. A Coast Guard officer, Lt._Davison from Sector Long Island. Sprecace also flew once with Capt William Tortora from Hartford.

Two of Maj Farley's flights were scrubbed due to aircraft issues and in the final accounting Thames River Composite Squadron were LISP participants nine times, 23% of the total patrols.

AEROSPACE HISTORY AND CHRONOLOGY

Oct. 1, 1950 – *Flyvevåbnet*, the Royal Danish Air Force (RDAF) is re-established.

The newly constituted Danish air force was equipped with LFIXc Spitfires

.F-16 with livery honoring the 800th anniversary of the Danish flag.

The Danes now operate Vipers and are building a force of 27 F-35A Raptors. The plans are to decommission the F-16A/B fleet and sell 24 to Argentina and donate 19 to the Ukraine.

(Credit; Lockeed-Martin)

October 2, 1918 — The Kettering Bug, a pilotless airplane developed by Charles F. Kettering makes its first successful unmanned flight test, albeit for only nine seconds.

A launching system using a rail and a falling counterweight as devised by Orville Wright to accelerate the Bug to flying speed.

Stabilization and guidance was provided by a preset system utilizing pneumatics and electrical circuitry. The course and range to the target was calculated and the engine was shut off at a predetermined time, The wings were shed and the Bug, carrying 180 pounds of explosives, plunged to earth. A similar system was adopted to launch German V-1 buzz bombs on London and Antwerp.

After some successful testing, Dayton-Wright Airplane company built about 50 Bugs but the War to End All Wars ended before they could be deployed. Funding was withdrawn at the turn of the decade and the program was abandoned.

The remarkable Charles Kettering held 186 patents and was associated with DuPont, DELCO and General Motors. He is credited with major credits for the development of the automobile self starter, the electric cash register, leaded gasoline, freon refrigerant, DUCO enamels and lacquers and the two stroke diesel engine.

Charles Kettering

Oct. 3, 1963 – The DH 106 Comet aircraft were retired from Royal Canadian Air Force service. The RCAF was the first military organization to operate jet transports, acquiring two Comet 1As which were modified to the 1XB configuration.

An RCAF Comet displays its clean lines
(Credit: Canadian Forces Joint Imagery Centre)

Oct. 4, 1958 – A BOAC de Havilland Comet 4 made the first commercial transatlantic crossing by a jet airliner, from London Heathrow Airport to New York's Idlewild Airport (JFK) with a one hour refueling stop at Gander, Newfoundland.

G-APDB on the ramp at Idlewild.

A second comet departed from New York the same day bound for London. Aided by the prevailing westerly winds and not needing a refueling stop, she reached London in a record-breaking time of 6 hours and 11 minutes, some four hours quicker than her sister ship.

Oct. 5, 1930 – The British dirigible R101 crashed in France on its maiden flight to India. Great Britain had developed a plan known as the Imperial Airship Scheme which would link the far flung colonies and dominions by regular airship service.

R 101 rides the mast at Cardington.

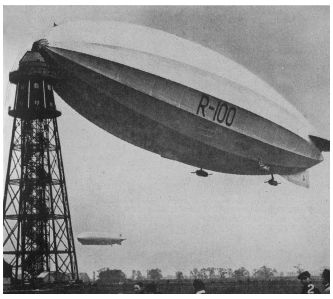
Two airship were constructed to implement the plan, one by the government, the R 101 and one by private industry, a subsidy of Vickers Aircraft, the R 100.

Accidents can generally be traced to a chain of circumstances. In the case of the R101, many unique features were incorporated into its design but it suffered from stability problems and was overweight. Fixes were performed but the political importance of the India flight overrode engineering prudence and a Certificate of Airworthiness was issued to the R100 captain on the day of departure!

The R101 departed Cardington on October 4th with 54 VIP passengers and crew aboard and crossed the French coast around midnight. She flew into deteriorating weather condition and two hours later, failing to maintain height, struck the ground and burned. Forty eight of the souls on board perished. Investigations laid blame on a tear in the forward gas bags causing a loss of lift which engine power could not overcome.

The privately designed and constructed R100 had

been designed by a team led by iconic engineer Barnes Wallis who later used geodetic techniques to design the fuselage of the Wellington bomber and was responsible for the creation of the bouncing bomb used in the "dam Buster raids." The novelist Nevil Shute was the senior stress engineer.



R 100 moored. The airship in the background is the Graf Zeppelin, the most successful of all the commercial dirigibles.

The R100 cost about 2/3 that of the government R 101 and flew ten months earlier. On July 29, 1930, the R 100 departed on its first commercial flight, destination Montreal, Canada. She arrived 78 hours later where and stayed for 12 days, making a number of exhibition flights. The R100 returned to Cardington on 13 August after a 57 ½ hour flight assisted by the prevailing westerly winds.

After the R101 crashed and burned, the Air Ministry grounded the R100. Plans to use the R100 for testing were discarded and in 1931 the Air Ministry had the framework of the R100 crushed and sold for scrap, a shifty cover-up for an embarrassing political problem.

Oct. 6, 1944 – The Army Air Force cancelled the contract for the Fisher P-75 Eagle. The Eagle was designed by the Fisher Body Division of General Motors.

The last surviving Eagle is on display at the Air Force Museum. Note the counter-rotating propellers. The ventral air intakes for the center mounted engine are also visible.

The hope was to produce an interceptor with an extremely high rate of climb using the most powerful liquid cooled engine available. Later, military needs shifted and the Eagle's mission was changed to be a long range escort.

In war, no expense is spared and no idea deemed unworthy. The P-75 was a "Frankenstein" aircraft. To hasten the design process, the tail of the Douglas A-24 Banshee, the outer wing panels of the Curtiss P-40 and the undercarriage of a Vought F4U Corsair were used to reduce design costs.

The Allison engine was mid-mounted and designed to produce around 2,800 hp and drive a pair of co-axial counter-rotating propellers. Hindsight indicates that this particular engine and propeller arrangement would be nothing but trouble and so it was.

By the time the Eagle's many deficiencies were corrected, the AAF decided to reduce the number of aircraft types in the pipeline and go with reliable standards such as the long range Mustang and Lightning. The Eagle was relegated to use as an engine testbed and only 14 ever came off the production line.

Oct 7, 1963– First flight of the Learjet and the start of the business jet industry. The fertile mind of the eccentric genius Bill Lear, Sr. imagined a small fast jet that would fill a niche in the world of corporate flight departments.

Like the Frankenstein P-75 above, he decided to adapt the best features of a prototype Swiss ground attack aircraft to the design. Lear went to Switzerland, rounded up a core of American, British, and Swiss engineers and formed the Swiss American Aircraft Corporation (SAAC).

Flug-und Fahrzeugwerke Altenrhein had developed the FFA P-16 ground attack aircraft which was rejected in favor of the British built Hawker Hunter. Lear saw promise for both saving time and money if key features of the P-16 could be adopted into his vision of an executive jet.

The wing and basic fuselage design was adaptable and the new aircraft for the planned SAAC-23

Execujet

A Lear 23 and its P-16 Progenitor

Lear commenced construction in Switzerland. However, even though labor was cheaper, bureaucratic bramble bushes led to long delays so Lear moved the company to Wichita, Kansas and the company was renamed Lear Jet Corporation. The rest is history.

The second production Lear 23 is now on display at the National Air and Space Museum.

Oct 8, 1940 – Josef František, a Czech, goes West in an air crash. František flew with the Kościuszko Squadron, No. 303 (Polish) Fighter Squadron, Royal Air Force.

František and a Hawker Hurricane bearing the insignia of the 303 (Polish) Squadron. The Hurricane pictured is based at Duxford.

František seemed to have little regard for military discipline and his obstreperous conduct was only tolerated because of his brilliant airmanship. A pilot in the Czech Air Force, he fled when the Nazis occupied his homeland. František then trained with the Polish Air Force but when Germany conquered Poland, he fled to French territory and entered the *Armée de l'air*. When France fell he escaped to England where he enlisted in his fourth air force, the RAF and accounted for 17 German aircraft, making him the highest scoring non-British Ace in the Battle of Britain.

František's Four Air Forces!

The complement of RAF pilots who flew in the Battle of Britain was composed of 25% foreigners with the Poles and Czechs contributing the most, around 225 pilots. This number is comparable to the 25% of foreign sailors who served with the Royal Navy during the Napoleonic Wars.

As a side story, the squadron was named after Andrzej Tadeusz Bonawentura Kościuszko. Kościuszko served as a military engineer with the Continental Army during the American revolution. He is regarded as a national in his native Poland resisting Russian and Prussian rule. Lithuania and Belarus honor him for services in their wars against foreign oppressors.

Kościuszko is credited with the construction of the fortifications which contributed to the American victory at Saratoga. Thomas Jefferson wrote that "He is as pure a son of liberty as I have ever known."

A second intersection with American history occurred during the Polish-Soviet War of 1919-21. A unit, the Polish 7th Air Escadrille enlisted 21 American airmen and adopted the name Kościuszko Squadron in memory of his contributions to the American revolutionary cause.

Merian Cooper with the Kościuszko Squadron

Most famous of the American was Merian Cooper, a WWI pilot, better known for directing the movie *King Kong*. He was also the pilot of the plane which fired the fatal shots into Kong. But was this really what killed Kong? No!

Curtiss Falcons attack Kong. The are two place biplanes and the observer has twin Lewis guns on Scarf mounts. But what really killed Kong?

In the last scene of the movie a photographer states that "What does it matter? The airplanes got him." but Carl Denham, a character in the movie says "It wasn't the airplanes...it was beauty killed the beast."

Cooper re-upped for the Second World War, his third war. He worked as a logistics liaison for the Doolittle raid, helped set up The Hump Airlift, and was Chief of Staff for General Claire Chennault and flew in combat for the China Air Task Force. Cooper's final posting was Chief of Staff of the Fifth Air Force's Bomber Command. A witness to the Japanese surrender on the U.S.S. Missouri, he retired as a brigadier general.

Oct. 9, 1930 – Canadian pilot J. Erroll Dunsford Boyd and navigator Harry Connor, a U.S. Navy officer, depart Harbour Grace, Newfoundland for England. The next day they land on Tresco, Isles of Scilly, a British archipelago southwest of Land's End off Cornwall. After refueling, they proceeded the 300 miles to Croydon Airport, London. Boyd, the first Canadian to complete a transatlantic flight is hailed as the "Lindbergh of Canada" Interestingly, John Alcock, one of the two men who completed the first transatlantic crossing had been one of Boyd's flight instructors.

Standing with Boyd on the left are Harry Connor and Charles Levine.

The aircraft used by Boyd was a remarkable design by Giuseppe Bellanca. Bellanca was an aeronautical genius who designed the first monoplane with an enclosed cockpit and produced a line of aircraft whose high all-up weight performances making them outstanding freighters and bush planes. Bellanca also taught Congressman Fiorello LaGuardia, an important figure in the activation of the Civil Air Patrol, to fly.

The aircraft was a one-off designated WB-2. Bellanca had been hired by the Wright Aeronautical Corporation to design an aircraft to serve as a test bed for the new J-5 Whirlwind engine. The plane incorporated two unique features, a fuselage and struts with wing-like characteristics which provided additional lift.

The aerodynamic struts allowed the WB-2 to lift a heavier fuel load. performance.

Boyd had a remarkable career. He flew combat in World War I, and worked as a test pilot, airline pilot and bush pilot. He founded the Air Scouts of Canada, a progenitor of the Royal Canadian Air Cadets In 1941, in Hartford, he became a United States citizen. Boyd, a talented song writer, lived in New York and produced Broadway hits and pop music. He died in Sharon, Connecticut in 1960.

In 1938, Connor served as navigator for Howard Hughes when they set a new record for a round-the-world flight, beating Wiley Post's previous record by almost four days.

Clarence Chamberlain had the ambition to win the Orteig Prize offered for the first non-stop flight from New York to Paris. He secured use of the WB-2 and with Bert Acosta set a new endurance record of just over 51 hours which covered more than milage needed for the transatlantic journey. He was now confident that the WB-2 could make the New York-Paris flight.

Charles A. Levine, a millionaire who had made his fortune buying and selling World War I salvage purchased the WB-2. Levine had designs on the Orteig prize also. Charles Lindbergh, impressed by the aircraft's performance offered to buy it but Levine refused to sell. Levine, who also owned the Columbia Aircraft Corporation christened his new acquisition, *Miss Columbia*.

Levine then got involved in a legal dispute which led to a court injunction which legally grounded the WB-2. The delays allowed Lindbergh to acquire the Ryan NYP, *Spirit of St. Louis* and on May 20-21, 1927, Lindy flew the flight and claimed the prize.

His hopes dashed, Levine decided to attempt to set a long distance record, New York to Berlin. With Chamberlain at the controls and Levine as passenger, *Miss Columbia* departed Roosevelt Field, New York on June 4th, 1927. They ran into weather conditions which caused them to stray south of their planned course. By chance, the flew by the *RMS Mauritania* on its passage from Southampton to New York. Also by chance they had on board a copy of the New York Times which listed the sailing date of the liner.

In a slick piece of navigational legerdemain, Chamberlain calculated the position of the ship and corrected his heading. After crossing the German border, their low fuel state forced them to land near Eisleben, 3,911 miles and 42 hours 45 minutes from take-off. They had beat Lindbergh's record by 300 miles. After refueling, Miss Columbia flew the remaining 125 miles to Berlin.

Three years later, Boyd and Connor made their flight in *Miss Columbia*, now christened *Maple Leaf*. The WB-2 was now distinguished in two ways. First, she was the first plane to carry a transatlantic passenger. Second, she was the first plane to make the voyage twice.

Three years later, the WB-2 was hangared at Bellanca Field, New Castle, Delaware, one day before its transfer to the Smithsonian Institution. The hangar caught fire and the aircraft was destroyed.

Oct. 10, 1907 – Another early aeronautical pioneer and innovator was Robert Esnault-Pelterie, the inventor of the joy stick. (And where would modern computer gamers be without this concept?) Oct 10th is the anniversary of the first flight using a joy stick to control roll and pitch.

R.E.P.1 was the first aircraft to use a joy stick for control and was powered by a unique semi-radial engine designed by Esnault-Pelterie.
(Credit: PHGCOM)

But Esnault-Pelterie was not a “one-trick pony.” Along the way, he contributed to the development of all-metal airframes, cantilever wings, radial air-cooled engines, and tandem wheel landing gear. And he was an early visionary about space travel.

In 1927, he derived formulae for the energy needed to propel a rocket into space and in 1930 joined with Jean-Jacques Barré, conceived of ballistic missiles and starting experimenting with liquid propellants using gasoline and liquid oxygen. An experiment with tranitromethane, a highly unstable oxidizer went awry and Esnault-Pelterie lost four fingers of his right hand in the explosion.

In 1934 Esnault-Pelterie published *L'Astronautique* in which he considered interplanetary space travel and the use of radium as a power source.

RON FINGER-ILLUSTRATOR OF CAP HISTORY

Ron Finger, freelance illustrator, a 13-year veteran of the Minnesota Wing's Crow Wing Composite Squadron, is the Civil Air Patrol's National Artist and is producing a series of paintings of aircraft flown by CAP in its 80+ year history. He collaborates with CAP's national historian emeritus, Col. Frank Blazich Jr. and researches each aircraft painted.

Finger also contributes to the USAF Art Program. In 2023, he was honored for his work by the Minnesota Aviation Hall of Fame.

Like Robert Esnault-Pelterie, Finer is not a one-trick pony, take a look at his website at Red Pine, Inc. Fishermen might be particularly interested. If you want custom art, that is also available.

The artist at ease at his easel.

The Editor of *The Coastwatcher* now presents a selection of Finger's painting of aircraft types used or once used by CAP which he has flown. He would have illustrated them personally except his best artist efforts are the index finger fingerprints which he leaves on computer touchscreens.

The Editor soloed in the Cub in 1960 at the long gone Waterford Airport.

The Editor earned his private pilot certificate in the Cessna 150 at the long gone New Mexico State University Airport.

He piloted the C182 in Part 135 Air Taxi and Commercial Operation and at CAP Mission Pilot School.

Only one, as second pilot on a CAP repositioning flight.

Ferry Flight, Waterford to Jacksonville, Fl. Nav easy-just keep coast to starboard.

Night Cargo Training-Beech 18-Literally, a "fly-by-night operation.