



Missions for
America
Semper vigilans!
Semper volans!

The Coastwatcher

Publication of the Thames River Composite Squadron
Connecticut Wing
Civil Air Patrol

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SCHEDULE OF COMING EVENT

03 MAR-TRCS Staff Meeting
10 MAR-TRCS Meeting
17 MAR-TRCS Meeting
21 MAR-CTWG WWII Gold Medal Ceremony
24 MAR-TRCS Meeting
31 MAR-TRCS Meeting

18 APR-CT High Power Rifle Clinic
18-26 APR-Ground SAR at McGuire
25 APR-2 MAY-Aircrew School at McGuire
25 APR-CTWG TRAEX
25 APR-O Flights at GON
14-15 MAY-NER Aerospace Education School-
Ft. Indiantown Gap, PA
15-17 MAY-NER/PAWG Conference-Ft.
Indiantown Gap, PA

13 JUN-CTWG Op Eval TRANEX
TBA-JUL CTWG Encampment
21-23 AUG-CTWG/USAF Evaluation
15-23 AUG-NER Glider Academy@KSVF
26-29 AUG-CAP National Conference
12 SEP-Cadet Ball-USCGA

CADET MEETING REPORT

24 February, 2015

Maj Roy Bourque outlined the Squadron Rocketry Program and set deadlines for Cadet submission of plans.

The danger of carbon monoxide poisoning was the subject of the safety meeting. C/2dLt Jessica Carter discussed the prevention and detection of this hazardous gas and opened up the forum to comments and questions from the Cadets.

C/CMSgt Virginia Poe delivered her Armstrong Lecture on the "The Daily Benefits of the Aerospace Program."

Maj Brendan Schultz delivered his Eaker Lecture explaining the value of leadership skills learned in the Cadet Program and encouraged Cadets to apply their learning to the world outside of CAP.

C/SrA Thomas Turner outlined the history of rocket propulsion from Hero's *Aeopile* to the landing on the moon. He then explained each of Newton's Three Laws of Dynamics and showed their applications to rocketry.

Lt Col Rocketto, CTWG Director of Aerospace Education commented that Turner's presentation was the most complete and most detailed Cadet exposition of Newton's Laws which he had heard.

C/Amn Ryan Schantz's comment that he had heard that "the moon is always falling" led to an explanation of the phenomenon based upon Cadet Turner's previous lesson.

Cadet questions led to brief forays into commentary on a more complete explanation of Newton's Second Law, the Law of Conservation of Mass and Energy, and the peculiar changes in properties of objects as they approach the speed of light.

Rocketto then awarded C/SMSGt Daniel Hollingsworth his prize for taking first place in the Coastwatcher's Intellectual Scavenger Hunt a week ago. Hollingsworth was offered a choice of three objects, an unknown object is a small white box, a sealed envelope, and an Air University book titled *A-10's Over Kosovo*. Hollingsworth chose the box which contained a jack knife.

C/2d Lt Carter closed out the evening activity by noting the importance of "first impressions" as a demonstration of a professional demeanor. Cadet input provided a host of good suggestions on the behavior, dress, and attitudes which contribute to a good "first impression."

FOUR TRCS CADETS COMPETE ON TWO HIGH SCHOOL RIFLE TEAMS

Montville High School just finished an undefeated season and clinched the Mohegan-Pequot Championship. Three out of eight team members are also part of the TRCS Cadet Corps. The MHS riflemen are C/SMSGts Michael and Daniel Hollingsworth and C/2d Lt Keith Trotochaud, all of whom are ranked as Experts.

The fourth TRCS member on a high school rifle team is C/SMSGt John Meers who competes for the Grasso Technical School. Grasso finished in second place in the conference.

SENIOR MEETING REPORT

24 February, 2015

Submitted by

Lt. Col. Elliot White Springs

No formal training was held. Officers worked on individual projects.

NER MISSION AIRCREW SCHOOL

The Northeast Region will conduct a Mission Aircrew School at McGuire AFB from 25 April to 02 May. Training is available for Mission Pilot, Mission Observer, Mission Scanner and Aerial Photographer. The link for more information is:

http://www.ner.cap.gov/images/MAS/NERESA_2015.pdf.

AEROSPACE CURRENT EVENTS

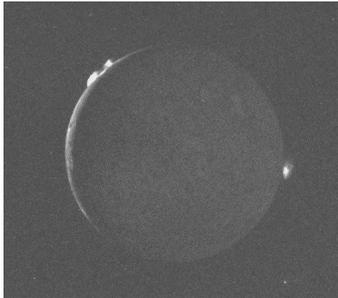
Plumes in Spaaaaaaace!

The surface imagery of planets and their satellites are most familiar to anyone who follows the planetary sciences. However, careful observation of the imagery often reveals transitory phenomena which indicates volcanic or atmospheric activity on these distant worlds. In 1979, Linda Mirabito, an imaging engineer at the Jet Propulsion Laboratory, discovered volcanic activity on Io, the innermost of the four Galilean satellites of Jupiter. This was the first time in history that active vulcanism had been observed in an extraterrestrial body.



Linda Mirabito

At the time of her discovery, Mirabito was working at the Jet Propulsion Laboratory as a member of the navigation team of the Voyager I probe. Examining pictures taken for navigation purposes, she discovered a 170 mile high plume of material on the limb of the satellite. Further analysis revealed that the plume was volcanic in origin.



A Voyager 2 picture of Io. The sunlight limb is visible to the left and the disc of the satellite is illuminated by reflected light from Jupiter. Three volcanic plumes are visible, two around ten o'clock and one near three o'clock.

(Credit: NASA/JPL)

Io is the most volcanically active object in the solar system because of its proximity to Jupiter and its powerful gravitational field. The moon and sun cause tides in the oceans of the earth. Similarly, Jupiter does the same for Io except that the gravitational forces are so strong that they cause significant tidal forces in the solid mass of Io. This “gravitational kneading” of Io is responsible for its extreme volcanic activity.



True-color imagery acquired by the Galileo spacecraft reveal a high percentage of sulfur on the surface. The volcano Prometheus located just right of center is erupting. The white circle which surrounds the volcano is sulfur dioxide frost.

(Credit: NASA/JPL)

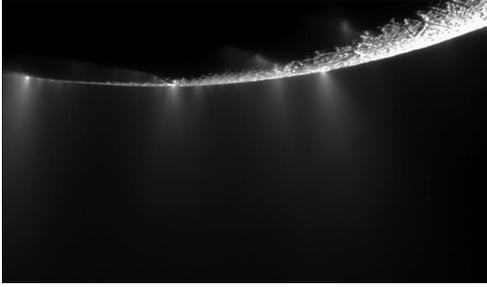
Analyzing transitory features of extraterrestrial objects may be traced as far back to the 1600's with Galileo's observations of sun spots and Hooke's discovery of the Great Red Spot on Jupiter. Contemporary work using satellites and highly specialized ground based telescopes equipped with advanced instrumentation have observed atmospheric and geological phenomena on a number of solar system objects. These include active volcanism, auroral displays, dust storms, and surface liquids.

This ongoing missions promise more information about the elements which make up the Saturn system: the planet itself, its satellites and ring system, and its near-space environment. Cassini was launched in 1997 and arrived at Saturn in 2004 and has made a number of discoveries since the. Along the way, it flew by Venus and Jupiter and Jupiter and the data garnered has generated a blizzard of scientific papers.

Cassini is now orbiting Saturn. Since its arrival, it has contained to operate nominally. In launched its Huygen probe which landed on Titan, Saturn's largest moon. The probe gathered atmospheric data and after landing, continued to send data for 90 minutes more. Information was analyzed about the surface layer which is described as sand made up of ice grains and shows evidence of liquid erosion.

Within the last year, Cassini returned information which is considered evidence for a large underground deposit of liquid water on Enceladus, the sixth largest moon of Saturn which was discovered by the astronomer-musician William Herschel in 1789.

Scientists believe that jets of liquid water and water ice are emitted by Enceladus. Orbital perturbations of the spacecraft allow scientists to determine the geophysics of the moon. The data indicates a liquid water “ocean” in the region of the south pole. The following photo displays some of these eruptions.



Three jets are visible in this image of Enceladus which was taken by Cassini (Credit: NASA/JPL)

Saturn is currently programmed for more satellite flybys and, in March, a particularly close one to Titan, its 100th pass in the decade long mission. This will yield more information about the body of liquid on Titan known as Kraken Mare and its mysterious disappearing “islands.” It will also be directed to fly through Enceladus' plumes, yielding new data on their composition. Cassini's mission has been extended until 2017 and if all goes well, it will celebrate 15 years of planetary exploration this year.

AVIATION HISTORY

French Influences in Aviation

by

Stephen M. Rocketto

A news note on a new French aviation museum, *Aeroscopia* at the Toulouse Blagnac Airport reminded me of the French influence on aviation. They cherish their aviation history and many museums are scattered throughout the country, the most notable being the *Musée de l'air et de l'espace* at Le Bourget near Paris.

The French are not tolerant of those who do not speak their language so a command of spoken and written French may be necessary if one travels to France. My one year accelerated course at Boston University cannot help me due to a peculiar characteristic of native French speakers. As Mark Twain noted in *The Innocents Abroad*,

“In Paris they just simply opened their eyes and stared when we spoke to them in French! We never did succeed in making those idiots understand their own language.”

An exasperated Charles de Gaulle once remarked upon the difficulty of dealing with his countrymen. “How can you govern a country which has 246 varieties of cheese? And one might add, at last count, 34 major and minor political parties.

The United States has had a particularly rocky romance in our Gallic relationships. George Washington regarded The Marquis de Lafayette, simply called Lafayette, as a son! Comte de Rochambeau landed in Newport, Rhode Island and led his forces to Yorktown, Virginia to join with Lafayette and Washington. There, protected by the French fleet under Comte de Grasse, the combined American and French forces forced the surrender of the British forces under Cornwallis, effectively winning the War of Independence. This debt has been re-paid by the U.S. Marines at Belleau Wood, U.S Army on Utah and Omaha Beaches, the forgiveness of war debts, and the Marshall Plan.

We have had our disagreements with the French also. The notorious XYZ affair, the undeclared naval war with France in 1798, Vichy, and the French withdrawal from NATO to name a few. For the French, Americans are moralizing, uncultured louts, devoid of the social graces. Americans typify the French as pompous and arrogant and as the Simpson's Groundskeeper Willie puts it, “cheese eating surrender monkeys.” But then they did give us the Statue of Liberty and *pommes de frites*, French fries, first served at the Jefferson White House in 1802.

The word “aviation” has a Latin root, *avis* meaning “bird” and its origins have been traced to 1863 when Guillaume Joseph Gabriel de La Landelle used it in his book, *Aviation ou Navigation Aérienne* Many aviation words

are borrowed from the French: aviator, fuselage, nacelle, taxi, hangar, mayday, longeron, aileron, monocoque, pitot, canard, and the now obsolete aerodrome to name a few. Many of the descriptors in the METAR weather report are derived from the French. Two examples are BR for mist from “*brume*” and GR for hail from “*grêle*.” Even “Mayday,” the international call of distress, finds its roots in the French pronunciation of *M'aidez*, French for “help me.”

Gallic enthusiasm for aeronautics begins with the 1783 balloon achievements and reached a fever pitch in the first decade of the 20th century. French pioneer aviators Louis Blériot, the first to fly across the English Channel, Henry Farman, pilot and designer, and the engineer Alexandre Gustave Eiffel of “tower” fame. Robert Esnault-Pelterie invented the “joy stick,” did early work in rocketry, and coined the word “astronautics.” The Fédération Aéronautique Internationale, was founded in France in 1905 to verify record flights.

Wilbur Wright made the first public demonstrations of Wright aircraft in France in 1908. The Europeans were skeptical about the Wright Brother achievements but doubt dissolved when they witnessed the advanced aircraft maneuvers during the demonstrations. Wilbur became a celebrity. His “newsboy” cap and the hobbled skirts worn by women passengers became hot items in the fashion world.

The first international air show, *Le Grand Semaine d'Aviation de la Champagne* was held at Reims in 1909. For a week, 22 aviators competed to earn prizes for speed, altitude, and payload. Competitors included Glenn Curtiss, Hubert Latham, and Louis Blériot, the first to cross the English Channel in a powered airplane. The richest prize, offered in the distance contest was \$10,000 won by Henri Farman who flew in a plane of his own design, flew a distance of 108 miles in 3hr, 4 min, and 56 seconds. The prize was worth about \$100,000 in today's money or 200 years pay for a typical 1909 working man.



Blériot in his Model XI in which he made the first flight over the English Channel on 25 July 1909.
(Credit:airandspace.si.edu)

Expatriates found a welcome home in France. Alberto Santos-Dumont, a Brazilian, spent most of his life in France and carried out seminal experiments with airships and airplanes. His achievements include the first practical dirigible and the first powered heavier than air flight in Europe.

A Peruvian, Jorge Chavez, was born in France where he learned to fly. He completed the first flight over the Alps, from Switzerland to Italy, but was killed when he landed. After lingering for four days his last words were *Arriba más arriba*, “Higher, ever higher” and chosen as the motto of the Peruvian Air Force.

World War One, the War to End Wars, led to the creation of the vast French Air Service. Companies such as the *Société Pour L'Aviation et ses Dérivés* (SPAD) and Nieuport developed many of the pursuit aircraft used by the Allies. Caudron and Voison built successful bombers along with Breguet, Potez, Dewoitine, and Lioré-et-Olivier all of which continued manufacturing during the post war period.

The first ace was French pilot Lt. Adolphe Pégoud who scored his first victory in February of 1915 flying a Maurice Farman MS25 but he enjoyed the honor for only six months for on the last day of August, he was shot down and killed by Unteroffizier Walter Kandulski, one of his prewar students! Pégoud was a good teacher and no good act goes unpunished.



Pégoud and his mascot penguin, salvaged for the wreck of his airplane. The penguin survived, Pégoud did not.

(Credits: Library of Congress & Musée de l'Armée)

Some of the greatest aces of WW I were French. René Fonck was the Allies Ace of Aces with 75 victories. In second place was Georges Guynemer, 53 kills, who went missing in September of 1917. His disappearance a blow to French morale and school children were told that "he flew so high he could not come down again."

Charles Nungesser, who suffered seventeen serious injuries but survived the war, was the number three French Ace accounting for 43 German aircraft. Nungesser. In 1927, he and François Coli attempted to win the Orteig Prize for the first non-stop flight between New York and Paris. A week before Lindberg's successful flight, they departed Paris in a Levasseur P.L.8, named *Le Oiseau Blanc*, the White Bird, never to be heard from again.



Nungesser, Coli and the White Bird

The World War I Lafayette Escadrille, a foreign legion squadron consisting primarily of Americans were famous and served as a core element of US military aviation. Chief among them was Raoul Lufberry. Lufberry, born in France of a French mother and an American father, was raised in France by his grandmother

after his father returned to the United States. For two years, 1906 to 1908, he lived with his brother Charles in Wallingford, Connecticut.



Lufberry and Douglas MacMonagle relax with the squadron's pet lions, Whiskey and Soda.

(Credit: airandspace.si.edu)

Lufberry joined the Escadrille in 1916 and was somewhat out of place among the many Ivy League graduates and scions of wealthy families who made up the squadron. His fastidious care of his aircraft and weaponry and his skill as a pilot led to ace status and a leadership position. In 1917, he entered the U.S. Army Air Service as a major and a few months later was given command of the 94th Aero Squadron. In the squadron's first patrol, Lufberry led future aces Eddie Rickenbacker and Douglas Campbell. Two months after assuming command, Lufberry, with at least 16 victories, was killed in combat.

According to Rickenbacker, the random and dangerous approaches to an airfield by multiple aircraft led Lufberry to establish the now standard traffic pattern, "downwind, base, and final,"

Between the wars, the French pioneered long distance airmail. *Aéropostale* under the leadership of Didier Daurat flew routes into Africa, across the South Atlantic, and throughout southern South America. The names of Jean Mermoz and Henri Guillaumet are still celebrated in France along with the writings of fellow line pilot Antoine de Saint-Exupéry.

Mermoz, also honored in Argentina and Brazil, was a leader in opening up the African and South

American air mail routes and flying the Andes. In 1936, he departed on one of the South Atlantic crossings in a hastily repaired Latécoère 300, the *Croix-du-Sud* (*Southern Cross*). Five hours into the flight, a radio message reported that Mermoz had shut down the starboard aft engine. It was the last message heard from her. A search failed to find any sign of the missing aircraft.



*A postal memorial to Mermoz and his crew.
(Credit: postale.french.free)*

Bad weather forced Guillaumet down in the Argentine Andes in 1930. It took Guillaumet a week to walk out. Saint-Exupéry related the remarkable journey in his book, *Wind, Sand, and Star* which was dedicated to Guillaumet. The story was made into an IMAX film, *Wings of Courage*, in 1995.



Guillaumet's Potez 25 at Laguna del Diamante, the site of his forced landing

The French was active proponents of flying boats and produced a series of them between the wars. At least seven companies produced large flying

boats for the routes which the French pioneered over the South Atlantic.



The Sud-Est SE.200 Amphitrite, a six engine flying boat built in the late '30s. It was to serve as a trans-Atlantic airliner for Air France but the war intervened and only one flew. Two others were destroyed, and the fourth was never completed.

The collapse of France, its partial occupation by the Germans, and the rule of the collaborationist Vichy government created a complex political and military situation during World War II. Before France fell, the *Armée de l'Air* fought the Germans. Afterwards, the Free French Air Force carried on the fight from Great Britain using a mix of French, British, and American equipment. The Normandie-Nieman Regiment served with the Soviets on the Eastern Front flying the Yak-3. The allegiances of French units in North Africa, the Mid-East, and the colonies shifted with the tides of war. Some French aviators, motivated by anti-Bolshevism, flew for the Nazis.

The cost was high. Saint-Exupéry, flying combat at the age of 44, was lost over the Mediterranean during a photo-reconnaissance mission. The Mediterranean also claimed Guillaumet whose transport was shot down by the Italians.

France's foremost World War II fighter pilot was Pierre Clostermann who flew Supermarine Spitfires and Hawker Tempests for Free French squadrons attached to the Royal Air Force. In over 400 sorties, he attained Ace status and was a notable success flying ground attack missions.

All of their aviation manufacturers were located in metropolitan France. During the Vichy regime

and the German occupation, the companies did produce aircraft but production was hampered by allied bombing, shortages of labor, and the reluctance of many Frenchmen to cooperate.

Marcel Bloch, the founder of the *Société des Avions Marcel Bloch*, born a Jew, refused to cooperate with the Vichy government which then imprisoned him and he ended up in the Buchenwald concentration camp. Surviving the war, he changed his name to Dassault, the code name of his brother, General Darius Bloch who served in the French resistance, of his company, and resumed leadership of his company, now named Dassault Aviation. Dassault went on to produce an excellent line of jet aircraft such as the Mystère and Mirage series.



Mirage IIIBJ



Mystère IVA

By the turn of the century, the French aviation industry regained its strength. The *Satellite Pour l'Observation de la Terre*, SPOT, one of the first high resolution earth resources and commercial satellites. French based companies are competitive in the military equipment export business. The *Société nationale d'études et de construction de moteurs d'aviation (Sneema)* and

CFM International produce engines and the French maintain a satellite launching site, Kourou, in French Guiana. Launch vehicles, such as the highly successful Ariane series, are produced by a consortium in which the French are heavily involved.

A collaboration between British Aerospace and Aérospatiale produced the supersonic airliner, Concorde, technologically advanced but a commercial failure. Twenty were built and they were flown only by Air France and British Airways.

Airbus, an international consortium based in Toulouse, manufactures a line of passenger transports which rivals the once predominant Boeing in both quantity and quality. Their Airbus 380 is the largest passenger transport yet built.

Daher-Socata builds the highly successful TBM single engine turboprops which can near match the speed of some general aviation jets at a fraction of the cost. The latest model, the TBM 900 with its five bladed prop and computer designed aerodynamics cruises at 330 knots.



TBM 700 on Short Final at Groton

From the pioneer days of lighter than air and heavier than air flight to the present, aerospace has been graced by a long history of French aviators and French technological achievements.

My plans are to celebrate Gallic aerospace accomplishments by visiting France and touring their many aviation museums and historic sites once I can get them to understand their own language.