Missions for America

Semper vigilans!

Semper volans!

Howard Hughes was this visionary who was obsessed with speed and flying like a god...I loved his idea of what filmmaking was.

-Filmmaker Martin Scorsese-

And he got his start flying in New London, Connecticut!

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

http://ct075.org.
300 Tower Rd., Groton, CT

Lt Col Stephen Rocketto, Editor
srocketto@aquilasys.com
Maj Scott Farley, Publisher
Maj Roy Bourque, Paparazzi
Hap Rocketto, 2nd Lt, AUS, (ret'd.)
Capt Edward Miller, Feature Writers

Issue 13.12 02 April, 2019

SQUADRON CALENDAR

06 APR-CTWG SAREX
09 APR-TRCS Commanders's Call-Blues
12-14 APR-Joint NER/MAWG Conference
16 APR-TRCS Meeting
23 APR-TRCS Meeting
27 APR-CTWG Rifle Safety and Marksmanship
30 APR-TRCS Meeting
17-19 MAY-USAF Evaluation of CTWG
26 MAY-Ledyard Memorial Day Parade
15 JUN-Commander's Cup Rocket Contest
22 JUN-CTWG Annual Conference
04 JUL-Groton 4th of July Parade
10-17 AUG-CTWG Encampment

CADET MEETING

02 April, 2019

Cadets engaged in exercises focused on military bearing.
The second part of the session was a geography exercise.

SENIOR MEETING

02 April, 2019

Maj Farley reviewed some salient points from the week-end pilots' meeting. The requirement that an aircraft on the Long Island Sound Patrol must obtain a mission number from CAP's National Operation Center before diverting on a Coast Guard mission led to spirited discussion

CTWG RIFLE SAFETY AND MARKSMANSHIP CLINIC

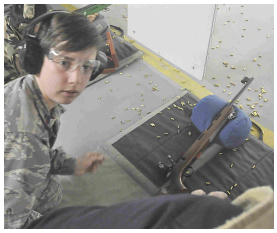
30 April, 2019

Lt Thornell took 13 cadets to the CTWG Rifle Safety and Marksmanship Clinic at the Quaker Hill Rod and Gun Club.

All the cadets qualified for a medal and will

receive it and a certificate in the future.

Cadets Trinidad, L. Meier, and Trotochaud earned the Pro-Marksman Award. Cadets Jeznach, Martin, Race, Rathbone, Schantz and Thornell will be issued Marksman medals. Cadets Ian Diaz, Rowan Meier are now holders of Marksman First Class honors.



Cadet Martin awaits las minute instructions for his coach and Cadet Race prepares to fire.

The Coaching Staff included two national champions, two members of the President's Hundred, three Distinguished Riflemen, two Distinguished Experts, seven members of the Connecticut State and national smallbore and high power teams, five college, club, and high school coaches, and holders of scores of past and present national records.

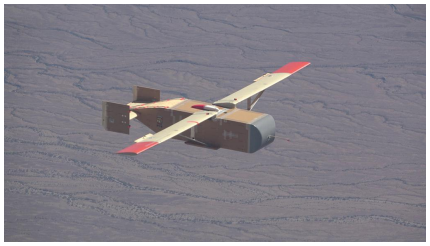
CURENT EVENTS

Military Gliders are Back?

The Defense Advanced Research Projects Agency, DARPA, the folks who brought you the Internet, have looked back and are experimenting with an old technology designed to bring Spam to the troops rather than SPAM to your computer.

DARPA is supporting a U.S. Marine Corps program which tests unmanned cargo glider to deliver supplies to the Gyrenes. The aircraft are a product of Logistics Gliders which has produced two versions, the LG-2K and the smaller LG-1K.

The LG-2K weighs 400 pound and has a boxy 12.7 foot fuselage and 23.2 foot wingspan. The wings fold back parallel to the fuselage and it is possible to fit four inside a Boeing MV-22B Osprey, eight into the Sikorsky CH-53K King Stallion and 18 inside the Lockheed KC-130J Hercules.



LG-1K

When deployed from the aft ramp, the wings unfold and the guidance system, either GPS or direct radion control, activates. The 15:1 glide ratio indicates that from a sufficient release altitude, the range will be around 70 miles. This allows a stand-off distance from enemy air defenses and provides more safety for the manned launch vehicle. The glider can also be deployed as a sling load from under a helicopter.

This LG-2K launched from a Short Skyvan is in the process of extending its wings.(Credits:Glider Logistics)

Landing the 1,800 pound payload can be accomplished in two ways: belly landing or vertically using a parachute. Constructed of plywood and plastic, they are throw-away items costing less than $10,000 each, a trifling sum compared to the possible loss of a manned delivery aircraft.

Shades of World War II when a company like Pratt-Read in Deep River, Connecticut produced 956 Waco CG-4 Hadrians under license. The CG-4 had a fabric covered fuselage, wings, and empennage with a minimum of metal and cost about $15,000 each. One of them could carry a 4,000 pound payload and was manned by two pilots and had to be towed by a manned aircraft to a launch point close to the delivery site.

Unlike the elegant Let L-23 Super Blaniks in CAP's fleet, the WW II assault glider, once released, was heading on down! A boxy CG-4 had half the glide ratio of a Super Blanik and little if any ability to catch a thermal and soar. The "intelligent" great-grandchild of the assault glider, the LG -2K revives an old tactic with a new twist.

USAAF Waco CG-4A and a CAP Let L-23 (
Photo Credits: USAF and Maj Paul Noniewicz)

AEROSPACE HISTORY AND CHRONOLOGY

April 3, 1933– The United States Navy airship USS Akron (ZRS-4) encounters severe weather and is forced down into the Atlantic off Barnegat Light.

New Jersey. Rear Admiral Willam A. Moffett, Medal of Honor recipient and Chief of the Navy Bureau of Aeronautics and 73 passengers and crew were killed.

The loss of Moffett's leadership was a blow to naval aviation. He had spearheaded the Navy's fight against Billy Mitchell's attempt to divest aviation from Navy control. During his tenure in office, he promoted airships, led the development of aircraft carriers, and formed close relationships with the aircraft industry.

April 4, 1957 – First flight of the English Electric Lightning.

The Lightning was the mainstay of the RAF interceptor force and also sold to the Royal Saudi and Kuwaiti Air Forces. She could climb to 36,000 feet in three minutes and exceed Mach 2 in level flight. However, the Lightning was a fuel hog.

A pilot was once heard to remark that the Lightning was the only aircraft which he had ever flown in which you could see the fuel gauge visibly move towards zero while flying. As a point defense fighter designed to protect the airfields of the British V-bomber force, this was not considered critical.

The Lightning was a product of a design team headed by William "Teddy" Petter. Petter's past achievements included the English Electric Canberra, modified and built under license for the USAF by Martin as the B-57. A number of very distinctive design features were included. The two engines were stacked over and under each other and fed by a single nose mounted air intake to minimize frontal area which reduced drag by about 25%.

The unusual notched delta wing in later versions carried two 260 imperial gallon jettison-able fuel tanks on top of the wing. An additional 610 gallons could be carried in a conformal ventral tank. However, some of the tanks were modified to mount two 30 mm cannons and their ammunition and the fuel capacity was reduced to 535 gallons. A complement of air-to-air missiles completed the offensive ordnance.

April 5, 1976 – Howard Hughes, Jr. goes West during a medical evacuation flight while aboard a Learjet flying north. Hughes death in flight was a fitting cap to his remarkable aviation career which began in New London, Connecticut on June 25th, 1920.

Hughes climbing out his revolutionary H-1 racer after setting a world speed record.

Big Howard, Howard Jr's father father.a Harvard drop-out had sprung him the Fessenden School in West Newton, Massachusetts and took him on a junket to New London to take in, what the sportswriter and humorist Damon Runyon called, the boat race between the "Harvards and the Yales." The ever-indulgent Howard Senior promised "Sonny" to buy whatever he wanted if the "Harvards" won which they did going upstream for four miles and clipping the "Yales" by 35 seconds.

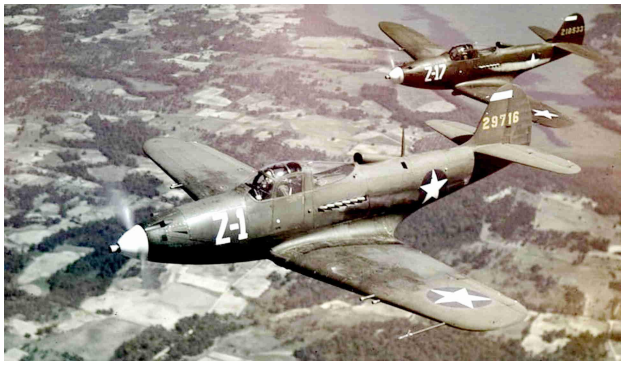
Sonny asked for $5, the price for a ride in a Curtiss seaplane moored in the harbor. The Howard's paid and boarded and Capt. Horace Hudson, a principal of the Piper-Hudson Seaplane Service, took them for a 109 minute ride. Big Howard landed queasy and Little Howard landed ecstatic.

He started flight lessons in 1926, about the same time that he started making the aviation epic movie, *Hell's Angels*. The film was one of the first with sound, contained one color scene featuring Jean Harlow, and killed four airmen during the staging of the aerial sequences.

For the next 40 years, the eccentric Hughes was involved in significant events in aviation; airplane designer and builder, speed and distance record setter, and airline owner. During this time, he won two Harmon Trophies, a Collier's Trophy, and the Octave Chanute Award and the public regarded him equal to Charles Lindbergh. Not bad for a kid who came from Harris County Texas with no

college degree and only a few million dollars in his pocket.

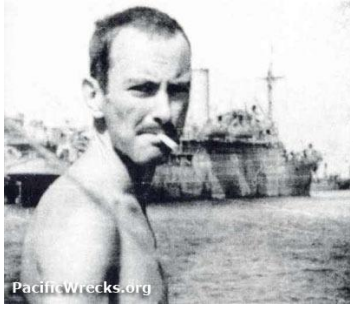
April 6, 1938 – First flight of the Bell P-39 Airacobra. The Airacobra was the first fighter with tricycle landing gear. Its most unusual feature was a mid-mounted engine but it also sported a 37 mm cannon which fired through the propeller hub and automobile style doors with a roll down window!



Note the distinctive mid-fuselage, air intake and engine exhausts, automobile door, the cannon in the prop hub, four .30 cal wing guns and two .50 caliber guns mounted in the nose of the P-39N lead aircraft.

Its performance suffered from the lack of a supercharger which restricted it to lower altitudes but this was no handicap for the Soviet Air Force which received around one half of the entire production run of 10,000 aircraft. The Soviet pilots enjoyed considerable success, five of the top ten Soviet aces scored most of their victories flying the Airacobra.

One of the best books about the P-39 is *Nanette: Her Pilot's Love Story* by Edwards Park, a founder and columnist for *Smithsonian Magazine*. Park flew combat in New Guinea and had his first date with *Nanette*, a P-38N number 74, on a sweltering sun-drenched strip just north of Port Moresby called 7-Mile Drone. The included quotes are taken from Park's book.



Edwards Park, fighter pilot.

Nanette was a quirky hussy and disliked by other pilots. But she and Park grew used to each others idiosyncrasies and bonded as they fought a lonely war together.

Nanette is the P-39 on the far right.

Park speaks of the character of the humans-like character of cars which he had grown up with. Their frailties, imperfections, strength, fear, bad tempers and says "Life was the better for such machines.

And he believes, like all men, that:

> *Larry Bell too has been pleasantly imperfect. He designed a plane that reflected a most shaky heritage-sloppy, lazy, self-indulgent,, all those good familiar faults. His Aircobras all bore this slanderous family resemblance, and those of us who flew them all share, I think, a sort of comfort at being so closely associated with such warmly familiar creatures in so wildly unfamiliar and environment.*

I, who was fully and unceasingly terrified by my unbelievably dangerous prospects on that lovely, deadly tropical island found great comfort in Nanette...Where other Aircobras were handsome and demanding, she was breathtakingly radiant and absolutely viscous. Where others were merely inadequate at their jobs, she was a sloven, Where others could always put on a good show if absolutely necessary, she could dazzle. Where others quailed noticeably at flying combat missions in New Guinea, she shook with uncontrolled panic. Moreover, bless her rotten heart, she recognized in me a fellow poltroon and clung to me determinedly.

In the most erotic passage which the Editor has ever read in an aviation book Park tells of leading 15 other Airacobras in a mad rat race pushing the aircraft into tighter and tighter descending spiral, leaving his squadron mates behind and feeling the faint trembling in the stick as Nanette whispers her warning. "High speed stall."

Once more, insanely, I increased the pressure with one finger, and the tremble increased-still so faint that a new pilot would barely feel it, but a shout of alarm to me. And at last, I relaxed my finger and felt the motion smooth out.

Yes I thought. And never again. Ever. For I had momentarily, become part of Nanette-one and indivisible- and the two of us, in our ecstasy, had come very close to dying.

No plane is a person; no person a plane...But there are times when the interplay between two is is so intense and absorbing that they do indeed seem fused into one. And I think one of the two can be a machine.

I knew, flying into the strip that marvelous day, that I had touches something strange and secret. And I knew that somehow it all had to end now for us. I was-we were-exploring something incredibly dangerous.

April 7, 1922 – A Daimler Hire Ltd. de Havilland DH.18A collides with a Compagne des Grands Express Aériens Farman F-60 Goliath. All seven aboard the two aircraft die in the first midair collision between two commercial aircraft.

An F.60 Goliath belonging to Compagne des Grands Express Aériens

A DH.18A bearing the livery of Aircraft Transport and Travel.

Because of he bad weather, both pilots were using the first method of IFR navigation (I Follow Roads) and using the Thieulloy-St, Antoine road near Picardy, France when the accident occurred. The British aircraft was transporting mail from Croydon to Paris. The French aircraft carried three passenger, two Americans who were on their honeymoon, on the Paris to Croydon on a daily service.

In the aftermath of the tragedy. Government officials, airline executives and pilots met at Croydon. A resolution was passed to "keep to the right" and specific air routes were established in Great Britain, France, Belgium, and the Netherlands.

April 8, 1943 – First flight of the Douglas XSB2D-1 Destroyer.

The Destroyer exhibits its mid-fuselage mounted inverted gull wings. *(Credit: US Navy)*

The Destroyer was a Navy request for a follow-up dive bomber and torpedo plane to replace the Douglas SBD Dauntless and the lamentable Curtiss SB2C Helldiver.

The original prototypes included two remote controlled turrets and a second crewman but the Navy then changed the requirements and called for a single seat aircraft with more fuel and armor so the Douglas team went to work and modified the original design and the BTD went into production.

Only 28 had been delivered by the time the Japanese surrendered in August of 1945 and the Navy cancelled the contract.

The BTD had twice the payload and 25% more range than the Helldiver. But not every Ed Heinemann design was a winner. When the "winds of war" die down, a promising new technology beckons or capital evaporates, good ideas pass into oblivion. The good news was that the Heinemann team was working on a new design which became the classic AD Skyraider.

The two prototypes were fitted out with a composite propulsion system in 1944, designated XBTD-2. A Westinghouse 19B turbojet was fitted into the rear fuselage but the anemic thrust provided did little to improve performance.

April 8, 1954 – South African Airways Flight 201, a de Havilland DH 106 Comet flying from Rome to Cairo en-route to Johannesburg, disintegrates in mid-air. This was the second crash of the trailblazing Comet, first jet airliner to enter commercial service.

Analysis revealed that in both cases the fuselage failed due to metal fatigue due to stress concentrations at one of the square corners of a window. Pioneers pay in blood.

The prototype Comet displays the square window design the was a proximate cause of the crashes.

After several years, the new version of the Comet emerged with oval windows but the delay allowed Boeing to finish the 707 and relegated the Comet to a niche in the marketplace.

The oval windows are visible in this British European Airways Comet 4, last and most successful Comet.

April 9, 1994 – The Boeing 777 is rolled out. Over 1,500 have been built and some 400 are still on order.

1967 – First flight of the Boeing 737.

The prototype 737-100 was flown by Langley Research Center to study terminal airspace operations with the goal of improving productivity.

Over 10,000 has been built in what Boeing has five generations: Original, Classic, Next Generation, Boeing Business Jet and MAX.

Boeing has approximately 4,500 unfilled orders but the recent crashes of Lion Air and Ethiopian Airlines MAX 8s have resulted in the grounding of the world-wide fleet of MAX 8 and MAX 9 aircraft, equipped with the Maneuvering Characteristic Stability System (MCAS) suspected to be the cause of the two disasters.

CURRENT EVENTS II

Observations about the 737 MAX MCAS System

by

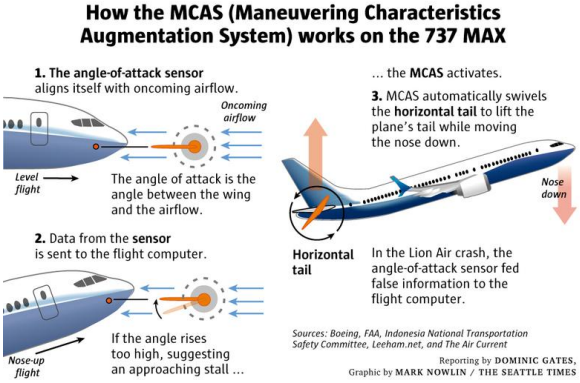
Stephen M. Rocketto

More Boeing 737 airliners have been produced than any other jet passenger aircraft. There have been about two dozen variants. Over 10,000 have been built and over 4,000 are on order. Boeing turns out about 50 each month. The main competitor is the Airbus 310neo.

The "Max" developed to compete with the fuel-efficient Airbus 310neo. Boeing designed the max with new engines and winglets and more passenger seats and met the market place challenge of the new Airbus

The new engines on the "Max" had to be mounted in a higher position and this changed the flight characteristics of the aircraft so Boeing built in a computer program to make controlling the "Max" identical to past models. This saves money because pilots need not be retrained and the aircraft does not have to be re-certified.

The system is called the Maneuvering Characteristics Augmentation System (MCAS) is an automated safety feature on the 737 Max 8 designed to correct a tendency for the aircraft to pitch up and entering into a stall under certain flight conditions.



Both the Lion Air jet, which crashed in October, killing 189 people, and the Ethiopian Airlines aircraft, which went down a week ago Sunday, leaving 157 people dead, were fitted with the system and both experienced similarly erratic steep climbs and descents and fluctuating airspeeds before crashing shortly after takeoff.

The Lion Air plane's MCAS had been written up as a maintenance issue several times. One thought is that lesser skilled technicians at Lion Air may failed to fix the system. United and American have indicated that they have had not problems with and are confident that their maintenance departments are on top of any problems that might arise.

The MCAS system is not an autopilot and only works during manual flight when it senses a non-normal system. It operates intermittently and the power is increased as the aircraft is pitched down, a normal stall correction but threatening at low altitude.

Information about the Lion Air flight indicates that it suffered repeated pitch ups and recoveries. The pilots managed to over-ride the system and to turn the aircraft around and were heading back to the airport when they finally fully lost control. Suspicion has focused on a faulty angle of attack sensor that triggered the MCAS. The 737 Max has two angle of attack indicators but only one of them is a sensor for MCAS.

Issues about training, a responsibility of both the manufacturer and the airlines have been raised. Boeing issued a bulletin to airlines operating the 737 Max 8 advising pilots how to override the MCAS system. Boeing is near finalization on a software update and pilot training revision that will address the MCAS flight control law's behavior in response to erroneous sensor inputs.

Another issue raised has been seized upon by politicians and the congressional committed are already issuing subpoenas. The FAA allows selected Boeing engineers to certify systems. This is done for two reasons. First, they have more expertise than the government inspectors. Second, the FAA does not have sufficient staff to do all that must be done to certify and airplane. The shift of responsibility to non-federal employees is not unusual in government circles. For example, most certification of pilots is done by designated flight examiners who are not federal employees.

Responding to run-away trim is standard training for pilots. The have had it happen once. In the aircraft which he was flying, there were three ways to deactivate the system and take back normal control, a button on the yolk, pulling the autopilot circuit breaker, or turning off the master switch.

The writer has spoken with three airline pilots, one of who is rated in the 737MAX. The 737Max has a switch which will deactivate the system.

The deactivation unit is on the center pedal, just above the fire extinguisher for the #2 engine.

Another factor may be the inexperience of the pilots. The Ethiopian airline had very low time first officer and a 29 year old captain. Situational awareness can be lost, especially when the emergency is an unfamiliar situation at occurs at low altitude.

So we will await the final results of the investigation. The short term consequences are cancelled flights. The flight insurance business will take a beating.

The long time consequences will be the public reaction to the “Max” and Boeing sales. Other airliners, notably the DeHavilland Comet, the Lockheed Electra, and the Douglas DC-10 acquired bad reputations due to early crashes but all of them went on to long careers with the airlines. *Caveat: The writer warns that the information contained above is a first stab at explaining the tragedies and should not be taken as an expert opinion.*