

Missions for America

Semper vigilans!
Semper volans!



The Coastwatcher

Newsletter of the Thames River Composite Squadron
GON
Connecticut Wing
Civil Air Patrol

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SCHEDULE OF COMING EVENTS

For Future Planning

20 JAN-Thursday-Aviation Lecture-see note
25 JAN-Cadets--rocket building
Seniors-Commander's Call

12-13 FEB-Squadron Leadership School
15 FEB-Col Stidsen lecture on SAC Missile Silo operations.

HIP DEEP GLOBAL WARNING FALLOUT

The natural accretion of global warming fallout at the TRCS gypsy camp, assisted by wind drift, and road plowing action left hip deep berms lining Tower Road, knee deep fields of white, and a pile of crystalline water heaped to the level of the door window of the old trailer.

Maj Rocketto broke through on Friday morning, the 14th of January to pick up equipment for the Juliet Long Aerospace Festival and SM Adam Wojtcuk cut trails with a snow blower. Alas, the frigid fruits were again harvested when a second storm struck, canceling our meeting for the second week in a row.

PROFESSIONAL DEVELOPMENT LETTERS AND THE YEAGER AWARD

The Professional Development Section is sending letters to every senior member. The letter is a review of their standing in the CAP Professional Development Program and a listing of what must be done to reach the next level. Explanatory attachments are included.

In addition, at the request of the Aerospace Education Officer, information on earning the Yeager ribbon is included for any officer who has not already done so.

TRCS SUPPORTS JULIET LONG AEROSPACE FESTIVAL

Once again, a Squadron team, led by Maj Rocketto lent support to the annual aerospace festival organized by our Aerospace Education Members Stuart Sharack and Alec Rode.



Parents and students learn about CAP from Capt Wojtcuk.

The two hour event was held at the Gales Ferry School and featured about two dozen exhibitors. Student and parent attendance exceeded 200.

Our exhibit consisted of poster boards, pictures, and a table laden with aerospace books, models, and CAP recruiting literature.



Cadet Hall explains the behavior of the air puck as two girls pass it between them.

C/2Lt Lexie Wojtcuk discussed our activities with many young visitors and Cadets Johnson and Hall allowed them hands-on experiences of the Bernoulli Effect and Newton's First Law of Dynamics.



Capt Wojtcuk discusses CAP programs with two parents.



C/2Lt Wojtcuk speaks to a parent while Maj Bourque explains details of an exhibit.

RICHARD WHITCOMB AND THE AREA RULE

(Abridged and Revised from The Coastwatcher, Vol. III, No, 37)

As noted in the history column, January 22nd is the 49th anniversary of NASA's application of Whitcomb's Area Rule to rocket flight.

Richard T Whitcomb is arguably, the foremost aeronautical engineer of the post World War II period. Although not as well known as Lockheed's Kelly Johnson or as politically influential as CalTech's Theodore von Karman, Whitcomb is responsible for three important aeronautical innovations, all of which are in common use today; the Area Rule, the supercritical airfoil, and winglets.

Unlike the highly theoretical von Karman, Whitcomb's design style was akin to that of Johnson, a man who was reputed to be able to "see air." He would study wind tunnel data and intuit the behavior of the air. This would allow him to modify the models until the data indicated that the design feature achieved a higher level of performance.

In 1953, Convair's F-102 Delta Dagger was in trouble. It could not exceed Mach One. Whitcomb's studies had led him to believe that the transonic drag of an aircraft could be reduced if its cross-sectional area remained constant. By narrowing the fuselage where the wings joined and modifying the fuselage fore and aft of the wings, a "Coke bottle" shape resulted. Experimentation proved Whitcomb correct. The F-102 was modified, and achieved supersonic speed in level flight. The "Area Rule" was applied to many subsequent supersonic aircraft and Whitcomb was presented the Collier Trophy in 1954, honoring him for the most significant aeronautical engineering achievement of the year.

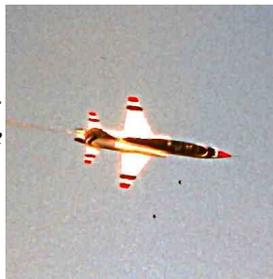


Convair F-102 first to take advantage of the "Area Rule," and flown by the 103rd Fighter Interceptor Group out of Bradley from 1956 to 1971. Note the "fattened" aft end



"Area ruled" Convair B-58 Hustler, first USAF supersonic bomber and winner of the 1962 Bendix Transcontinental Air Race. The graceful slope of the cockpit area is indicative of the application of the area rule.

A Thunderbird Northrop T-38 Talon displays the "Coke bottle fuselage."



"The Bone," a Northrop B-1B displays its wasp waist on the Ellsworth AFB ramp, Rapid City, SD

But the pinched waist is not the only application of the "area rule." Starting with the Boeing 747-300, clever Seattle engineers extended the iconic humped upper deck and the reduction in drag resulted in increased cruising speed.



China Airlines Boeing 747-400 displays elongated "hump." Compare the image with NASA's 747-100SR below.



Another trick used by aeronautical engineers to apply area rule theory is to maintain the constant aircraft cross sectional area by design refinements such as the placement of engines, the addition of flap actuator fairings, and the careful shaping of canopies.



Another application of the area rule. The five bulges on the aft end of the wing of this Royal Jordanian Airline Airbus 340 are flap actuator fairings which not only protect the mechanism but also reduce drag.

A son and grandson of engineers, Whitcomb was born in 1921 in Evanston, Illinois. He built model airplanes as a boy, and received a Bachelor of Science in Mechanical Engineering with Highest Honors from Worcester Polytechnic Institute and commenced work for the National Advisory Committee for Aeronautics at the Langley Research Laboratory, Hampton, Virginia. He made all of his major contributions while at Langley, retiring in 1980.

His honors include not only the Collier Trophy but the National Medal of Science, the highest government award for a science and engineering. He is an inductee both of the National Inventor's Hall of Fame and the National Academy of Engineering.

On October 15th, 2009, Richard Whitcomb cased his slide rule and headed West, leaving behind a rich legacy of aeronautical accomplishments.

LUNCH AVIATION LECTURE AT MYSTIC MARINE MUSEUM

Squadron members are encouraged to join Maj Rocketto for lunch and lecture on Thursday, noon. The illustrated lecture will discuss an aviation adventure during which two two DeHavilland Beavers completed a month and a half flight around Canada. Interested members should contact Maj Rocketto at srocketto@aquilasys.com.



*US Dept of the Interior, Fish and Wildlife Service
Beaver on Amphibious Floats at GON*



Harbour Air Mk I Beaver Docking at Vancouver

CURRENT EVENTS

*Russians and Poles Dispute Causes of Crash
which Killed Polish President*

A Russian investigation into the Tu-152 crash which killed the President of Poland and 95 others lays the blame on the aircraft captain. Although heavy fog obscured the airport, the report states that the pilots "...were under psychological pressure" to land...." Aviators know this phenomenon as "get-home-itis." In this case, probably induced by the importance of the passengers and the mission focus of the crew. Additionally, sterile cockpit rules were violated . the commander of Poland's air force, who was on the flight deck, had alcohol in his blood, the pilots broke minimums on the approach, and the type of altimeter in use has been questioned.

Polish authorities argue that Russia bears part of the responsibility due to miscommunications between the aircraft and the ground.

*UAV Flies with Hydrogen Fueled Propulsion
System*

The Global Observer GO-1, a long endurance UAV build by AeroVironment launched out of Edwards AFB and stayed aloft for four hours.

Power was supplied by a liquid fueled internal combustion engine which runs a generator which supplies energy to the four propellers, battery system, and payload

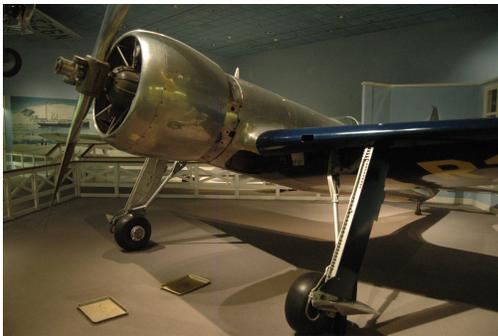
AEROSPACE HISTORY
HIGHLIGHTS OF THE WEEK

18 JAN, 1942-First Flight of the Sikorsky VS-44A



Excambrian, last of the three "Flying Aces" sit in repose on its beaching gear at the New England Air Museum.

19 JAN, 1910-At Los Angeles, Lt Paul Beck, flying a Farman biplane drops sandbags in the first U.S. Army experiment in aerial bombardment.



The Hughes Racer at NASM on the Mall

20 JAN, 1937-Howard Hughes, in his H-1 racer, sets a new transcontinental speed record of 332 mph.

21 JAN, 1974-First Flight of the YF-16. During a high speed taxi test, the aircraft accidentally lifts off and test pilot Phil Oestreicher makes a decision to take it around the pattern.



General Dynamics YF-16

22 JAN, 1952-At Wallops Island, Virginia, NACA engineers run the first test on a rocket propelled vehicle incorporating the Whitcomb Area Rule.

GROUND OBSERVER CORPS REDUX
CONTEST

MYSTERY AIRCRAFT SUBMITTED BY
CADET TIMOTHY CHARTIER

SPECIAL NOTICE

ANY READER IS INVITED TO SUBMIT A SET OF ANSWERS TO THE CONTEST. SENIORS NEED ONLY IDENTIFY THE MAKE, MODEL, AND POPULAR NAME OF THE AIRCRAFT. CADETS WILL DO THE SAME AND SUPPLY A SHORT STATEMENT CONTAINING SOME INTERSTING FACTS ABOUT THE AIRCRAFT.

ONLY TRCS CADETS ARE ELIGIBLE FOR PRIZES. SENIORS WIN A MENTION IN THE COASTWATCHER AND A WEEK'S WORTH OF "BRAGGING RIGHTS."

THE FOLLOWING IS A REPEAT PRESENTATION FROM THE 12 JANUARY EDITION WITH NEW PICTURES AND CLUES

MYSTERY AIRCRAFT #1



The homely step-sister to the glamorous Spitfire and pilot and mechanic await the "scramble" order which will never come at the USAF Museum. She was the real hero of the Battle of Britain destroying more German aircraft than all other defenses combined. The firm which produced this aircraft has a "bird-like" name.

MYSTERY AIRCRAFT #2



This bomber was the less glamorous and plumper step-sister of the Flying Fortress. Five Medals of Honor were won by crew members during Operation Tidal Wave, an attack on the Rumanian Oil Refineries at Ploesti. This particular aircraft bears the livery of the Indian Air Force. Note the unique bomb bay's "roll-desk" doors.

MYSTERY AIRCRAFT #3



Now known for helicopters such as the Huey, this firm produced the first US jet aircraft. The USAF Museum's B-36 peers over the partition at our mystery aircraft.

MYSTERY AIRCRAFT #4



The aircraft is the plumper and less well known step-sister to the C-47. Built by a firm started by and named after Wright Brother's greatest U.S. rival, she earned a name for herself flying "The Hump," the World War II aerial supply route from India to China over the Himalayan Mountains. This particular model is the gate guard at a museum in Hammondsport, NY, home of the famous motor cycle racer who founded the company

MYSTERY AIRCRAFT #5



The aircraft is the portly sister of the Mustang and the namesake of a tank-busting aircraft in the current USAF inventory. Her nickname is "The Jug." This particular plane is a former Indian Air Force craft now at the RAF Museum.