

Missions for America
Semper vigilans!
Semper volans!



The Coastwatcher

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

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

LtCol Stephen Rocketto, Editor
srocketto@aquilasys.com

C/SSgt Justin Ketcham, Reporter
C/Amn Virginia Poe, Cub Reporter
Lt David Meers & Maj Roy Bourque, Papparazis

Vol. VII, No. 40 06 November,
2013

SCHEDULE OF COMING EVENTS

09 NOV-Cadet Orientation Flights
12 NOV-TRCS Meeting-Commander's Call-Blues
16 NOV-CTWG Rifle Training
19 NOV-TRCS Meeting
26 NOV-TRCS Meeting

CITRUS FRUIT FUNDRAISER ENDS NEXT TUESDAY

The squadron's annual fund raiser has one week to run. Squadron members who have not received their sales packets should contact LtCol Rocketto.

ALL ORDERS MUST BE IN AT THE 12 NOVEMBER MEETING SO THERE IS NO TIME TO WASTE.

CADET MEETING

05 November, 2013

Cadets joined in a sequence of team building activities.

Maj Noniewicz briefed the cadets on the life raft carried in CAP aircraft on overwater missions. The raft, due for return for annual inspection, was inflated and the various features and equipment explained.

SENIOR MEETING

05 November, 2013

No formal training was planned. Senior members worked on individual training tasks or administrative duties.

RIFLE

CAP Cadet brothers Daniel and Michael Hollingsworth qualified for the Sharpshooter Badge and Sharpshooter Bar One Award respectively while shooting with the Quaker Hill Rod and Gun Club Junior Rifle Club on their Friday night program.

AEROSPACE CURRENT EVENTS

Airline Merger News

Southwest Airlines, which acquired AirTran two years ago, had completed the integration of the route structure by commencing service to Richmond, Pensacola, and Memphis. About a dozen other cities were cut from the new schedule.



Southwest operates a fleet entirely composed of Boeing 737s.

“spacewalk” and then returned to earth next week with three members of the present crew.

AirTran's 38 737-700s will bring the combined total near 600 aircraft.



AEROSPACE HISTORY

HURRICANES

by

Stephen M. Rocketto, LtCol, CAP

If the American Airlines-US Airways merger is allowed, Dallas-Fort Worth Airport, American's headquarters, is expected to become the second busiest airport in the United States, leapfrogging both Chicago's O'Hare and Los Angeles International. Hartsfield-Jackson in Atlanta, the Delta Airline headquarters will remain the leader.

Hurricane season has arrived and these spectacular displays in which the earth seeks to achieve thermal equilibrium engenders both wonder and terror.



Two AA Boeing 777s display the old (foreground) and new (background) liveries.



US Air varies its liveries. This Airbus 319 recognizes the past with its Piedmont tail insignia. Piedmont Airlines was absorbed into US Airways in the late 1980s.

ISS Crew Staffing to Hit Nine

The arrival of a Soyuz transport on Thursday will bring two Russians and one American to the International Space Station which already has six crew members on board. The Soyuz also carries the Olympic Torch which be taken on a

I can trace my fascination with hurricanes to 1954. The 1950's was a good decade for Atlantic hurricanes. In 1950, Atlantic hurricanes first received names using the military's phonetic alphabet: "Able, Baker, Charlie...." Three years later, the weather bureau switched to the use of female names. This new practice may have been suggested by George R. Stewart's 1941 novel, *Storm*, in which a meteorologist uses the name "Maria" to denominate a storm. During 1953 and 1954, a standard list of female names, "Alice, Barbara, Carol...", were used but in 1955, fearing confusion between storms in different years, six sets of names were established, to be repeated every six years. Names of notorious storms would be retired. This system stayed in effect until 1979 when men's names were alternated with women's names. At present, the World Meteorological Organization's Western Hemisphere Hurricane Committee follow this procedure with the addition of names in French and Spanish since these languages are used in the North American regions oft threatened by hurricanes.

However, the early '50s were not a good period for New England. In the previous half century, only one major hurricane had struck the northeast, the legendary Hurricane of 1938. However, in 1954, Carol and Edna plowed into New England and in 1955, Connie and Diane caused massive flooding. These were some of

the deadliest and most costly storms to ever strike. Diane was the first hurricane to cause a billion dollars worth of damage. Deaths caused by the four storms combined exceeded 200 souls. The probability of a major hurricane striking the Long Island Sound region is about twice per hundred years. Now, four had struck in a two year period. The death tolls cannot compare to the 8,000 to 12,000 who died in Galveston, Texas in 1900 but it was a different time, the federal government took note, and a new era in hurricane research was financed by a nervous Congress, spearheaded by Senator Francis Green of Rhode Island.

At the time, most of this fascinating detail was not known to me, an 12 year old boy, with not an inkling of his own finitude and mortality. But as the summer of 1954 waned and the specter of school loomed, I followed the newspaper accounts in our local paper, *The New London Evening Day* detailing the approach of Hurricane Carol. As the storm moved closer, old timers reminisced about their 1938 experiences and accounts of that infamous storm were published in the local papers. Preparations were made. Boats were moved or double moored. Aircraft were flown inland. Homes fronting the sea had their windows boarded, water was stored in jugs and tubs, and not a loaf or bread, quart of milk, or egg were available from New Haven to Point Judith as people stocked their larders for the coming crisis.

When I went out on the roof of our back porch, I could, through a gap between the trees and houses, see the storm warning flags at the Coast Guard Moorings at Fort Trumbull. The small craft pennant was successfully replaced by various gale warnings and I anxiously awaited the appearance of the pair of square red flags with square black centers that announced a hurricane.



I had read that you could actually lean into the 64 kt winds of a hurricane and not fall over. I had also read about the huge waves generated by such a storm and what 12 year old boy could resist such a tempting surf. I had a date with a capricious lady named Carol.

My cunning mind knew that my mother would not go along with my plan to front nature's fury. Heck, she did not even like it if I wanted to gambol in a summer rain shower. The expedition had to be *covert*. I told her that I would make my storm headquarters in my room and follow the events on my old Hallicrafter shortwave. As the storm moved towards maximum intensity, I made my move. My mother was occupied with housewifely duties and the CBS radio soap operas as I slipped out the front door. I couldn't don my slicker and galoshes since they were kept in the back hall and she would see me so I just had my summer garments and my Brooklyn Dodger baseball hat for protection from the elements. The cold wind-driven rain lashed at me as I made my way down the hill, across Caulkins Park and the New York, New Haven, and Hartford Railroad lines to the waterfront along Pequot Avenue. What a sight! The storm surge has pushed the water up and over the Thames embankments and the street was flooded. Boats, large boats, had been driven over the street and were now aground on the inland side. Piers were smashed and the strand of Green's Harbor Beach was submerged. I was impressed. Now I knew there was danger afoot. Mostly, I was worried about fallen electrical wires because my failed boyish experiments with electricity had already taught me about the invisible dangers of household current. What I did not know was that rain was not the only substance which the wind drove through the air. At that point, I noted that various solid objects, tree branches, the components of boats, and household construction materials also seemed to be

airborne. Mother Rocketto did not raise a complete fool.

I beat a hasty retreat along my original path. Reaching home, I peered through a window and noted that my mother was still in the living room with my younger brother and sister, knitting and listening to the portable radio. Power had now been lost. Shivering from the cold and from fear of discovery, I surreptitiously entered the house and silently crept up the stairs to my room, utilizing all of the skills of stalking which I had learned in Cub Scouts. I quickly stripped my sodden garments and donned dry clothes. Unfortunately, for some reason, my mother had made a round of the house and noticed the trail of water which I had left from the front door, up the steps, and directly into my room. She was most unhappy with me. My punishment was extreme. She didn't *even* yell at me but just gave me that "I am disappointed with you maternal look" which mothers have mastered through the ages. And since I couldn't be trusted alone in my room. I had to sit in the living room with her, my younger brother and baby sister, help her wind yarn, listen to soap operas like "The Romance of Helen Trent" and "My Gal Sunday" and wait for my father to get home. What is worse, I realized that in my excitement, I had forgot to lean into the wind and see if its force would support me against the force or gravity.

Older and more prudent, today I eschew wandering about in hurricanes without my slicker and galoshes. And I have amassed a rich trove of second hand hurricane experiences by reading about them. Recently, I improved my knowledge by participating in Operation Looking Glass, CAP's photographic mission to assess the damage caused by Hurricane Sandy. One of the best general texts about hurricanes is the *Hurricane Watch: Forecasting the Deadliest Storms on Earth* by Dr. Bob Sheets and Jack Williams. Dr. Sheets is the former director of the National Hurricane Center in Miami and Jack Williams is the founding editor of the *USA Today*

Weather Page. Both have long experience in tropical meteorology and communications and their book is a compendium of the history and current status of hurricane prediction. I particularly enjoyed their chapters on hurricane prediction models, the practical application of models to study Hurricane Floyd, and the future of hurricane predictions.

The mathematical prediction of weather phenomena is hampered by a number of factors. These include coarse resolution of the data field, the difficulty in acquiring data, more equations, I believe, than known variables, lack of sufficient computer power, and the fact that turbulence is once of the most complex problems in modern science. A noted specialist in quantum mechanics was once asked why he took up the problems of subatomic particles. He replied that the study of turbulence was too difficult. In the early days, pioneers like Irving Krick relied on statistical studies of past weather to make long term predictions. On the assumption that the future will resemble the past, they assembled data bases of past weather and tried to match the current situation to a similar one in the past. To a certain extent, this works. Warmer weather follows cold weather and wet weather follows dry weather as night follows day. However, the cost of evacuating a mile of coastline now tops a million dollars, lives are at stake, and, in our litigious society, the ramifications of bad forecasting may have legal consequences.

In order to predict the track, time and place of landfall, and storm surge, a number of computer models have been created. As might be expected, many have clever acronyms for names. CUPER (CLimatology and PERsistence), a early statistical program, is a "Krick-like" model based upon the assumption that the storm will maintain its current velocity in the short-term, say 24 hours. After 24 hours, it will move in the same way as previous storms with similar climatological parameters. I have experimented with this myself and for well-behaved weather

phenomena it works surprisingly well. However, hurricanes are like Monty Python's Spanish Inquisition and surprise is never far away.

AEROSPACE HISTORY

Hurricane Hunters and Their Aircraft

Hurricane investigation involving the use of aircraft have a history dating back to at least World War II. On 17 July, 1943, Lt. Col. Joseph P. Duckworth flew an AT-6 into the category one "1943 Surprise Hurricane" in the Gulf of Mexico. Duckworth penetrated the walls on two separate flights and entered the eye, recording his observations. Before the war, Duckworth flew for Eastern Air Lines. At the time of his hurricane flights, he was serving as the lead instrument instructor at Bryan AAF near Galveston, Texas.



The Air Force presents the Col. Joseph B. Duckworth Instrument Award annually to the individual or unit making the greatest contribution to aerospace instrument flight.

Galveston, recall, was the site of the horrendous 1900 hurricane, the deadliest in US history. The death toll ranges from between 8,000 to 12,000 human beings and even the low-ball figure is more than the total of all deaths in all hurricanes in US history.

The flights were provoked by an incident in the officer's club. A large group of combat tested RAF pilots were in Texas learning instrument flying. They had never experienced a hurricane and when they heard that the aircraft were to be flown out to prevent damage, they were incredulous and derided the sturdiness of the AT-

6. Duckworth decided to prove the rugged nature of the aircraft and bets were taken.

A North American AT-6 Texan similar to that which Duckworth flew on his hurricane penetrations.

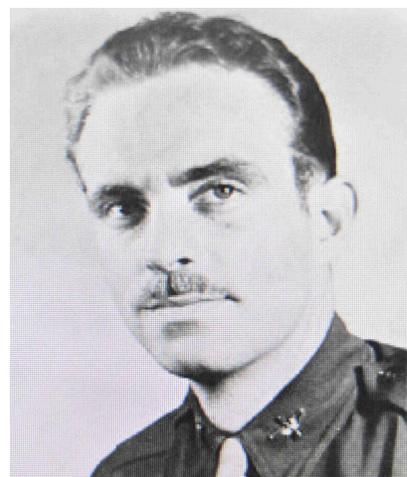


Anyway, Duckworth considered his two flights not only proof of the durability of the aircraft but also proof of the value of instrument flying methods. On his first flight, he carried navigator 2nd Lt. Ralph M. O'Hair. 1st Lt. William Jones-Budick, the base weather officer, then asked Duckworth for a second foray into the storm so that he could make some observations. Duckworth complied. He later returned to collect his winnings and some time after, received an Air Medal for the two missions.



Ralph M. O'Hair

*William Jones-Burdick
(USAAF Photos)*



Meteorologists soon realized the value of

hurricane reconnaissance and both the USAF and the USN formed squadrons dedicated to the task. In 1946, the specialists who flew into the hurricanes were labeled as “hurricane hunters” and the tag has become their appellation to this day. Navy squadrons generally carried a “VPW” designation for “heavier than air, patrol, weather.” After some time, the Air Force settled on the title of “weather reconnaissance squadron.

These daring aviators flew a wide range of aircraft: props, jets, and turbo-props. The favored aircraft are multi-engine turbo-props which are capable of economical cruising at relatively low altitudes. Here is a brief review of some of those aircraft.

The Navy first flew converted bombers, the Consolidated PB4Y Liberator, and its improved version, the PB4Y-2 Privateer and the Boeing PB-1W, a modified Boeing B-17G Flying Fortress.



PB-1W (US Navy Photo)



The PB4Y Liberator, known to the USAAF as the B-24 (US Navy Photo)

A Privateer was the first loss incurred in a storm. On 1 October 1945, a ship commanded by Lt(jg) Ralph F. Cook, USNR departed Clark Field in the Philippines and headed north to track a typhoon (the name given to hurricanes in the Pacific which was south of Taiwan. The wreckage of the aircraft was found on Batan Island, just north of Luzon.

Of six hurricane hunting aircraft lost, this was the only one from which bodies were recovered.



The PB4Y-2, in storage with the Yankee Air Force.

The second lost hurricane hunter was a Boeing WB-29 Superfortress. The aircraft, named Typhoon Goon II and under the command of Maj Sterling L. Harrell, penetrated Typhoon Wilma some 3000 miles east of the Philippine archipelago. The last report received stated that they were attempting a low level penetration of the storm using just a pressure altimeter since their radio altimeter was inoperative. Ten men were lost.



*Typhoon Goon II, lost in Typhoon Wilma
(photo credit: Arthur R. “Ray” Brashear”)*

The Pacific claimed its third hurricane hunter on 15 December, 1953 when a Navy PBY4-2S out of Guam was lost in Typhoon Doris. Like Typhoon Goon II, a low level penetration resulted in the disappearance of Cmdr Paul J. Newhall and his crew of eight. Tragically, the search for the missing aircraft, two of the searchers were lost adding 29 more fatalities to the list.

During this period of time, the Air Force started using Boeing's WB-50D and the jet propelled WB-

47 for weather reconnaissance. The Navy adopted Lockheed's WV-2 Constellation (EC-121) and P2V Neptune for the same role.



A WB-47E Stratojet, formerly displayed at the Bradley Air Museum and ironically, destroyed by a tornado in 2009.



A WV-2 departing Wallops Island circa 1969.

A Neptune was the next aircraft lost in pursuit of knowledge about hurricanes and it was the only loss to occur in the Atlantic. Snowcloud Five, based at Guantanamo Bay, Cuba was dispatched to investigate Hurricane Janet on 26 September, 1955. The aircraft was carrying a crew of nine and two reporters. Sixty aircraft, seven ships, and 3,000 personnel spent five days in a futile search for some signs of Lt. Cmdr. Grover B. Windham and his crew.



Frank Loudin Painting of Snowcloud Five

Typhoon Ophelia claimed the fifth hurricane hunter on 15 January, 1958. Capt. Albert J Lauer and a crew of nine in a Boeing WB-50 were sent to the storm, 500 miles west of Guam. Search and rescue conducted near 100 sorties totaling 1,200 hours of flight time but no signs of the missing aircraft were found.



WB-50D at Castle Air Museum

The last hurricane hunter lost was an Air Force WC-130H, call-sign Swan 38. After passing over the Philippines, Typhoon Bess turned west and headed out over the South China Sea. Swan 38, commanded by 1st Lt. Gary W. Crass and a crew of five departed from Clark AFB and made one successful penetration of the storm. As the set-up for their second penetration, all contact was lost and an intensive but futile four day search followed.



*Swan 38 lost in Typhoon Bess
(USAF Photo)*

The Navy got out of the hurricane hunting game in 1975 when their last weather squadron, VW-4 was decommissioned. They were flying the Lockheed WP-3A Orion at that time.

The Air Force continues to carry out the hurricane reconnaissance mission. Currently, the 53rd Weather Reconnaissance Squadron, USAFR, based at Keesler AFB, Mississippi is charged with the airborne acquisition of data from tropical storms and hurricanes. They fly the new Lockheed WC-130J Hercules.



Insignia and Aircraft of the 53rd Weather Reconnaissance Squadron.

The National Oceanographic and Atmospheric Administration (NOAA) have two Lockheed WP-3D aircraft and a Grumman G-IV SP Gulfstream based at McDill AFB near Tampa. The Orions fly the low altitude data gathering missions and the Gulfstream is charged with providing information from high altitudes.

NOAA's WP-3D Orions



*The NOAA G-IV SP
(NOAA Photos)*

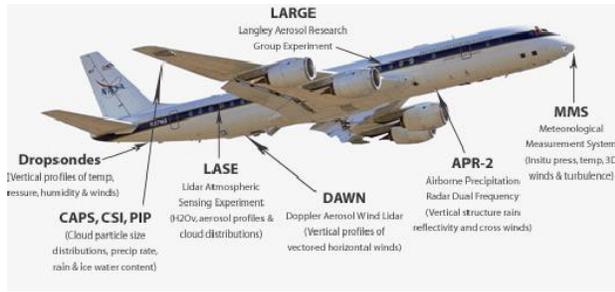
The National Aeronautics and Space Administration (NASA) is also involved in meteorological studies and sometimes specifically seek out tropical storms and hurricanes. They might use the Orion or Gulfstream but have several more esoteric aircraft in their stable. One is the Lockheed ER-2, the environmental research variant of the U-2. A second is the Martin WB-57F, the highly modified version of the B-57 Canberra bomber. The Douglas DC-8 has been specially instrumented and drones of several sizes up to and including the Global Hawk have also been utilized for weather research by NASA..



ER-2

WB-57F





DC-8



Global Hawk