



Mission for America

*Semper vigilans!  
Semper volans!*

Maj Neilson, Capts Noniewicz and Rocketto, Lts Heard, and Miller, and S/M Farley.

The Squadron wishes to extend its thanks to Dominion Power and the crewmen who brought in a bucket truck for the antenna installation.

# The Coastwatcher

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

website: <http://cap-ct075.com/default.aspx>

Vol. I No. 17

16 December, 2007

## Schedule of Coming Events

### December

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18 TUE Squadron Party  
19 WED CTWG Staff Meeting  
25 TUE Christmas Day/No Meeting

## SQUADRON PARTY

The Squadron will hold a Christmas party on Tuesday, 18 December commencing at 1900. Lt Wojtcuk is in charge of food. Contact her at [heartandsoul@snet.net](mailto:heartandsoul@snet.net) if you wish to contribute food. Dress will be civilian informal.

## WORK PARTY

A work party convened at the trailers on Saturday morning, the 8<sup>th</sup> of December. One crew worked on the skirting, a second crew mounted the new antenna, and several members traveled to Middletown to pick up extra desks and officer furnishings.

Officers present were LtCols Kinch and Wisehart,

## ANSWERS TO THE LAST QUIZ OF THE WEEK

1. OS2U stands for "Observation-Scout Model 2-Vought. Why was U assigned as the designation for Vought built aircraft? Would not "V" make more sense? Vought was a part of United Aircraft Corporation, hence the "U."
2. What is the designation (letters/number code) for the U.S.S. North Carolina? BB-55
3. On what river is that ship floating? The Cape Fear River
4. What is the caliber of the gun employed by the A-10? 30 mm
5. What is the name of the East Hartford Airfield which used to be operated by Pratt and Whitney? Rentschler Field
6. What previous mystery aircraft in this column employed a large central stabilizing float as its main landing gear component? Kawanishi N1K1 Kyoufu (Rex)

## QUIZ OF THE WEEK

1. What is the name of the mystery aircraft of the week?
2. Who designed the mystery aircraft?
3. If you enlarge the picture of the mystery aircraft, you can read its name on the nose. What is the name?
4. Identify the cartoon character who appears as nose art on the mystery aircraft.
5. The OS2U-1 Kingfisher was built by Vought-Sikorsky. You know about Igor. What was Vought's first name?
6. For FIVE more points, name five more Grumman aircraft with feline names. There are more than five, maybe nine!

## GROUND OBSERVER CORPS REDUX

The formation of aircraft from last week's edition were all powered by Pratt and Whitney Engines, a Connecticut product and were produced by Grumman whose main facilities were located on Long Island. The aircraft, from top to bottom are the F4F Wildcat, F6F Hellcat, F7F Tiger Cat, F-14 Tomcat, and F8F Bearcat. Cadets! Cat got your tongue?



Not one of you attempted to answer this question yet Cadet East prides himself on his knowledge of World War II aircraft and points are available to those participating in the Cadet-of-the Cycle Contest.

Will anyone try puzzler below?



*Mystery Aircrafts of the Week*

## SANTA CLAUS AND THE FAA

It was that time of year again and Santa had to take his annual biennial flight check. The need for a biennial each year was due to Santa's advanced age. The only man from the FAA rated in eight reindeer powered aircraft was assigned and made the trek to the boreal regions to administer the requisite oral, written, and flight testing and to conduct an inspection of the vehicle.

Santa was queried about the alphabetic zoo of airspaces, limitations on flight, and the complexities of transiting international air space. His documentation was examined: airworthiness certificate, registration, placarding, POH, waivers for unusual aspects of the annual flight, and restricted radiotelephone license were all checked. Finally, after a walk-around, they were ready for the flight check.

The FAA official briefed Santa on what might be expected, especially short and rough field operations. As they prepared to board the sled, Santa noticed that the FAA man was carrying a short barreled shotgun. "Hey," Santa said, "why the shotgun?" "Oh," answered the FAA man, "You're going to lose one on departure!"

## **THE WRIGHT BROTHERS**

**by**

**Stephen M. Rocketto**

*December 17<sup>th</sup> will be the 104<sup>th</sup> anniversary of First Flight at Kitty Hawk. The following article was originally published as Ex Libris VI in the Newsletter of the Network of Educators in Science and Technology at Massachusetts Institute of Technology, 1999 and was revised for this printing.*

Some half dozen years ago, I got involved in a project tentatively titled "From Kites to the Wrights," a proposed interdisciplinary curriculum package for celebrating the centennial of flight in 2003. My involvement in this effort started in typical fashion. Gordon Schimmel, the Superintendent of Schools in Mansfield, CT called Ralph Yulo, Professor Emeritus of Education at Eastern Connecticut State University. He asked Ralph if he might recommend anyone and Ralph mentioned me.

I have always liked projects like this one. Even if they do not fulfill their expectations, enough good material can be garnered to make it all worthwhile. Besides, the collegiality and fellowship of the other participants buoys my spirit and brightens my dour disposition. But this project was a real bonus. My earliest memories are entwined with things aeronautical. Flying, model building, and studying the history of aviation has diverted me from the mundane, emptied my pockets, and enriched my soul. So I eagerly seized the opportunity to minimize my sleep and complicate my life. Some people just cannot say "NO!"

One meeting led to another and the project has focused on developing a set of interdisciplinary modules centered on some sort of laboratory exercise or construction activity which is directly related to the experiences which Wilbur and Orville Wright underwent between 1895, when the first heard about the gliding experiments of Otto Lileanthal and 1905, when they produced the improved model of their 1903 Flyer. Emulating

the Wright Brothers, I entered into a bibliographical search of the literature which might assist me in producing one or two useful segments for the project. I was especially interested in the convergence of talents, social conditions, and technology which contributed to the Wright's success in controlled, powered, manned, heavier than air flight; a goal which was eluding many notable scientists and experimenters. Four books proved especially helpful. The first was Tom Crouch's biography of the brothers, *The Bishop's Boy's* (A Life of Wilbur and Orville Wright). The second and third were Octave Chanute's *Progress in Flying Machines* and Orville Wright's *How We Invented the Airplane* (An Illustrated History). Both of these volumes were readily available in Dover Publications editions. As an aside, Dover should be commended for their consistent policy of producing inexpensive reprints of seminal writings in science, mathematics, and technology. The last book which I considered was Peter L. Jakab's *Visions of a Flying Machine* (The Wright Brother and the Process of Invention). This is another of the fine Smithsonian History of Aviation Series. The two historical reprints would serve as a "reality check" as I considered the theses offered by Crouch and Jakab.

The best recent biography of the brothers is Crouch's, *The Bishop's Boy's*. Crouch develops a detailed and coherent narrative of the unusually close relationships among the Wrights, the father Milton, the sister Katharine, and especially, the youngest brothers, Wilbur and Orville. One of their favorite toys was a Penaud helicopter, a variation of the familiar rotor on a stick, which dances aloft when twirled by a sidewise motion of the hands or by the stored energy of a twisted rubber band. The 11 year old Wilbur tried, with little success to scale up this clever mechanism and exhibited a lifetime interest in building variations of this classic child's toy. The earliest business ventures of the brothers involved the construction and utilization of a series of printing presses and for a number of years, they were involved in the dual business of publishing and press manufacture. But in 1892, the bicycle craze swept into Dayton and they swiftly transitioned

from riders to sellers, repairers, designers, and manufacturers of the safety bicycle. They outfitted a machine shop, designed their own gas operated power plant, and engaged in the production of high quality machines. As the last five years of the century played out, Wilbur started to exhibit an interest in heavier-than-air flying machines, initiated by reading about the experiments in gliding which Otto Lilienthal had been carrying out in Germany. Wilbur read Marey's *Animal Mechanisms* and started to consider the problems inherent in building a flying machine. Both brothers were keen observers of animal flight and Orville stated that "If the bird's wing can sustain it in the air without the use of any muscular effort, we did not see why man could not be sustained by the same means." The use of the verb "sustain" indicates thinking beyond short glides, such as practiced by Lilienthal, to flights in which altitude is not constantly lost. They observed the wide variety of flying creatures and could not see any reason why, in principle, why many could not accomplish the same feat.

In 1899, the physicist Samuel Pierpont Langley was the leading experimenter in aerial enterprises in the United States. Langley, Secretary of the Smithsonian Institution and a scientist noted for his work in stellar astronomy, had in 1896, first flown a steam powered model and two years later, received a \$50,000 grant from the U.S. Army for the development of a man-carrying version of his Aerodrome. Wilbur wrote a letter to Richard Rathbun, Langley's assistant, requesting information on the current status of aeronautical science. Rathbun sent Wilbur a collection of pamphlets and a suggested reading list which included Octave Chanute's *Progress in Flying Machines*.

Chanute was a remarkable man with a national reputation as a surveyor of railroad lines, bridgebuilder and inventor. In 1888, Chanute retired and concentrated all of his attentions on a 30 year avocation, aeronautics. He compiled all of the experimental reports which he had collected during that time and published a series of articles which became the book *Progress in*

*Flying Machines*. A perusal of this text reveals that the book is a comprehensive study of the research from Chinese kites and Leonardo da Vinci's ornithopter in 1500 to the 1890's trials of Hiram Maxim, Lawrence Hargrave, and Lilienthal. But Chanute was not merely a researcher and archivist. He and his assistant, Augustus Herring, conducted over 2000 gliding experiments on the shores of Lake Michigan. Research and experiment led Chanute to the conclusion that the development of a method for aircraft control was the key to practical flight. The Wright Brothers concurred. However, the eminent Langley and the inventive Maxim were convinced that the evolution of a suitable power plant was the major problem to be solved. Furthermore, since most of the practitioners were doing their research with models, stability was a highly prized characteristic of any design. The Wrights, taking their cue from Chanute and Lilienthal, eschewed stability in favor of controllability. (This difference in design philosophy foreshadowed the arguments in the manned space flight program over automatic systems or pilot controlled vehicles. The U.S. astronaut corps forced the engineers away from the "Spam in a can" model favored by our designers and heavily utilized in the Soviet program.) The Wrights opened up a correspondence and a friendship with Chanute that was to continue until his death in 1910. Chanute personally visited their camp at Kill Devil Hill in 1901, 1902, and 1903 and served as their unofficial spokesman. Within several years, with Chanute's encouragement and assistance, the Wrights surpassed their mentor's achievements and Chanute saw the dream of practical flight achieved.

Orville's text, *How We Invented the Airplane*, is a succinct and profusely illustrated account of their adventure in invention. As might be expected, they were amateur photographers and carefully documented each step in the process of invention. The stark landscape of Kitty Hawk forms a dramatic backdrop. The poised figures at launch and the clean images of flight are a delight to the eye. Commentary is supplied by a Wright biographer, Fred C. Kelly. Their first personal

account to the public, a 1908 article from Century Magazine is included as an appendix.

This brings us back to the question of why the Wright Brothers were so successful when so many other people failed. After all, neither of them had completed high school, they were not part of the elite scientific establishment, and they lived in the Midwestern backwater of Dayton, Ohio. Jakab's *Visions of a Flying Machine* (The Wright Brother and the Process of Invention) successfully explains their achievement by examining how Wilbur and Orville were guided by their mechanical skills, scientific skepticism, "Yankee" pragmatism, and the technical spirit of the time in which they lived. Whereas Crouch is somewhat diffident in analyzing their engineering aptitudes, Jakab's spares no ink in a close analysis of the technical issues which confronted them and how they mastered each of them in turn. As a result, Jakab's book is more a philosophy of engineering rather than a discursive history of the process by which Wilbur and Orville built their Flyer. One can understand the Brothers as prototypical engineers and in their career, mark those qualities which are the hallmarks of good engineering practice.

They could clearly define a problem. In the case of their aircraft, they quickly understood, from their experiences with kites and bicycles and their technical readings, that control was the key to success. In order to produce an airplane one had to experiment with models and manned craft and if the craft were to be manned, they had to be controllable. In a clear vision of priorities, unlike many competitors, they postponed considerations of engines until they resolved the more fundamental issues. Basically, controllability and airfoil optimization could only be done by flying. This realization led to a series of experiments, in 1900, with kites and gliders. Operating at the remote site of Kitty Hawk, North Carolina, selected for its favorable winds, added logistical difficulties to their technical burdens. They developed the "wing-warping" technique for control but disagreements between the experimental values of lift measured and the theoretical values calculated from the standard

tables of their precursors revealed that the traditional data regarding what we now call lift and drag were in error. They also encountered the problem of adverse yaw, a phenomena which caused an aircraft when banked in one direction to point its nose in the opposite direction.

By 1901, they were somewhat discouraged but Chanute visited with them for several weeks and convinced them that, for all their difficulties, they were far in advance of the field. They did not quit and they modified their program to meet the difficulties which arose. Although the Wrights claim to have entered aviation as a sport, the "reluctantly entered upon the scientific side of it" and established a rigorous program for investigating the myriad variations of fluid mechanics such as airfoil geometries and pressure distributions. They then constructed simple devices for airfoil studies which culminated in their wind tunnel and by late 1901, had rectified the lift and drag tables and could find a rational relationship between their theoretical values and their experimental values.

Of paramount importance in their progress was their ability to visualize solutions. The "visions" in the title of Jakab's book refers not to some dream of a flying machine but to the specific mental constructs which allowed them to analogize between the abstract concepts of theory and the concrete products of the artisan's craft. It was once said of Kelly Johnson, the engineering genius of Lockheed's Skunk Works, that "he could see air." Likewise, Orville and Wilbur Wright could see, in their mind's eye, the relationships of forces and mechanisms which they turned into a wind tunnel, qualitative and quantitative measuring instruments, and ultimately, a practical airplane. Jakab argues that a facility for nonverbal thought was a key element in the Wright's success and my experiences with first class engineers supports this conclusion.

Much of their equipment was made from off-the-shelf supplies as their facile imaginations saw new possibilities in old things. The addition of a rudder, whose movements could be coordinated with the warping of the wings, corrected the

problem of adverse yaw. During this period another engineering asset, their skill with tools and their sensitivity for the materials of construction served them well since constant repairs were necessary to keep their delicate machines airworthy.

Consequently, during the next year, they completed around 1000 glider flights and started to acquire the aviator skills and experience which are needed to maintain the equilibrium of the aircraft in flight. Now they attacked the issue of motive power and did so in typical Wright fashion. They calculated how much power they required and then designed and built, with the assistance of their mechanic, Charlie Taylor, a 12 horsepower engine. Their past work with airfoils, and the ability to visualize that an "airscrew" was just an airfoil which rotated and followed a helical path allowed them to design and construct the first practical propellers. And so, on December 17th, 1903, Orville made the initial takeoff, flying a distance of 120 feet in 12 seconds. Three more flights were made that day, the final one piloted by Wilbur logged 852 feet in 59 seconds and the age of aviation was launched. Within two years, they had perfected the original machine and, in 1908, Wilbur captivated Europe with his flying demonstrations and personality.

The period of time during which the Wrights grew up was a time of great technological and cultural change. The railroads opened up the west and telegraphy and telephony opened new possibilities in communication. Automobiles and bicycles gave people a new individual mobility. Everything seemed possible. High school educations were not common and neither of the Brothers completed high school. But they were voracious readers, deeply curious, and possessed finely honed intellects. The Wright Brothers Collection at Wright State University in Dayton and the list of books which they took to Kitty Hawk indicates wide reading in the mathematics and sciences including technical publications in French and German. Their biographers indicate that their readings extended into literature, history, and philosophy. They were brought up to be confident and self-reliant and lived in an age

when such characteristics were prized. They entered into heated debates with each other over technical issues in which the give and take of the dialectic would lead to a solution to the problem under discussion. Yet their close personal relationship did not allow for the rancor which might have developed otherwise. These cultural and personal circumstances, melded to their methodical approach to problem solving contributed to their efficacy as engineers and makes them worth studying as a model of what engineering is all about.

### **EAST EAGLE AWARD**

C/SSgt Shawn East was awarded his Eagle Scout Badge at a ceremony held at the Quaker Hill Rod and Gun Club last Saturday.



Squadron attendees were C/MSgt Molinari and Cadets Scanell, Lexie and Abi Wojtcuk, Holt, Recruit Andrew Molinari, Parents, and Capts Bourque and Rocketto.

### **FRUIT SALE DELIVERY**

On Tuesday, 10,000 pounds of citrus fruit were dropped off at E.T.Grasso Technical School. Cadet and parent volunteers and members of the Grasso and Montville High School Rifle Teams unloaded the semi-trailer and transferred the produce to smaller vehicles. Cadets Lexie Wojtcuk, Abi Wojtcuk, George Abbiati, and Mr. Wojtcuk and Mr. Molinari were present.

Approximately 8,000 pounds was moved to our trailers where they were sorted and distributed in an all-hands evolution that evening. Delivery was

made to our customers and the Stratford Eagles, New Haven Minutemen, Hartford's Royal Charter, and the 103<sup>rd</sup> from East Granby.



*Unloading the Semi-Trailer*



*Flat-Bed Delivery to Trailer*

### **SEWING BY BETTY**

Mrs Betty Allard provides sewing, mending, and alterations for uniforms. Her rates for sewing on insignia are reasonable and her work first class. She lives in Oakdale and can be reached at 848-0894.

### **CADET MEETING MINUTES**

*11 December, 2007*

The meeting was used to sort and distribute fruit.

Cadets were asked to volunteer for a Squadron Sarex on the coming Saturday and were notified about Orientation Flights which will be held during the upcoming school holiday.

Cadets Jesse Brohinsky and Shawn East were issued their Wright Achievement certificates.

### **COMMANDER'S COMMENTS**

*11 December, 2007*

The section is a summary of the information discussed at the monthly Commander's Call.

1. The New York Sectional Chart expired on 22 November 2007 and a new one is available. All aircrew members should have a current Sectional Chart and the chart should be properly gridded.
2. The importance and methodology of WIMRS procedures was explained.
3. The following Officers were presented with promotion certificates 2Lts Robin Wojtcuk and Christopher Manner, Captain Paul Noniewicz
4. Long Island Sound Patrol duties will expand in 2008 and Homeland Security missions are under consideration.
5. The Wing Finance Officer, Captain Tucker, is out of country and his deputy, Lt. Conway is covering his duties.
6. Chris Kelling has been appointed Wing Communications Officer. Mr. Robert Sealol will assist individual squadrons with communications issues.
7. The Cadet Summer Encampment will be held at Norwich University, VT from the 2nd to the 10th of August. The camp fee is \$150 and Wing has advised that some financial assistance will be available.
8. The State provides assistance to CAP through the Public Safety Department. Col Jensen is investigating the possibility of transferring CAP to the State Military Department.

9. Capt Noniewicz presented a safety briefing which focused on issues arising from the colder weather and the holiday season
10. Lt Heard distributed cards which listed members and contact information for those officers on the primary alert list. Col Kinch explained the procedures which will be followed for a mission alert.
11. The Squadron Christmas Party will be held next Tuesday, 18 December. Anyone who wishes to contribute food should contact Lt. Wojtcuk at [heartandsoul@snet.net](mailto:heartandsoul@snet.net).
12. Squadron Duty Positions were announced. The full list will be published shortly.
13. Capt Noniewicz announced that a Squadron SAREX Training session will be held on Saturday. Members who wish to participate should contact him at [pnono@adelphia.net](mailto:pnono@adelphia.net)



*Quonset Bivouac*



*The thought is was a food line but it was a FOD march.*



*Inbound to Brainard!*



*I know you're a Major but you cannot just park anywhere you please!*



*Cadets are not the only ones hitting the books!*



*Why is this Cadet grinning?*