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

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SCHEDULE OF COMING EVENT

24 JUN-TRCS Meeting-Finance Committee Mtg.
28 JUN-Columbia Open House

04 JUL-GON Parade and Squadron Picnic
07-11 JUL-ACE Academy I (GON)
09 JUL-MIT Aero and USS Constitution-tentative
18 JUL, 2014-CTWG Golf Tournament
19 JUL-02 AUG-Nat'l Emergency Services Acad.

08-16 AUG-CTWG Encampment-Camp Niantic
11-15 AUG-ACE Academy II (GON)
23 AUG-Wing Wide SAREX-HFD

20 SEP-Cadet Ball-USCGA (tentative)
01 OCT-CTWG Commander's Call and CAC
17-19 OCT-CTWG/NER Conference
16-18 OCT-NER AEO Course at Conference
18-25 OCT-NER Staff College-New Jersey

CADET MEETING
17 June, 2014
submitted by
C/SSgt Michael Hollingsworth

The cadets began the evening with thirty minutes of drill.

After returning to squadron, the cadets participated in an emergency services exercise and learned how to strap in a person into the litter and lift it safely.

C/CMSgt. Johnstone presented a safety lesson on heat exhaustion and heat stroke.

Lt. Col. Rocketto presented a forum to basic cadets on the purposes and structure of the character development program.

The last twenty minutes was used for cadet flight time.

SENIOR MEETING
17 June, 2014
Submitted by
Capt. Christopher L. Magee

No formal training occurred. Officers worked on individual projects.

TRCS PHYSICAL PROPERTY
INVENTORY
submitted by
Maj Paul Noniewicz

On Thursday, 05 June, MSgt Halloway, USAF conducted an audit of our supplies and communications equipment inventory. Majs Willi Lintelmann and Scott Farley represented TRCS.

No discrepancies were found. Both Logistics Officer Lt Sonia Simpson and Maj Lintelmann are commended for the time and care spent of preparing our inventory for inspection.
TWO MORE LISP MISSIONS AND AN ALMOST FLOWN

On the weekend of 14-15 June, TRCS successfully completed two more Long Island Sound Patrols.

On Saturday, Maj Scott Farley, mission pilot, flew with LtCol Steve Rocketto, Observer, and Lt David Meers, Scanner/Photographer for an afternoon patrol. Boating activity was low and the maritime radio frequencies were relatively quiet in Coast Guard Sector Long Island Sound's bailiwick. The aircraft flew the “cold water route” and the crew practiced location identification, aerial photography techniques, and marking locations of interest with the GPS.

Traffic Congestion on the Thames
A returning fast attack submarine escorted by a tug and three patrol boats passes the Orient Point Ferry and a sailboat.

Traffic Congestion Over Waterford
N482CA passes a National Guard CH-47 Chinook.
(Photos by Lt David Meers)

One flight were conducted on Sunday. The patrol was piloted by LtCol Tom Wisehart with Capt Ed Miller riding as observer and LtCol Rocketto as scanner/photographer. Boating activity picked up and both distress (mayday) and urgency (pan) messages were heard but all were in adjoining Coast Guard sectors, outside of our patrol area. One transmission reported a dead whale and a second reported a floating 30 foot tree as a hazard to navigation.

A third flight was cancelled due to a streak of yellow, not down the backs of the aircrew but rather across a line in the on-line Web Mission Information Reporting System (WMIRS), CAP's mission management tool. The yellow color of the mission request indicated that, for some unknown reason, it had not been approved. The aircrew, Maj Paul Noniewicz, LtCol Rui Rodrigues, and LtCol Rocketto contacted a flight release officer and waited for over an hour but the yellow never turned to green. Later, the crew learned that new procedures instituted by First Air Force require that the flights be entered into WIMRS on the Monday preceding.

Through the good offices of Flight Release Officer Scott Farley and the I Phone carried by Rodrigues, a training mission was entered and flown. The crew flew a round robin to Newport State Airport, did an RNAV guided low approach to runway 22, photographed coastal features on the return to Groton, and practiced an emergency procedure.

AEROSPACE CURRENT EVENTS

USAF Pilot Training Requirements
Upgrade or New Aircraft?

Currently, the USAF has three separate tracks for specialized undergraduate pilot training. Airlift and tanker candidates slotted to fly the C-17, C-130, and KC-135, and KC-10 train in the Beech T-1A Jayhawk. Rotary wing pilots, H-60 and CV-22, receive their primary training in the Jayhawk and then move on to their specialized aircraft. Some of these Jayhawks are also fitted out with the electronic suites needed for Combat Systems Officer training. The fighter and bomber trainees use the Northrop T-38C Talon before moving on to the postings in the F-15, F-16, F-22, A-10, B-52, or B-1.
The T-1A is a military adaptation of the Beechcraft 400A which was originally the Mitsubishi MU-330. The military model has a beefed-up structure, a reinforced windscreen, and carries extra fuel.

A Jayhawk of the USAF 479th Flying Training Group based at Naval Air Station Pensacola.

The Jayhawk has never received sufficient upgrades to meet current and pending standards in electronics: glass cockpit, GPS, traffic collision awareness system (TCAS), automatic dependent surveillance broadcast (ADS-B). Their airframes will also need a service life extension program by 2032.

The Air Force has been planning to spend $313 million dollars for an avionics upgrade but the Senate Armed Services Committee's latest version of the defense spending bill requests that the Air Force also consider buying or leasing a different aircraft capable of assuming the Jayhawk mission. Before his request is official, the House Armed Services Committee must concur.

Eclipse Aerospace or Albuquerque, N.M. have offered to provide their Eclipse 550 as a replacement aircraft, either through direct purchase or lease. The aircraft already had NextGen-compliant avionics and the company claim is that $11 billion will be saved over the next two decades in operations and sustainment costs since the Eclipse has a much lower fuel consumption rate and the newer aircraft will require less maintenance.

AEROSPACE HISTORY

A Short History of Aerial Photography
by
Stephen M. Rocketto
Part Two
World War II
(1939-1945)

George Goddard and other enthusiasts of aerial photography labored through the Roaring Twenties and the depression years of the 1930s. The thrust of their efforts were devoted to mapping surveys. Connecticut was one of the first states to benefit from this planning tool. In he 1920s, Governor John Trumbull, a pilot for whom Groton's Trumbull Airport was named, received tenders from Fairchild Aerial Surveys but as is often the case, money was not available.

However, in 1934, Fairchild and the State Planning Commission came to an agreement. Ground free of snow cover and the foliage cover
was minimal so in March and April of 1934, four aircraft, three Fairchild's and a Douglas O-38E from the 118th Observation Squadron of the Connecticut National Guard commenced operations using Fairchild K-3 cameras with a 9.5 inch focal length and F/4.5 lenses. Each exposure was recorded on a 7.5 in by 9 in frame at a scale of 1 inch to 1,200 feet. Vertical exposures were taken at an airspeed of 100 mph from 11,400 feet with a 50% overlap. The 5,000 square miles of the state were covered in 153 flying hours using just under 10,500 frames of film.

On return to England, Cotton became an agent for Dufaycolour film and flew around the continent marketing the product and promoting several other business schemes. Frederick Winterbotham, a member of the Air Section of the British Secret Intelligence Service (MI-6) realized that Cotton had a ready made cover for aerial espionage and recruited Cotton. Cotton's new company, Aeronautical Research and Sales, acquired, with the assistance of His Majesty's Government, several Lockheed Model 12A Electra, Jr. aircraft. The new “company” planes were equipped with vertical and oblique viewing cameras hidden under cunningly designed sliding panels and an unobtrusive switch in easy view of the pilot. The paint scheme was a duck-egg green specially ordered by Cotton which blended nicely with the sky background. One of the aircraft were fitted with long range tanks and a “bubble” window, invented by Cotton, to allow the pilot a view directly below the aircraft.

Goddard and the US Air Service were also active during this time. Surveys were completed in Alaska, the Philippines, and the Tennessee Valley and maps were revised from the data acquired. These mapping surveys kept the field alive and led to improvements of equipment but the tactical and military uses of aerial photography were basically ignored during these times. Then, war clouds arose in Europe and Asia and military planners resumed their interest in the intelligence aspects of aerial photography.

The interwar years found a free-wheeling, innovative, Australian veteran of the Royal Naval Air Service (RNAS) veteran named Sidney Cotton moving from continent to continent trying to make an honest shilling. Cotton had already achieved a modicum of fame for his invention of the Sidcot flying suit, a multilayered windproof and insulated coverall which became a standard for open cockpit aviators. He spent three years in Newfoundland where he participated in a number of aviation enterprises, flying some search and rescue missions, air mail, and an attempt to establish a seal-spotting business.

The aircraft made a number of flights over Europe and the Mediterranean basin. Two months before the German invasion of Poland, Cotton made several excursions into Germany ostensibly to market film. The Germans were impressed by the aircraft and requested flights. Cotton obliged and used the opportunities to take even more photographs while German military officers were aboard!

When the shooting started, Cotton received a special appointment as an RAF officer and established the Photographic Development Unit (PDU) which was to become the Photo Reconnaissance Unit (PRU). He argued that the best aircraft for PR were small, fast, and high flying. After much resistance from higher authorities, he obtained several of the precious
Spitfires which he stripped of armament and armor, painted duck-green blue, and polished the wings and fuselages. The lightened and camouflaged aircraft could outrace and outclimb the German interceptors, performance features which are the *sine qua non* of PR aircraft to this day.

Specialized British photo planes were so good that the USAF adopted two of them for their own air intelligence operations. Both a Spitfire and a Mosquito are both on display in the Museum of the USAF in their special camouflage.

Cotton's departure from the RAF mirrored his departure from the RNAS two decades earlier. His Aussie brashness and aggressiveness in obtaining the resources needed for his projects no irritated the aristocratic hierarchy who commanded and who, no doubt, questioned his qualifications as a “gentleman.” Once the PDU was running smoothly, Cotton was replaced by an regular RAF officer and the PRU entered the RAF's order of battle.

Cotton continued contributing towards the war effort. He conceived of and worked on the development of the “turbinlite,” a powerful searchlight which was attached to the A-20 Havoc used by the British as a night interceptor. When the war ended, he ran guns to Hyderabad when India invaded, attempted to gain oil concessions in Saudi Arabia, married for the third time, made money, lost money, and died broke.

Surprisingly, his most famous Lockheed Junior spy plane, G-AFTL, still exists, registered as N12EJ in Vancouver, Washington. The plane was damaged in bombing raid and returned to Lockheed for repairs. It then was transferred to Lowell Yerex, a New Zealander who founded a number of airlines in Central America and the Caribbean. At one time, it belonged to Art Scholl and appeared in a number of Hollywood films. At present, it is in Vancouver, Washington in the hands of a private owner.
Lockheed 12A G-AFTL, Cotton's most famous plane.

Well known author Antoine de Saint-Exupéry flew photo-missions with the Armée de l'Air during the German invasion of France in 1940. One of his missions resulted in a well known book, published in the United States as Flight to Arras. The book is less a story about flying than a treatise on the nature of war.

Early in 1940, St.-Ex flew a Bloch 174 in a mission to determine the extent of the German penetration of French defenses. With a crew of two and, initially, a fighter escort, he departed Orly and reconnoitered several areas of interest at altitudes varying from 1000 feet to 150 feet. The fires burning in Arras were seen but storm intervened and they lost their fighter escort. A strong force of enemy tanks was noted southwest of the city preparing to attack. Flak damaged the aircraft and they started losing oil. After 1 hour and 40 minutes, they returned to base.

Pop Polifka in F-5R named RoseMarie.
(DoD Photo)

The doyen of RAF reconnaissance pilots was Adrian Warburton. He tangled with his commanding officer, ran up debts, and was “exiled” to Malta. Malta was the hot spot in the Mediterranean, located between Italy and North Africa, it occupied an ideal position to interdict the German and Italian supply lines to their forces in Libya, Tunisia, Morocco, Algeria, and western Egypt. The Italian and German forces kept the island under siege for two years and it suffered enormously from one of the heaviest bombing campaigns in history. During one period, raids occurred for 154 straight days and nights!

But Malta was an ideal base for a flyer of Warburton's temperament. Somewhat ham-handed
on take-offs and landing and rated a mediocre pilot, he displayed superior airmanship once off the ground. Seemingly with fear and with the superb navigational instincts, he had the navigational instincts of a homing pigeon and flew the Martin 167, a US export from Glenn Martin's Middle River Factory outside of Baltimore.

Named “Maryland” but the British, the aircraft lost the attack airplane contract to the Douglas A-20 Havoc but was eagerly snapped up by the British and French at the start of the war. It was armed with four machine guns mounted in the wings and a two other guns, mounted in ventral and dorsal hatches. Although Warburton's Malta based missions were primarily reconnaissance, he never lost the opportunity to tangle with enemy aircraft and downed five with the wing guns, the only bomber pilot to achieve ace status.

In one of the most audacious operations of the war, the British decided to attack the Italian battle fleet, at anchor in Taranto Harbor. Warburton flew a daylight mission to locate the position of the ships and when his cameras failed, made two low altitude passes so his crews could read off the names of the capital ships. Supposedly, he returned with a length of a ship's radio aerial hooked to his plane.

Warburton and his crew then flew a second mission, at high level, determining the positions of the barrage balloons and torpedo nets. That night, 10 November, 1940, British aircraft carriers launched about two dozen Swordfish torpedo bombers, 100 knot biplanes, which sunk three Italian battleships. The next morning, Warburton secured the post-strike photos. A Japanese naval attaché flew in from Berlin and then reported his finding to Commander Mitsuo Fuchida, the airman who led the Pearl Harbor attack.

Warburton continued to fly recce missions in the Med and offend the RAF hierarchy. He played cards with his mechanics, worked with them on his aircraft, maintained a questionable social life, and dresses as he pleased. Nonetheless, he delivered results and was high decorated.

In 1944, Warburton was assigned as liaison officer to the US 7th Photographic Reconnaissance Group based at RAF Mount Farm. He continued to fly missions, racking up over 350 combat sorties, often dressed as in a U.S. uniform and flying the F-5B. On the 12th of April, 1944, Warburton departed Mount Farm for a mission over Germany and, like Saint-Exupéry, disappeared. But like Saint-Exupéry, the wreckage of his aircraft was found 52 years later, buried under seven feet of sod in a Bavarian Field.

The pilots get the glory but without photo interpretation, the images are useless. One of the best known practitioners was journalist Constance Babington-Smith. She worked at the British Central Interpretation Unit at RAF Medmenham. In April of 1943, she was tasked to look for unusual aircraft. In June, she discovered the Me 163 rocket interceptors and in November discerned a small aircraft mounted on a launching ramp, the V-1 cruise missile. She and some of her colleagues specialized in identifying launch sites and new aircraft, sometimes the only clue being scorch marks on the ground.
After the war, Babington-Smith continued a career as an author and journalist. Some of her work reflected her interest in aviation. Her well received book, *Air Spy*, was a treatment of British photographic intelligence. She also published a book on test pilots and a biography of aviatrix Amy Johnson.

The importance of aerial photography led to a USAAF decision, during the war, to contract for a dedicated photo plane. Up to that time, designated photo planes were adapted versions of standard fighters and bombers.

For the record, variants of the following aircraft were modified to the extent that they received the “F” designation as photo ships:

F-1 Fairchild C-8  
F-2 Beech C-45 Expeditor  
F-3 Douglas A-20J/K Havoc  
F-4 Lockheed P-38E Lightning  
F-5 Lockheed P-38G Lightning  
F-6 North American P-51 Mustang  
F-7 Consolidated B-24D/J/M Liberator  
F-8 DeHavilland Mosquito  
F-9 Boeing B-17F Flying Fortress  
F-10 North American B-25 Mitchell  
F-13 Boeing B-29A Superfortress  
XF-14 Lockheed YP-80A Shooting Star (one off)  
F-15 Northrop Black Widow

The Axis did not neglect photo-intelligence aircraft. Germany built the Junkers Ju 86-P1 and P2. These aircraft were pressurized, powered by liquid-cooled diesels, and could attain an altitude in excess of 40,000 feet. Some were built under license in Sweden.

The Japanese flew an aircraft known to the Allies as the Dinah. It was built by Mitsubishi and designated as the Ki-46. Some of these were modified as last-ditch interceptors against the B-29s.

The end of the war led to termination of most military contracts but two prototypes for two potential photo aircraft were let to Hughes Aircraft and Republic Aircraft. The two aircraft types which were built and accepted for trials were the
Hughes XF-11 and the Republic XF-12. The military required high flying, fast, long range aircraft. Although both aircraft were designed to meet the same specifications, they were radically different in design. Hughes built two prototype XF-11s which superficially resembled the twin engine, twin boom Lockheed P-38 Lightning. However, it had twice the length, width, height, and horsepower of the Lightning and three times the wing area. It also used the somewhat temperamental Pratt & Whitney 4360 Wasp Major engine, Pratt's last radial engine and the largest aircraft piston power plant built in production quantities. The engine had four banks of seven cylinders and to facilitate cooling the cylinders were arranged in a helical arrangement like the kernels on corn which led to its label as a “corn cob” engine. In the first XF-11 prototype, the engines drove twin counter-rotating propellers.

Elliot Roosevelt, son of the President, was for some time an officer serving with the combined Allied reconnaissance forces in North Africa and the Mediterranean. His career was tainted by a number of allegations that he received his aeronautical ratings and rank due to nepotism. But more seriously, he became involved with the XF-11 contracts issued to Hughes Aircraft and accused of exerting influence to have the XF-11 adopted. Roosevelt and his associates had been the subject of a heavy lobbying by Johnny Meyer, a Hughes publicist, who lavished them with generous gifts. He was called to testify to a U.S. Senate committee after the war but no proof was ever offered of impropriety.

Howard Hughes was intimately connected with the development of his company's aircraft. He also served, on occasion, as test pilot. The eccentric Hughes was not known as a slave to procedure. His familiarity to a check list was restricted to bank account statements and his pre-flight procedures might involve kicking the tires. The XF-11 had gone through a series of ground runs and the mechanics discovered that the oil seals on the shaft of the starboard engine had been leaking. On Sunday, 7 July, 1946 after a weekend of partying, Hughes, without notifying his ground crews, showed up at the plant's airport in Culver City and, wearing his favorite fedora and street clothes, boarded the XF-11. He also doubled the planned fuel load and refused the offer of a flight engineer to accompany him.

An hour into the flight, what might have been a landing gear problem distracted him. Without warning, the right rear propeller went into reverse pitch and the increased drag caused the aircraft to both lose altitude and flight stability. Hughes, apparently thinking that the gear was the problem, undid his safety harness so he could peer over the edge of the cockpit to visually check the gear compromising his ability to plan for an emergency landing. The aircraft crashed and burned and Hughes suffered serious burns, broken ribs, a punctured lung, and a broken nose. Hospitalized for a month, he left with pain and a drug habit which would follow him all his days.

Amazingly, a year later, Hughes flew the second prototype, now equipped with single propellers on each engine!

The aircraft was then delivered to the Air Force for performance and operational testing. It was found wanting operationally due to its cramped camera compartments and trouble with its electrical systems and turbo-superchargers. She ended up at Sheppard AFB for use as a ground maintenance trainer and was eventually scrapped.

The Republic XF-12 bore the hallmarks of Republic's chief designer, Alexander Kartveli.
Kartveli was responsible for the formidable P-47 Thunderbolt and had a hand in the entire line of jet “Thunder-” aircraft produced by Republic. The XF-11 was radically different from the Hughes design. It used the same Pratt Wasp Majors but had four of them, faired into a high aspect ratio wing attached to a sleek fuselage. Engine cooling was handled by unique “sliding ring” set of cowl flaps which eliminated the drag of normal cowl flaps and the leading edge of the wing, between the engines, housed intercoolers for air intake which further reduced drag. Additional power was added by ejecting the engine gases directly aft through large elliptical exhaust ports. The result was that Republic produced the fastest four engine pistol aircraft in history, cruising at over 400 mph.

The commodious fuselage housed a bomb bay for flash bombs and the ability to carry a wide range of camera gear an film stock accessible to the crew. A darkroom was provided for in-flight film processing. In 1948, one of the aircraft crossed the United States from west to east cruising at 40,000 feet and averaging 360 mph. During its seven hour flight, the crew took a continuous set of 390 photos, each with a width of 490 miles.

But the XF-12, now re-designated XR-12, was never to enter the USAF inventory. The age of the turbo jet made piston engines militarily obsolete.

The cheaper options of using modified bombers made an attractive alternative as the Air Force waited for its new jets. Republic's hope to produce the XR-12 as the Rainbow airliner also collapsed with the availability of cheap war surplus transports and the dawning of the jet age. One of the XR-12s crashed in the Gulf of Mexico and the second ended up, ignominiously, as a target at the Aberdeen Proving Ground.

The hot war was over and the lessons learned about the values of photo-intelligence faded in the race to demobilize and return the economy to a peace time status. But at Westminster College in Fulton, Missouri, Winston Churchill made note that

A shadow has fallen upon the scenes so lately lighted by the Allied victory. Nobody knows what Soviet Russia and its Communist international organisation intends to do in the immediate future, or what are the limits, if any, to their expansive and proselytising tendencies....

From Stettin in the Baltic to Trieste in the Adriatic, an iron curtain has descended across the Continent. Behind that line lie all the capitals of the ancient states of Central and Eastern Europe. Warsaw, Berlin, Prague, Vienna, Budapest, Belgrade, Bucharest and Sofia, all these famous cities and the populations around them lie in what I must call the Soviet sphere, and all are subject in one form or another, not only to Soviet influence but to a very high and, in many cases, increasing measure of control from Moscow.

The Cold War had started and no other purpose built photo planes would be built until Kelly Johnson's Lockheed Skunk Works produced the U-2 and the A-12/SR-71 to answer questions about the military preparedness of our former ally, now our principal adversary. Cold War photo-reconnaissance efforts will be covered in the next installment of this series.