

Missions for America

*Semper vigilans!*  
*Semper volans!*



21-25 JUN-National AEO School  
9-16 JUL-RSC-McGuire AFB  
9-16 JUL-Reg. Cadet Ldrshp School-Concord, NH  
23 JUL-07 AUG-NESA (two sessions)  
08-14 AUG-CTWG Encampment  
13-20 AUG-Reg. Cadet Ldrshp School-McGuire  
17-20 AUG-CAP Nat'l Summer Conference  
22-24 SEP-AOPA Summit-Hartford  
22-23 OCT-CTWG Convention

## The Coastwatcher

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

<http://capct075.web.officelive.com/default.aspx>

S. Rocketto, Editor  
srocketto@aquilasys.com

C/2Lt Flynn, Cub Reporter  
1Lt Scott Owens, Paparazzi

Vol. V, No 12

24 March, 2011

### SCHEDULE OF COMING EVENTS

#### For Future Planning

Cadet meetings normally start with drill and end with aerospace history, current events, and Commander's moment. Blues are worn on the second week of the month and BDUs at other times. Main topics will be indicated on the schedule below. See website for updates.

29 MAR-Preparation for Tri-State SAREX

01-03 APR-Tri-State SAREX

07 APR-GON AOA renewals-1000 hours

16 APR-CSRRA High Power Rifle Clinic

13-15 MAY-CTWG Great Starts

21-22 MAY-Corporate Learning Course (tentative)

### CADET MEETING NOTES

*22 March, 2011*

*reported by*

*Capt Robin Wojtcuk*

The meeting commenced with drill.

Maj Bourque then led the Cadets to Bluff Point to practice ES GTM3 tasks: marking a route, attraction techniques, and visual scanning. The differences between SAR in the winter and other seasons were discussed. SQTR forms were filled out as required.

Due to conflicts with encampment and the cadet ball, the Squadron will not be able to perform its community service function at the Mitchell Farms events.

Cadets are encouraged to submit their applications and checks for Great Starts and CTWG Encampment as soon as possible.

Cadets should check our web-site<sup>4</sup> for changes in cadet-teacher assignments in leadership classes.

### SENIOR MEETING NOTES

*22 March, 2011*

Major Rocketto, the Professional Development Officer, , briefed the Squadron on the duties of the PDO and outlined the basic format of CAP's Professional Development Program.

Handouts listed key web-site addresses, showed the relationships between professional development and rank, and explained the Professional Military Equivalencies. The selection of specialty tracks, the Aerospace Education Program for Senior Members, and the use of "Member Search" to check achievements, qualifications, and expiration dates were also discussed.

The balance of the meeting was a planning session for the upcoming Tri-State SAREX. Maj Neilson and Capt Noniewicz will go to Danbury to serve as Air Operations and Safety Officer respectively. Groton will operate as a second mission base under the direction of LtCol Bergey. The Squadron plans on fielding two full aircraft crews and a ground team.

### **AEROSPACE CURRENT EVENTS**

#### ***Sikorsky X2 Team wins Collier Trophy***

The century old Robert J. Collier Trophy has been awarded to Sikorsky Aircraft Corporation's X2 Demonstrator Team "for demonstrating a revolutionary 250 knot helicopter." The award selectors, the National Aeronautic Association state that the X2 "marks a proven departure point for the future development of helicopters by greatly increasing their speed, maneuverability and utility." Features of the X2 include counter-rotating rotors, fly-by-wire controls, and a unique anti-vibration system.

#### **US and Mexico Confirm Drone Flights**

The Mexican government has authorized the use of US drones to collect intelligence on the activities of the drug cartels. Customs and Border Protection has been flying Predators into Mexico for two years.

### **AEROSPACE HISTORY**

#### **Notes on Aircraft that did not Make the Cut Losers and Winners**

Lt Edward Miller, an aeronautical engineer from Thames River Composite Squadron, has been presenting a series of lectures at CTWG squadrons on aircraft design. He has noted that sometimes good, even great design, may not result in adoption of the aircraft. It might be instructive to examine a few examples in order to illustrate his point.

From time to time, two companies end up competing for the same contract. A "fly-off" might determine which design will win and be ordered in quantity. Sometimes, political or economic considerations cause the cancellation of a promising design and a substitute is chosen. This article will deal with some short case studies of these interesting incidents in the history of aviation.

#### ***The Flying Wing Conspiracy? 1946-1947***

Even before the United States entered World War II, the possibility that England might fall caused military authorities in the US to consider the construction of an very long range bomber; one which might reach continental Europe from bases in North America. Convair was chosen as one contractor. A competing contract was issued to Northrop Aircraft. Consolidated proceeded to design an aerodynamically orthodox aircraft designated as the XB-36. Northrop chose a different path and produced the heterodox XB-35, a flying wing.

Needless to say, the enormous size of the XB-36 and the radical design of the XB-35 forced many design changes and delays in production. Both craft were flying in 1946

Originally, the XB-36 sported six pusher propellers but in time, four jet engines were added in pods outboard of the piston engines in order to supply the required lift capacity and speed.

Likewise, the XB-35, powered by four piston engines morphed into an eight engined jet, designated the XB-49.



*XB-35*  
(Northrop Photo)



*RB-36H*  
*Castle Air Force Base*

Others say that the flying wing design was a poor bombing platform due to direction instability and that the Air Force preferred the more conventional design of the B-36.

### *Super Crusader vs Phantom II* 1958

Vought Aircraft had produced the F8U Crusader for the Navy and Marines. When a successor was needed, Vought chose to upgrade the Crusader into the XF8U-3 Super Crusader which competed with McDonnell's F-4, Phantom II. The new Crusader was a single engine, single pilot dedicated air superiority fighter. The Navy preferred the F-4 because of its twin engines, a two man crew to share the workload, its greater payload, and the versatility to perform the air to ground mission.

*YB-49*  
(Northrop Photo)



Eventually, the B-36 was chosen by the USAF and all existing models of the flying wings were destroyed by the orders of Stuart Symington, Secretary of the Air Force. Some say that he was influenced to make this decision by Louis Johnson, Secretary of Defense and a friend of Floyd Odlum whose Atlas Corporation has bought out Convair. Long afterwards, Jack Northrop stated that the decision to not award the contract to Northrop occurred because he had refused a suggestion by Symington to merge his company with Convair.



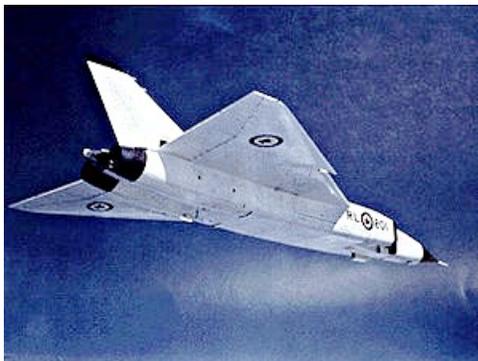
*Vought XF8U-3 Super Crusader*  
(US Navy Photo)



*McDonnell F-4  
Phantom II*

***Broken Arrow!  
1958***

The need for a supersonic interceptor for the Royal Canadian Air Force during the cold war led to the development of the AVRO of Canada's CF-105 Arrow. A sleek delta wing design, the Arrow had the usual teething problems of a new design but was defeated not by a superior aircraft design but by a political decision. The newly elected Conservative government of John Diefenbaker was concerned about the cost of the Arrow program. In addition, Canada was under pressure by the United States to deploy the BOMARC anti-aircraft missile. Since the missile would perform the job of an interceptor, both political parties agreed to cancel the project, thousands were thrown out of work, and all completed Arrows, tooling, and blueprints were destroyed. Since manned interceptors were still required, the United States gave Canada some three score and six McDonnell F-101 Voodoos (CF-101 in Canadian service). AVRO of Canada eventually folded and Canada faced a "brain drain" as their best aeronautical talent fled to the United States aeronautical industry and space program.



*CF-105 Arrow  
(RCAF photo)*



*CF-101B at RCAF Memorial Museum*



*BOMARC B  
Boeing-  
Michigan  
Aeronautical  
Research Center  
(Canadian Aviation  
Museum Photo)*

***Strike Fighter Stricken  
1965***

Canada's mother country, Great Britain, soon emulated her daughter when the promising British Aircraft Corporation TRS-2 was cancelled by a political decision and, like the AVRO Arrow, was replaced by aircraft rejected earlier. The rationale behind the design of the TSR-2 was to produce an aircraft that could penetrate enemy air defenses at high speed and low altitude. As usual, cost was an important factor and the Royal Navy's Blackburn Buccaneer was seen as a cheaper alternative. The General Dynamics F-111, ordered by Australia,

was also considered but political considerations to buy British forestalled that effort. Ultimately, a Labour government under Harold Wilson cancelled the TSR-2 and Buccaneers and the McDonnell F-4 (FG.1 and FGR.2 in British service) served as interim replacements. As seems to be customary, most of the few aircraft already produced were scrapped with embarrassing haste and tooling and documents destroyed.

***Thunderbolt fells Northrop  
1972***

The early 1970's featured a contest between Fairchild-Republic and Northrop to win the USAF contract for a close air support aircraft. Northrop entered its A-9A and Fairchild-Republic countered with the A-10. A fly-off was conducted in 1972 and, although both types performed well, the A-10 was selected and designated as the Thunderbolt II. The tail mounted engines of the A-10 may have been a game winner. They were better protected than the A-9s engines and allowed more wing room for hard-points. The two A-9A prototypes were relegated to research duties with NASA but you cannot keep a good design down and in the mid-70s, Sukhoi produced the Su-25 Frogfoot attack aircraft which bears similarities to the Northrop design.



*TRS-2 on Display at Imperial War Museum, Duxford*



*Blackburn Buccaneer S.2B at Duxford*



*McDonnell FGR.2 Phantom II*



*Northrop YA-9A at March Field*



*One of Connecticut's Flying Yankees at BDL*



*Su-25 Frogfoot  
(AviaWorld Photo)*

### ***The Lion Sleeps Tonight*** **1987**

Israel Aircraft Industries (IAI), the child of the remarkable Al Schwimmer, designed the *Lavi* (Lion) as a multi-role aircraft to replace the Douglas A-4 Skyhawk. Its primary function was ground attack with a secondary mission as an air superiority aircraft. The project incorporated much of the newer technologies, especially in avionics, and the control, communication, and armament systems were designed after careful consideration of the suggestions of combat pilots with the intent to allow the pilot to concentrate on the tactics of a battle rather than devote attention to supplementary functions.

But as is often the case, circumstances combined to force the cancellation of the program. The development of the program was extremely high and partially subsidized by the United States which was not eager to see a competitor to US produced aircraft such as the F-16. They say that if two Israelis meet, they immediately form three political parties and within Israel, even within the air corps there was opposition to the *Lavi* project since it was believed that the money might be better spent purchasing more US aircraft. Social groups argued for domestic spending on health, housing, and education programs.

On the other hand, Moshe Ahrens, the Minister of Defense and an aeronautical engineer, was the primary advocate for the *Lavi*. A Lithuanian whose parents emigrated to the United States, he was a product of the New York school system and earned degrees from both the Massachusetts Institute of Technology and California Institute of Technology and served as a professor of engineering at The Technion and was a political activist in the conservative *Likud* party. He believed that not only would the project provide a vehicle for the development of Israeli technology but would also would provide an independent source of Israeli weaponry.

Eventually, the *Lavi* was cancelled and the F-16 adopted. Five thousand IAI employees lost their jobs but many of the *Lavi* avionic developments went to to be improved and installed in future aircraft, Israeli and foreign customers.



*Lavi Asleep at Hatzerim*



*Fighting Falcon of the "Boys from Syracuse"*

### ***Lightning Strikes Boeing*** **2001**

Eminent engineer and aerospace industry leader Norman Augustine states in his Law Number 16 that the defense budget grows linearly but the unit costs of new military aircraft grows exponentially. When graphed out, this means that if all conditions remain the same, in 2054, the entire defense budget purchase but one aircraft! The USAF and the USN will share that plane for 3.5 days per year. The USMC will use the aircraft on February 29th in a leap year.

High stakes are involved when an aircraft acquisition is tendered. The United States Joint Strike Fighter (JSP) Program is one example. The JSP is envisioned as a multi-role, multi-service,

stealthy replacement for the F-16, A-10, F/A-18 Hornet, A-6 Intruder, and AV-8 Harrier. In 1996, Boeing and Lockheed-Martin squared off for this lucrative prize. The US government provided each company with 750 million dollars to develop their technology demonstrators with the hope that this would induce them to produce a relatively low cost aircraft. The kicker was that each aircraft has to demonstrate conventional take off and landings, carrier take offs and landings, and short take off and vertical take off and landings in order to meet the tactical doctrines of the USAF, USN, and USMC.

Boeing entry, the X-32, came in two versions. The X-32A demonstrated the conventional the plane's ability to meet USAF and USN criteria for take-off and landing. The X-32B used vector thrust, similar to that used by the Harrier, to prove that it could not only land and take-off vertically but also transition to horizontal flight.

Lockheed Martin produced three flavors of the X-35. The "A" version was Air Force, the "B" version was VSTOL for the Marines, and the "C" version was optimized for Navy carrier operations. Of more conventional design than the Boeing entry, a major difference appears in the "B" version. Rather than using vectored thrust, the Lockheed Martin design relies on a vertically mounted lift fan mounted near the center of the fuselage.

Eventually, the Department of Defense chose the X-35 which, in the production versions became the F-35 Lightning II. The choice was made on a "best value" basis although the more cynical among us say that aesthetic sensibilities played its part in giving the edge to the Raptor-like X-35 over the pudgy, slack-jawed X-32. As usual, controversy swirls over whether or not the X-35 was really the better aircraft. And as usual, the unconventional F-35 has run into cost overruns and technical difficulties.



*X-32B at PAX River*



*X-35C at PAX River*



*X-35B at Udvar-Hazy*

You may have noted some similar features in many of the stories. The interplay of politics and economics which can trump good design. Proponents of a losing design sometimes accuse the winners of foul play and have gone so far as to claim conspiracies between the winners and government. The recent struggle between Boeing and Airbus for the KC-X contract contains all of these element. When I first learned to play Hearts, my boss, a former Marine Aviator, was found of saying, "The winners laugh and tell jokes. The losers say 'shut up and deal' the cards." If you don't go broke, there is always a new contract down the pike.