



Missions for America
Semper vigilans!
Semper volans!

The Coastwatcher

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

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CADET MEETING MINUTES

05 April
submitted by
C/MSgt Benjamin Ramsey

The Cadet cadre held its monthly staff meeting. Lt Col deAndrade and Cadet Drost presented a role playing demonstration on how to interview cadets in order to make them aware of their promotion requirements.

Cadets not involved in the staff meeting spent their time working on their rockets.

SENIOR MEETING MINUTES

05 April, 2016
submitted by
Capt. Frederick Benteen

The Squadron held its monthly planning meeting.

Announcements were made concerning upcoming events.

Long Island Sound Patrol is scheduled to start on the weekend of 7-8 May. The TRCS glider weekend, 14-15 May, is seeking six more cadets.

A review of the calendar resulted in several corrections and additions. See page two for information.

The problem of aircraft allocation was discussed. Wing Operations will be contacted to reserve a Cessna 172 for Form 5, orientation, and proficiency flights.

AEROSPACE CHRONOLOGY FOR THE WEEK

09 April, 1940-First Flight of the Grumman XF5F-1 Skyrocket. Old timers will remember that Blackhawk's International Squadron flew this plane. Hawka-a-a!



10 April, 1959-First Flight of the Northrop T-38 Talon.



T-38 Beale AFB

(Continued on Page Three)

April 2016						
SUN	MON	TUE	WED	THU	FRI	SAT
Encampment Staff deadline April 1st					1	2
						STEM
3	4	5	6	7 NER AEO	8 NER AEO	9 NER AEO
10	11	12 CC CALL	13 Airport Emer Plan 0930	14	15	16 Oflight
17 Week of Spring Break		19 No Meeting	20	21	22	23 Rifle(NotCAP)
24 SLS	25	26	27	28	29	30 Comm CW16 SQ SAREX STEM CLC

May 2016						
SUN	MON	TUE	WED	THU	FRI	SAT
1 Comm CW16 CLC	2	3	4	5	6	7
8	9	10 CC CALL	11	12	13	14 Glider
15 Glider	16	17	18	19	20	21 Oflight Rocket Contest
22	23	24 Spring Clean	25	26	27	28 Rifle
29	30	31 FUN	Rocket Contest 21 May			

June 2016						
SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11 Wing Conference
12	13	14 CC CALL	15	16	17	18 Oflight
19	20	21	22	23	24	25 Oflight
26	27	28	29	31		

July 2016						
SUN	MON	TUE	WED	THU	FRI	SAT
					1	2
3	July 4th	5 CC CALL	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23 Oflight
24	25	26	27	28	29	30/31

Other Ground Tranex O-Flight Meeting Wing National

Volunteer Service

Date	Senior	Cadets
2		STEM: Helicopter
5	Planning: Staff Mtg	Leadership, testing, rocketry (civies)
12	Commander's Call / Prom / ES: AP	Drill, CD, AE, Promotions (Blues)
13	Airport Emergency Plan 0930 Rocketto/ Francisco	
16	Oflights Rifle (not a CAP event)	
19	ES: AP 6-8	No meeting
23	Pilot Meeting (MMK:1-4)/SLS Harford	
26	CAP History, PAO Brief	Fitness, Safety, Rocketry, ES (BDU)
30	CLC Dandbury	STEM: Flight Simulator
30	SQ SAREX / Communication Exercise CW 16	

Respect

Date	Senior	Cadets
3	Planning / Staff	Leadership, Testing, Admin (civies)
10	Commanders Call	Drill, Insp, Sfty, CD, Lead, Promo (Blues)
17	ES - LISP Plan, Ditching	Drill, Insp, AE, ES, DDR, Guest Speaker (BDU)
21	Commanders Cup Rocketry Contest	
24	Spring Clean (Crandall)	Fitness, Safety, flight time (BDU) Clean
31	Lobster Fest - Neilson	Fun night
28	CTWG Rifle Program to qualify for marksmanship ribbon	
14/15	Glider Weekend- LT Drost, Cadet Drost	

Excellence

Date	Senior	Cadets
7	Staff Meeting	Cadet Staff, Leadership, testing, admin (BDU)
11	CT Wing Conference - Flyin, All invited	
14	Commanders Call	Drill, CD, Safety, AE, promotions (Blues)
21	ES	Fitness, Emergency Service (PT)
28	DDR, team building, senior spker, flight BDU	

Integrity

Date	Senior	Cadets
5	Planning - Sq staff mtg	Testing, admin, Planning (civies)
12	Commanders Call	Drill, Safety, CD, Leadership, Promo (Blue)
19	Fitness, Ground Team (PT)	
23	Oflight	Oflight
26	Drill, Rocket (BDU)	

Encampment 5-11 Aug, Aviation Day 8/19, SUI 9/16

This schedule is not a replacement for good communications.

15 April, 1928-Australian explorer George Hubert Wilkins and US pilot Lt Carl Ben Eielson fly a Lockheed Vega in the first successful crossing of the Arctic flying from Point Barrow, Alaska to Spitzbergen, Norway

16 April, 1923-Lts John A. MacCready and Lt. Oakley A. Kelly lifted off in a Fokker T-2 on a record breaking 36 hr, 2,500 mi. flight carrying a 10,899 lb. Payload.



McCready is the only three time winner of the Mackay Trophy and he did this in three successive years! Once an altitude record and the first use of supplemental oxygen, a second time for the endurance flight previously mentioned, and a third time for the first nonstop transcontinental crossing, a 26 hour and 50 minute flight from Roosevelt Field, New York To Rockwell Field, San Diego, California.

17 April, 1926-Three Army Air Corps aircraft led by Lt Harold R. Rivers take the first aerial photographs of an erupting volcano.

On 27 December 1935, nine years after the photographic flight, the unit actually bombed a volcano. The city of Hilo was threatened by a lava flow from Mauna Loa. Twenty 600 pound bombs were dropped.



The patch of the 23rd Bomb Squadron depicts this mission and reminds them of their heritage. Erik Nelson, former Cadet Commander of TRCS now flies a B-52 for the 23rd.

TRIO AND QUARTET PLAY QUADS

Saturday, 02 April, 2016

Seven cadets organized into teams and commenced construction of two quadcopters supplied by CAP's Aerospace Education Program as part of the Science, Technology, Engineering, and Mathematics Initiative. The session was led by Capt David Meers and SM David Pineau with Lt Col Stephen Rocketto as kibitzer.

Team One consisted of Cadets Daniel Ramsey, Ryan Schantz, Colin Hallahan, and John Pineau. Hannah Ramsey, Gabiella Richards-chenette, and Benjamin Ramsey worked together as Team Two.

Instructions were provided by an on-line site on which a model builder demonstrated a step-by-step procedure to assemble the quadcopter. The preliminary steps were a parts inventory and parts familiarization. Some of the parts were very small and could easily be lost so they had to be contained.



Construction Consultation

Each team was provided with a set of tools: drills, a knife, wire clippers, pliers, and a ruler. A soldering iron was shared.



Assembly Line

AEROSPACE CURRENT EVENTS

California Collision Calamities

Plane Hits Car

One person is dead and five have been injured.



A Different Kind of Drilling

The fuselage of the quadcopter is a wooden box and the arms are wooden rods which fit into pre-cut slots in the box. Motors are attached to the arms and connected to wires which feed into a control unit.



Quality Control

The wiring was the most difficult part of the assembly. The wiring was tested for continuity. At that point, the five hour session ended. The final assembly will be completed during the next week.



Wiring Test

A Lancair made an gear-up emergency landing on a San Diego Freeway on Saturday. The aircraft struck a Nissan which was parked on the shoulder and killed one of the passengers. The driver of the parked car had pulled over in compliance with California law for cell phone use.

Ironically, 16 years ago, this same aircraft made an emergency landing on this same stretch of highway after an engine failure. The cause of this recent accident is under investigation.

Car Hits Plane

Two killed in crash in Central Valley

After a police chase, a Grand Cherokee jeep smashed through a gate at Naval Air Station Lemoore and struck the stabilizer of an F/A-18E which was parked on the ramp. The female passenger in the jeep died in the crash and the severely injured male driver died at the hospital. Terrorism is not suspected.

Wright Patent File Found

In 1980, the Smithsonian Institution returned a file containing the official Wright Brothers airplane patent application. After the exhibition,, the file was returned to the National Archives. Twenty years later, archivists tried to retrieve the file but could not find it.

The patent, Number 821,393 was for their “flying machine” The application contained three sheets of paper was filed in 1903 and granted in 1906 and described the principles of flight, the structure of the machine, and details about the control system.

On March 22, 2016, Bob Beebe, an archivist discover the file. It was stored in a limestone cave near Lenexa, Kansas where the National Archives stores patent records. In all likely hood, the documents were misfiled when they had been returned.

This is highly probable. The National Archives stores about 10 billion pages of textual records, 12 million maps, 25 million still photographs, 24 million aerial photographs, 300,000 reels of motion picture film, 300,00 video and sound recordings, and 133 terabytes of electronic data. If you ever lost a document in your files, you can grasp the enormity of the problem.



Some of the the fifteen foot tall stacks at Lenexa.

Storage facilities in Washington and Suitland, Maryland are inadequate and expensive so the Archives has established a network of regional sites. One of these, a 160,00 square foot facility, is in Lenexa, Kansas. Limestone mining in the late 1800s created a network of caverns and they are ideal for archival storage. Temperatures run at about 60 degrees Fahrenheit, the air is dry, so no air conditioning is needed.

Now that the patent has been found, plans are being made to once again place it and supplementary documents on exhibit.

AEROSPACE HISTORY

ATTACK AIRCRAFT (Part II-Turboprops)

The end of WWII ended the days of the piston powered attack plane and turbine engines became the power-plant of choice. This essay will look at

some of the turboprop aircraft designs which emerged in final years of the 20th century.

Once again, the definition of an attack plane is fluid. Fighter bomber and some trainers might be so labeled. For the purposes of this essay, the sobriquet “attack” means that the primary purpose of the aircraft is tactical combat employment for national interests.

Grumman OV-1 Mohawk

The U.S. Army and Marine Corps collaborated in the early design of the Mohawk but differences led to the Navy Department dropping out. The services wanted an aircraft to replace the small, highly vulnerable observation planes such as Cessna's O-1 Bird Dog and O-2 Skymaster. What emerged was a twin engine, triple tail turboprop operated by a two man crew. The aircraft would also be equipped with radar imaging capabilities enabling to detect both stationary and moving target at night or under a jungle canopy, photographic capabilities, and electronic surveillance gear.



Mohawk

The addition of armament created a hassle with the U.S. Air Force which regarded Army operation of armed fixed wing aircraft as a violation of the Key West Agreement which, among other things, assigned fix wing close air support (CAS) to the Air Force. However, the USMC had had Grumman make provisions for hard points under the wings and the Army took advantage of this in the JOV-1A version of the Mohawk. This allowed the carriage of bombs and rockets. Air Force opposition eventually brought an end to the deployment of armed Mohawks in Vietnam.



Mohawk Armament Suite (USA PHOTO)

About five years ago, Alliant Techsystems led a consortium of companies to develop a more modern version of an attack Mohawk. The single prototype was equipped with a trainable 30 mm chain gun and forward looking infrared sensors. The prototype flew but the concept crashed.

Bell AH-1 Cobra/Supercobra



Cobra with a Cobra Motif-Gate Guard at the 1109th TAMSG-Groton)

The AH-1 Cobra is the offspring of the ubiquitous UH-1 “Huey.” Add an engine and upgrades and the Supercobra emerges.

The heavy use of helicopters for the air assault tactics of Vietnam led to the realization that the unarmed troop carriers were easy meat for enemy gunfire. As an expedient some UH-1s were equipped with fixed machine guns and rocket tubes and escorted the troop carriers and provided suppressing fire when they landed.

AH-1 was aircraft especially crafted for the escort and suppression roles. It had a narrow fuselage with the pilot and gunner seated in tandem. Some

of the armament was mounted in a turret on the nose and might contain 7.62 mm miniguns or 40 mm grenade launchers. Tubes containing 2.75 inch rockets were mounted on stubs projecting from the each side of the fuselage.



Cobra displays its fangs at Camp Perry, OHNG

The Cobra saw hard action in Vietnam and were used by the Israelis in Lebanon, against the Kurds in Turkey, and counter-insurgency in Pakistan.

The sea services have a proclivity for multi-engine aircraft which provide a modicum of security over open water. The Marines lobbied and secured a twin engine version of the Cobra, the Supercobra.



USMC AH-1J Supercobra at Mirimar

Heavier armament was carried by the Supercobra. The turret was equipped with a 20 mm Gatling gun with three barrels. Hellfire and Tow missiles and the 2.72 inch rockets can be carried in various combinations.

After Vietnam, the Supercobra was used in about a half-dozen U.S. military actions and fought for the Iranians against the Iraqis and the Turks against Kurdish insurgents.

North American Rockwell OV-10 Bronco

As the United States entered the '60s, the need for a counter-insurgency (COIN) was felt by the Air Force and the Marines. The program was known at the Light Armed Reconnaissance Aircraft (LARA). The Bronco and the Convair Charger were the two contestants for the contract which was awarded to North American.



USAF OV-10A Hurlburt Field

COIN operations demanded an aircraft which could operate from short unimproved airstrips and demanded little in the way of maintenance or special equipment. The ordnance payload had to be large and varied and a sufficient time to loiter over a hot area, at least three hours, was an additional requirement. Additionally, a rear cargo compartment allowed the carriage of up to five troops or supplies.

The Bronco met these requirements with one exception. In the high hot environment of Vietnam, a combat loaded Bronco was an anemic steed with a low rate of climb and a limited service altitude.

Weaponry would include four 7.62 mm machine guns mounted in two stubs which protruded from the fuselage and a wide range of rockets, bombs, missiles, or gun pods mounted on seven hard points.

Each of the services had special uses for the Bronco. The Marines, strong advocates of CAS, used it for Forward Air Control (FAC) missions.

The Air Force flew similar missions but also used specially equipped Broncos to direct night interdiction missions against the Ho Chi Minh Trail.



USMC OV-10D at Groton

A single Navy squadron, the Black Ponies, attacked enemy riverine traffic and supported special operations troops.

The last Broncos were retired from the U.S military inventory after service from Vietnam to the liberation of Kuwait. A footnote must be added. In 2012, the Air Force acquired two Broncos, one from NASA and a second from the State Department, and deployed them to Iraq to support special forces operating against ISIS. The Air Force did not expand or even continue the program for financial reasons.

At least four foreign nations, Columbia, Indonesia, Morocco, and the Philippines used them for COIN operations. And in one incident, Venezuelan mutineers used Broncos in an attempt to overthrow their government!

But the Bronco may live on. Boeing has broadcast plans to produce an improved Super Bronco as a light attack aircraft. The aircraft would have upgraded electronics and highly advanced capabilities for the use of precision munitions. Realistically, the program would never get off the ground with the USAG due to financial and cultural reasons. Unless allied nations decide to purchase enough aircraft to pay for the modernizations and opening a production line, highly unlikely, the OV-10X will never be built.

FMA-IA 58 Pucarú

The Pucarú is a joint product of the Argentinian Fábrica Militar de Aviones and the Instituto Aeronáutico. Like its Bronco contemporary, the *Pucarú* was designed to operate from unimproved airstrips. JATO rockets can be fitted for short field performance. All-up weights are about the same but the *Pucarú's* engines generate about 500 more horsepower than the Bronco's power plants for a better rate of climb. The weaponry is heavier than that carried by the Bronco, two 20 mm cannons are supplemented by four 7.62 mm machine guns.



Pucarás in formation (Argentine Air Force Photo)

Pucarás fought in the Falkland War against Great Britain and in the civil war in Sri Lanka. The aircraft are still operational in the Argentine and in Uruguay.



Pucarás Weapons Packages (Photo by Francisco Ingante)

Boeing AH-64 Apache

Hughes Helicopters designed and built the first Apaches in 1975. Hughes was then purchased by McDonnell Douglas which in turn was acquired by Boeing which maintains the production line.

The Army sought a follow-up to the AH-1 Cobra series with advanced weaponry and electronics applicable to engage armored enemy ground forces. Maneuverability and protection against projectiles were also criteria for the new helicopter.

The “D” model, called the Apache Longbow, and its successors carry a mast mounted sensor system which allows the helicopter to peer over obstacles without exposing itself to enemy gunfire.



WAH-64D

The WAH-64 is built by Westland under License)

The Apache can fire a wide range of armament. A nose mounted 30 mm cannon is contained in a turret which permits a large envelope of fire. Four fuselage mounted pylons can carry a 2.75 rockets, unguided or laser guided. The Hellfire (Helicopter Launched, Fire and Forget Missile) is one of the more common weapons carried.



Apache Armament Display (US Army)

During its forty year career, the Apache has seen

action from Panama to recent operations against the so-called Islamic State. About ten other nations operate the Apache and they find frequent use in the COIN role.



AH-1W

(Photo by Communications Specialist Mark Hayes)

Mil Mi-24 Hind

The Hind is a large attack helicopter which can carry a squad of troops. It is over twice the weight of the Apache. The narrow fuselage, retractable landing gear, and aerodynamic refinements result in a fast aircraft which have claimed several world speed records. Titanium armor protects the air crew and titanium rotor blades enhance the Hind's ability to sustain damage.

The Hind is operated by a number of third world nations and client states of the former Soviet Union. The export versions are the Mi-25 and the Mi-35 designated by NATO as Hind D and Hind E. Since 1969, over 2,000 have been manufactured in a wide variety of models and the production line is still open.

For four decades the Hind has seen service in wars ranging for the Soviet adventure in Afghanistan to the Crimea. In fact, combat operations of the Hind have occurred on four continents: Europe, Asia, Africa, and South and Central America. Captured or purchased Hinds were used by the U.S. Army in “opposing forces” exercises.



Red “Deer” in flight-Hind D

(Photo by TSgt Jim Varyging)



Opposing Forces Hind Operators Patch-Fort Irwin

They can carry a profuse range of weaponry. Depending on the model, guns can be 7.62 mm and 12.7 mm machine guns, automatic cannons mounted in pods, bombs, canisters of free flight rockets and radar guided anti-tank missiles.



Hind at Rest

(Photo by MSgt Steve Turner)

Mi-28 Havoc

The Havoc is roughly comparable to the Apache. Models may carry a Forward Looking Infrared (FLIR) system or a mast mounted radome which allows it to peek over a ridge line without exposing its most vulnerable parts. Electronics give the aircraft a night and all-weather capability.



“Cry havoc and let slip the dogs of war.”
(Photo by Atem Katrabzhi)

It mounts a chin-mounted flexible 30 mm cannon and has two stubs which can carry anti-tank missiles, or rockets. Pods can be attached which house 23 mm cannons.

Russia has used the Havoc in Syria, supporting the Syrian Arab Army in their operations against ISIL. Iraq and Kenya also operate a handful of Havocs.

Embraer A-29 Super Tucano

The Tucano is one of the “horses” running in the Light Attack “Derby.” Some of the others are the Beech AT-6, the Airtractor AT-802, and the Boeing OV-10X. Boeing's entry never left the starting gate. The Air Tractor is sired by the Snow Thrush and the few produced are stabled in the United Arab Emirates, Jordan, and Yemen and have seen some combat in the Yemeni Civil War.

The Tucano and Beech's AT-6 Texan II, based on the Pilatus PC-9, were neck and neck for the finish

line with the Tucano winning by a nose. But Beech entered a protest with the stewards and the USAF admitted to paperwork errors in the entry procedure. Tucano was again declared the winner but Beechcraft sued and lost again. The Tucano entered the winner's circle. The final award was for 20 aircraft. Afghani jockeys are being trained in the United States and sent back home to ride roughshod over the national foes, whomever that might be at the time they sortie.



Tucanos over Brazilian Rain Forest
(Ministerio da Defesa)

Since 2007, Colombian government Tucanos have operated against the The Revolutionary Armed Forces of Colombia. The Dominican Republic , Honduras use the the aircraft to counter the narcotics trade. Brazil is not only concerned with drug smugglers but also with illegal logging and mining operations.

The Tucanos carry two .50 caliber machine guns and can be outfitted with gun pods equipped with 20 mm cannons or 7.62 mm machine guns. Unguided rockets and guided missiles may be carried on the five hard points. A wide range of general purpose, special purpose, and precision guided bombs also reside in the Tucano armory.

SLS COURSE SCHEDULED

A Squadron Leadership School is scheduled to be held in Hartford -24 April. The course is required for attaining Level Two. Contact Lt Col Doucette for information.