



Missions for
America

Semper vigilans!

Semper volans!

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

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Issue 14.05

28 January, 2020

SQUADRON CALENDAR

04 FEB-TRCS Staff Meeting
11 FEB-TRCS Commander's Call
18 FEB-TRCS Meeting
22 FEB-CTWG Aircrew Meeting-HFD
23 FEB-Special Olympics-P&W
25 FEB-TRCS Meeting-Safety Down Day
29 FEB-01 MAR-Squadron Leadership School
03 MAR-TRCS Staff Meeting
10 MAR-TSRCS Commander's Call
17 MAR-TRCS Meeting
24 MAR-TRCS Meeting
31 MAR-TRCS Meeting
XX MAR-Water Safety Course-Date TBD
17-18 APR-NER Aerospace Education School
19 APR-NER/CTWG Conference-BDL

CADET MEETING

28 January 2020

Lt Col Rocketto led a triple header. He briefed the cadets about the recent crash of a Bombardier E-11 Battlefield Airborne Communications Node (BACN) aircraft in Taliban held territory in Afghanistan.



The lost aircraft.

He then ran a team competition during which cadets displayed their ability to identify aircraft from the current USAF inventory, pictures of which were distributed a week ago.

Finally, Rocketto led the cadets in a hands-on investigation of heat, temperature, and materials using sparklers, hand lenses, and magnets.

SENIOR MEETINGS

28 January, 2020

Lt Kopycienski briefed the senior members on a unique method of tracking aircraft being developed by a crew of CTWG commo officers.

Capt Johnson discussed the work of CAP's cell phone forensics team which was credited with over 100 successful last year.

PROMOTIONS, QUALIFICATIONS, AWARDS

MISSIONS

On the 23 of January, Maj Farley and Lt Col Kinch flew a training flight practicing airborne search procedures.

Maj Farley renewed his mission pilot rating by successfully completed a Form91 check ride.

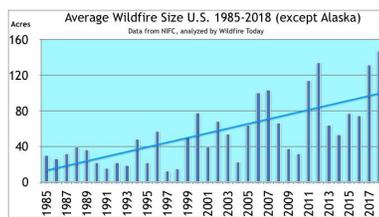
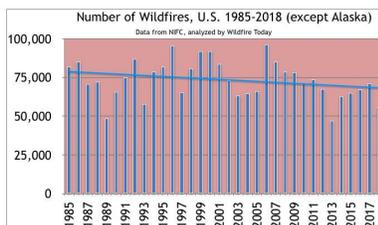
CURRENT EVENTS

The crash of a Coulson C-130 Hercules in Australia and the death of the three American crewmen accentuates the fact that aerial fire fighting is one of civil aviation's most dangerous professions. Around 200 pilots and aircrew have been killed flying fire suppression missions in the last two decades.



Tanker 134 which crashed in Australia was a former Navy C-130Q used to communicate with ballistic missile submarines

Drought, lightning, volcanic eruptions, and man-related factors such as carelessness, arson, and power-line arcing. The Environmental Protection Agency claims that 85 to 90 percent of all wildfires are due to human agency. Data seems to indicate that the number of wildfires in the contiguous 48 states is declining but the size of the fires are increasing.



Climate and mismanagement of forest lands contribute. Once, natural wild fires burned undergrowth and accumulated dead and decaying matter. This returns nutrients to the soil and thin forest canopies allowing new growth. But the size is increasing. And the cost of the damage to property is increasing.

People are building houses in areas which are

prone to wild fires. The problem is analogous to those who build sea-front houses on shorelines exposed to hurricane force winds and waves or on flood plains along the Mississippi River. Mother Nature can both protect and succor her brood but from time to time will impose harsh discipline.

The primary mission of the aerial fire-fighter is to contain and suppress wildfires, not put them out. This is done by forming barriers, fire breaks using chemical treatments and water. On the ground, crews will clear flammable material to prevent the advance of the flames. The chemicals are based upon various ammonia compounds which are combined with a thickening agent. They are generally colored red to provide a marker as to where they have been dropped. The ammonium compounds also serve as a fertilizer to enhance plant growth after the burn has ended.

Many of the aircraft used are contracted from specialist companies such as Coulson Aviation, Columbia Helicopters, and Neptune Aviation. The Department of Agriculture's Forest Service (USFS) and Department of the Interior's Bureau of Land Management are the federal entities charged with the hiring of aerial fire fighting services. Others are operated by state or municipal organizations such as Cal Fire and Los Angeles County. From time to time, the Air National Guard or Air Force Reserves are called upon.

Both fixed and rotary aircraft are used. The glamour girls of the fleet are the aerial tankers which deliver suppressants. However, they are backed by support aircraft for leading in the large tankers, tactical command and control, and reconnaissance. The fixed wing aircraft are classified as single engine air tankers (SEAT) or if multi-engined, by their payload capacity.

A classic SEAT is the Thrush 510, a turboprop ag plane with developed in the course of ownership by five different companies. The aircraft lifts around 500 gallons with its 800 HP and when equipped with floats, can refill its hopper by skimming a convenient body of water. The advantages of a SEAT are its maneuverability and ability to operate in an austere environment.



Connecticut's Kaman Corporation produces the K-1200 K-MAX helicopter. Experiments have successfully flown the K-Max by remote control. The classic Bell YH-1 is comparable to the K-Max in the weight of payload delivery,



*K-Max fitted with an external tank and snorkel.
A NASA Huey crew practice using a Bambi Bucket.
(Credit: KSFC-NASA)*

Modified Sikorsky S-61 Sea Kings and CH-47 Chinooks are capable of lifting 1000 gallons and like the K-MAX can deliver retardant by either a Bambi Bucket or using attached tank.



Cal Fire operates about two dozen Grumman S-2T Turbo Tracker modified by Arizona's Marsh Aviation. Originally a piston powered carrier

based anti-submarine plane, it now can deliver 1,200 gallons of fire suppression liquid.

Curiously, The S-2Ts are owned by California but registered to the USDA Forest Service?



Bombardier's CL-415 "Super Scooper" is an amphibious 1,600 gallon water scooper and has the same advantage as the Thrush, the ability to refill its tanks from a nearby lake and return quickly to the scene of the fire.



Originally a Canadair product, the Bombardier, it is now supported by Viking.

Erickson Air Crane purchased the S-64 Tarhe license from Sikorsky and produces an upgraded version, the SK-64. It will move 2,500 gallons of fire fighting liquid with all of a helicopter's versatility.



Retired airliners such as the four engine British Aerospace 146/RJ85 series and the twin engine McDonnell-Douglas MD-87 are able to lift 3,000 gallons of liquid. They are relatively cheap to acquire but expensive to modify. One factor which inhibits the acquisition of more of these aircraft is that the government issues one year contracts so the banks are unwilling to take the risk of lending money to a company which might not have a one year contract guarantee.



The turboprop Lockheed C-130 Hercules is both operated privately and on occasion by the National Guard and the Air Force Reserve. A modified Herc will deliver a similar payload as the modified commercial airliners when equipped with the Modular Airborne Firefighting System (MAFFS).



A MAFFS unit being installed on a Colorado based Air Force Reserve Command C-130

The MAFFS is a self-contained unit with pressurized retardant tanks and a dispenser system. The original MAFFS I discharged the liquid through the open aft cargo door. MAFFS II, an improved model by Aero Union discharges, the retardant via a nozzle in one of the paratrooper exit doors. The aircraft can stay pressurized and performance is enhanced with a closed aft door.

A company called 10 Tanker operates four Douglas DC-10s. They are equipped with three tanks carrying over 9,000 gallons total. The aircraft disperses the liquid from around 250 feet above ground level while traveling at 140 knots.



(Credit: Ray Coulter)

The biggest lifter of the US air tankers is a single Boeing 747-400 operated by Global Super Tanker.

This aircraft drops at 150 knots and from an altitude of around 600 ft AGL. The aircraft is based at Colorado Springs Airport.



Colorado Springs and the USFS have just announced plans to develop a permanent air tanker base with a dedicated eight acre ramp containing six reload pits to quickly resupply the aircraft.

Human beings are sometimes delivered to the scene of the conflagration by aircraft, the storied Smokejumpers. There are about 400 of these incredibly fit, tough as woodpecker lips, firemen stationed at ten or so bases around the west. The traditional fireman *slide down* a poll to get to his engine.

But Smokejumpers *climb up* to board his transport, perhaps a Dornier D228 or a Short Skyvan. If a helicopter deployment is not possible, they parachute in with 80 pounds of equipment and then gather the rest of their tools which have also been airdropped. Their main job is to cut fire-breaks to stop the spread of the flames.

Geared-up Smokejumpers climbing aboard a Short Skyvan.



This article has been just a dip into a very large pool of information about a fascinating and vital contribution by aviation to society. A second dip into the “You Tube” channel will provide you with a wealth of video of some “sporty” flying. Have a hot time on the old town tonight.

AEROSPACE CHRONOLOGY

Jan, 29, 1910– Birth of Philip Gerald Cochran, co-commander of the first U.S. air commandos. Cochran achieved notoriety as “Flip Corkin,” in Milton Caniff’s comic strip “Terry and the Pirates.” Caniff had known Cochran when they were students at The Ohio State University.

In 1941, Capt. Cochran invited Caniff to Groton, Connecticut to observe his 65th Fighter Squadron flying the Curtiss P-40 Warhawk. Caniff saw an opportunity and “inducted” Terry into the Air Corps with “Flip Corkin” as his flight instructor.

Cochran and Allison



The composite unit flew an eclectic mixture of aircraft: P-51A Mustangs, B-25H Mitchells, C-47 Skytrains, Stinson L-1 Vigilants and L-6 Sentinels, the Norduyn UC-64 Norseman, Sikorsky YR-4 helicopters, and Waco CG-4 gliders. The fighters and bombers provided airborne artillery for the lightly armed Chindits. C-47s towed the Hadrians in the glider assaults. The light aircraft were used for casualty evacuation and resupply missions. The Sikorskys executed the first, very first, of the millions of helicopter rescues to come.



When Terry receives his wings, ending his pilot training, Flip Corkin gives a short sermon on Sunday, October 17, 1943. The most famous of Caniff’s strips, it was read into the Congressional Record and reprinted all around the world in military publications.

Enlarge this cartoon strip to read Flip’s “sermon” to Terry.

After a combat tour in North Africa and a spell training P-40 pilot’s at Tuskegee, Alabama, Lt. Col. Cochran was paired with Lt. Col. John Alison and in 1944 given carte-blanc by President Franklin D. Roosevelt to form the 1st USAAF Air Commando Group to support the eccentric British Maj Gen. Orde Wingate and his Chindit Long Range Penetration Group in the Burma Campaign.

Pilots and service crew of the YR-4 in Burma (Credit: USAF/Sikorsky Archives)



Jan 30, 1932– The Imperial Japanese Navy aircraft carrier *Kaga* arrives in Chinese territorial waters at the outbreak of the Shanghai Incident. The Japanese Navy’s use of aircraft carriers in the Shanghai Incident will be history’s first significant combat use of carrier-borne air power.

The *Kaga* supported the operation with her Nakajima A1N4 fighters and Mitsubishi B1M3 torpedo bombers, some of which were detached to Shanghai’s Kunda Airfield.



Note the triple flight deck of the Kaga. Mitsubishi B1M bombers are on the top deck and Nakajima A1N fighters are parked forward on the lower deck.

A month after arriving, Kaga's A1Ns shot down a Boeing P-12 being flown by an American, Robert Short, for the Chinese Air Force.

Kaga, twice rebuilt, was one of the six carriers assigned to the Kato Butai for the attack on Pearl Harbor. It was scuttled at the Battle of Midway after it was severely damaged by dive bombers from the *USS Enterprise*.

Jan 31, 2011 – Death of Charles Huron Kaman, American aeronautical engineer, businessman, inventor and philanthropist, known for his work in rotary-wing flight, musical instrument design and the breeding and training of guide dogs.



Kaman flying the K125, with Glen Campbell playing his Ovation guitars and with guide dogs.
(Credit: Fidelco)

Feb. 1, 1958 – After the successes of the Soviets and repeated American failures, the successful launch of Explorer I was, in more ways than one, an uplifting moment for the US space program.



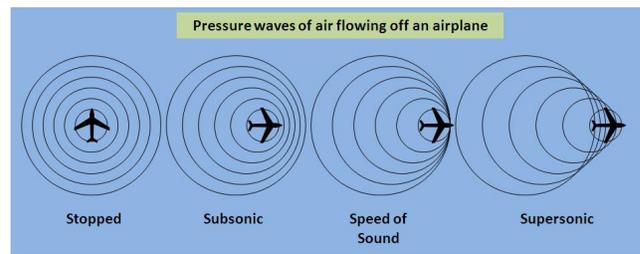
William Pickering, JPL, James Van Allen, University of Iowa and Werhner von Braun, Army Ballistic Missile Agency triumphantly hold a model of Explorer I aloft. (Credit: NASA)

Feb. 2, 2001 – First flight of the Prototype General Atomics RQ-1 Predator B, later re-designated MQ-9 Reaper.



Feb. 3, 1964 – Operation Bongo II was a Federal Aviation Administration experiment to determine the effects of sonic booms on people and structures. For six months, B-58s and F-104s flew eight flights/day scheduled for specific times between 0700 and mid-afternoon over Oklahoma City. Noise was limited to that expected from the planned supersonic transport (SST) planes.

A sonic boom is caused by the shock wave which result at supersonic speeds. Think of it like the wake of boat. Air, like water, is pushed aside and energy from the vehicle is turned into other forms of energy such as fluid displacement and noise. In the case of aircraft, the shock wave forms a cone of pressurized air which trails the aircraft. The pressure drops swiftly and the noise, a boom, is created. The “crack” of a bull-whip is a sonic boom.



(Credit: rDMBI)



“Indie” wields his whip and a conical shock wave is delineated by the condensation of air caused by the drop in pressure behind the F-22.

The noise was tolerated at first but before long, aggrieved citizen groups and their lawyers objected and claims were filed for building

damages and applied political pressure. The FAA acted in an imperious manner but finally paid (read tax-payers paid) \$123,000 to settle a class action suit. A national grass-roots campaign against the SST led to cancellation of the Boeing design leaving the field open to the Concorde and the Soviet Tu-144, both economic failures.



Mock-up of the cancelled Boeing 2707 and a British Airways Concorde at Heathrow

After what has been called the “Russian Condorskis” were retired, one was flown by NASA and the Tupolev Design Bureau to validate data acquired from wind tunnel and computer models and to study issues involved in high speed flight. Ironically, Boeing was one of the contractors.



Earlier, in 1962, the USAF treated the nation to a transcontinental sonic boom. Capts Robert G. Sowers (pilot), Robert MacDonald (navigator) and John T. Walton (defensive systems operator) flew from Los Angeles to New York City in the B-58A “Cowtown Hustler” on a Los Angeles-New York, Los Angeles round trip. They won the Bendix Trophy for their average speed of 1,200 mph.

Cowtown Hustler II



Feb 4, 1986 – All pilots who fly aircraft retractable landing gear aircraft live with the dread of a gear-up landing. A check list, automatic gear warning signals and inculcated habits are the best preventative but accidental gear-up landings are more common than one would expect.

Pakistan International Airlines Flight 300, a 747-200 may have been the largest aircraft to make an accidental gear-up landing. The “annoying” automatic gear warning signal has been disabled. The plane “touched down” at Islamabad Airport and slid some distance before stopping. ASC did not notice the problem on final approach. All 264 on board left by emergency slides and no one was injured!



Capt. Johnny Sadiq Collection historyofpia.com



Capt. Johnny Sadiq Collection historyofpia.com

The Captain's resignation was accepted. The first officer, Capt. Ahsan Aftab Bilgrami continued with PIA but was killed three years later when his Fokker F-27 crashed in the Himalayan Mountains.

The aircraft, AP-AYW, was repaired by Boeing. First flown in 1975, she served the Portuguese airline TAP until leased and then bought by PIA. PIA flew it for 13 years after her belly landing and sold it to Evergreen Aircraft in 2005 for storage in Arizona. In 2009, Baltia Air Lines purchased it. (In its thirty years of existence, Baltia had not flown a single commercial flight!) Baltia ferried to Malaysia and sold it for in 2012 US \$144,164.06. The aircraft was then scrapped.

