Missions for America
Semper vigilans!
Semper volans!

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Connecticut Wing, Civil Air Patrol

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QUICK QUIZ

What do these aircraft have in common?
The answer is at the end of this edition.

C-7 Caribou

C-23B Sherpa

HC-144A Ocean Sentry

F-21 Kfir

U-28A Draco

CURRENT, MORE OR LESS, EVENTS

Boeing Starliner

The Boeing Starliner, plagued by five sources of helium leaks, a space suit malfunction and misbehaving reaction control system thrusters will remain docked at the International Space Station until the issues are resolved. The crew, Butch Wilmore and Suni Williams, will continue to work to resolve the problems.

Starliner docked at ISS (Credit:NASA)

Chang'e-6 Probe

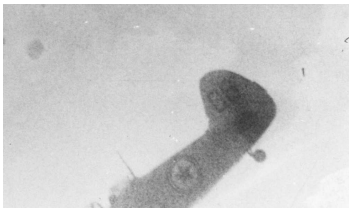
The Chinese Chang'e-8 Prove has landed in Inner Mongolia and returned the first samples of lunar material from the dark side of the moon.

Technicians examine Probe
(Credit: Xinhua/Lian Zhen)

AEROSPACE HISTORY AND CHRONOLOGY

June 27,1950– A USAF North American F-82G Twin Mustang scores the first aerial victory in the Korean Police Action shooting down a North Korean Yak-9. The Twin Mustang was flown by William Hudson and Carl Fraser served as radar operator.

F-82G night fighter of the 68th F(AW)S as flown by Lt Hudson and Fraser. The protuberance between the twin fuselages housed the radar and associated electronics



Lt Fraser's snapshot of the Yak-9 going down.

June 28, 2012 – A retreating glacier on the slopes of Mount Gannett in Alaska reveal the wreckage of an Air Force Douglas C-124A Globemaster which had been lost 60 years earlier.

C-124A at the pre-tornado New England Air Museum

The site had been found six days after the crash by noted mountaineer and scholar Terris Moore of the Fairbanks Civil Air Patrol and Lt. Thomas Sullivan from the 10th Air Rescue Squadron but had been lost when drifting snow and avalanches covered the wreckage.

An Alaska National Guard Blackhawk helicopter spotted debris at the foot of the Colony Glacier, some 12 miles from the crash site. Ground teams were dispatched and evidence secured at the site confirmed that the remnants were from the missing aircraft. The recovery operation was run by the Joint POW/MIA Accounting Command and the remains of 17 of the victims were found and returned to their next of kin.

Recovery Team working the debris field at the foot of the Colony Glacier.

A similar incident revealed the fate of the British South American Airlines Avro Lancastrian *Star Dust.*

Star Dust-The Lancastrian was the famous Lancaster bomber converted to meet airline standards.

(Credit: Charles DanielsCollection/San Diego Air Museum)

Star Dust disappeared on the night of August 2nd, 1947 on a flight from Buenos Aires, Argentina to Santiago, Chile. As has come to be expected, the conspiracy theorists and UFO zealots promoted theories ranging from sabotage to alien abduction.

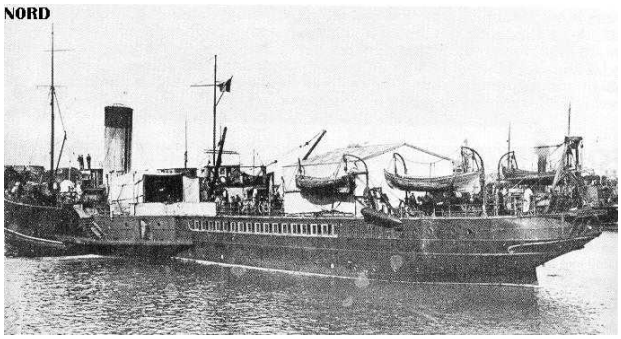
In 1998, a half century after Star Dust's disappearance, two Argentine mountaineers found wreckage identified as belonging to a Rolls-Royce Merlin engine on Mount Tupungato.

Two years later, an Argentine Army expedition found a localized debris field which included a propeller and aircraft tire. Furtherer searching found human remains. DNA testing identified the bodies of five of the eight British victims.

June 30, 1972 – The crew of Soyuz 11, Georgi Dobrovolski, Viktor Patsayev and Vladislav Volkov become the only fatalities in space. The three cosmonauts were returning to earth but faults in the system which separated their reentry capsule from the service module jars a valve in their capsule opens and the reentry vehicle depressurizes. The reentry is normal and when the recovery team opens the capsule, they are shocked to find all three dead of asphyxiation. The Soyuz is redesigned to carry only two cosmonauts which allows them to wear space suits during reentry.

Crew of the ill-fated Soyuz 11: (L-R) Commander Dobrovolsky Test Engineer Patsayev, and Flight Engineer Volkov.
(Image credit: NASA)

July 1, 1915– The French Navy seaplane carrier *Pas-de-Calais* is commissioned. She is the first paddle steamer to serve as an aviation vessel. A small hanger and hoisting gear were fitted on the deck. The aircraft complement consists of three seaplanes.



Nord, sister ship of the Pas-de-Calais. The rudimentary hangars and lifting gear are visible just aft of the stack.

The aircraft were probably Nieuport Type VI-G, mid-wing monoplanes. They had twin pontoons equipped with small planes to prevent porpoising and stepped keels to aid in breaking free of the water. A unique feature was a crank in the cockpit which wound a spring which could be used to start the engine.

The Nieuport VI was a sport airplane adopted by the French Navy to patrol for German submarines.

The French Navy had six these aircraft and it is likely that the *Pas-de-Calais's* sister ship, *Nord*, carried three of them

July 2, 1919 – The British dirigible R34 scores a double first. She is the first airship to cross the Atlantic Ocean and the first aerial east-to-west crossing. The four day crossing departed from East Fortune, Scotland and landed at Mineola, New York.

The aircrafts, designed as a war ship, lacked the amenities of a passenger ship. Accommodations consisted of hammocks and a plate welded to an engine exhaust pipe to heat food!

R34 Landing at Mineola

A crew member, William Ballantyne, had been ordered to stay behind to save weight. He stowed away with a kitten named Whoopsie. A double first: the first trans-Atlantic aerial stowaway and the first feline to cross the Atlantic by air.

The ground landing party had no experience handling large rigid airships so Major J. E. M. Pritchard parachuted onto the landing ground to organize the group party. Pritchard becomes the first person to reach America by air.

On July 10th, the R.34 taking advantage of the prevailing westerlies, returned to RNAS Pulham in a 75 hour flight.

Later, Pritchard was in charge of flight testing of the ill-fated R.38. He warned against conducting sharp turning tests at low altitude but his advice was ignored. On its fourth test flight, the R.38 broke it back and plunged into the Humber Estuary, killing 44 of the 49 aboard. Pritchard's body was not recovered.

July 3,1973 – American engineer and inventor Lauren Hammond dies at age 78 in Cornwall, Connecticut. Hammond held 110 patents, the most well known being the Hammond organ.

Hammond at the Hammond.

During World War Two, he worked to develop guided missile control systems and steering systems using light sensing and infrared technology. A typical example is the GB-5C which used a Hammond-Crossley light sensing device and Hammond gyros. The airframe was built by Aeronca.

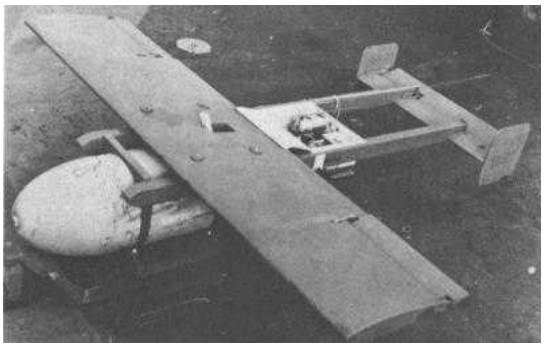
GB-5C Glide Bomb
(Credit; Ordway/Wakeford)

Most of the U.S. glide bomb experiments were unsuccessful. About 15 years ago, the Editor and his brother interviewed Jack Watson, the leader of the flight of B-17s which flew into Yankee Stadium during the 1943 World Series. His unit, the 303rd Bomb Squadron had received special training to employ the GB-1 weapon.

GB-1 release during training in Florida

The bomb was designed as a stand-off weapon allowing the bomber to release the bomb before

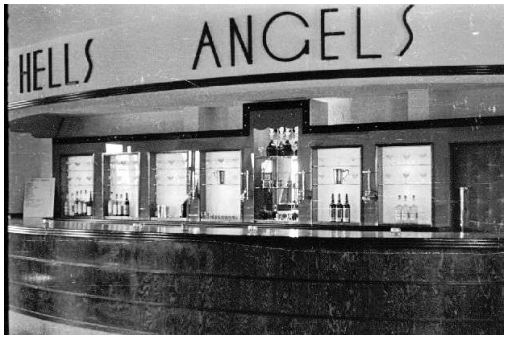
coming within range of enemy flak concentrations. In addition, the hope was that the bombing would be more accurate and that the shallow angle at which the bomb struck would cause more destruction. This hope was wishful thinking.



The GB-1 was known as the "Grapefruit Bomb." Note the crudeness of the wooden airframe and wings.
(Credit; Ordway/Wakeford)

Two GB-1s carried beneath a B-17.
(Credit" Flying Review)

Watson noted that the weapon was rarely used an ineffective but the wooden cases which they were shipped in were salvaged and used to build a first class bar for the officer's club.



Hells Angels Officers Bar, Moleworth, England
It's Good to Be an Officer!
Credit:Leonard M. Brown/303rd Website)

FEATURE ARTICLE

Twin Engines and Twin Tails
A Lockheed Signature

Part Two
The Wartime Development of the Electra Line
-From Civil Aircraft to Warbirds-

Part One of this article discussed the development of the Lockheed Models 10, 12, 14: Electra, Electra Junior and Super Electra. Collectively, approximately 600 were built and entered the commercial market and the quality of the products and

By the late 1930s, Lockheed established solid design and marketing departments but economic conditions prevented any large scale production orders. However, British manufacturing capacity strained to build up its inventory of fighters and heavy bombers and lacked the capacity to produce the light bombers and coastal patrol aircraft which it needed to meet its defense needs. Lockheed executives rapid decisions to grasp the opportunities offered by a British requirement to supplement their patrol bomber force established the company as a major aircraft supplier.

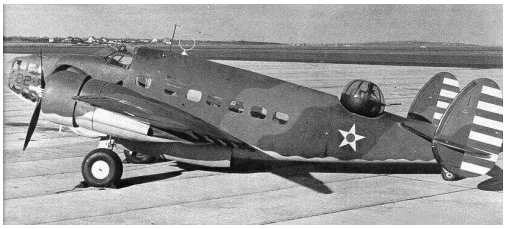
In 1937, Kelly Johnson worked on modifying the successful Model 14, Super Electra into a bomber. Shortly after Hitler annexed Austria, a British purchasing commission traveled to the United States to visit various airframe manufacturers and survey the available aircraft that would meet their immediate needs. Lockheed greeted them with a full scale wooden mockup of a Model 14, modified with a bomb bay and defensive machine gun positions. The British liked what they saw and suggested improvements. Lockheed went to work full tilt and within a few days, constructed a wooden model meeting all of the British demands.

On June 23rd, the British contracted with Lockheed for 200 aircraft, deliverable by December, 1939. This was the largest contract ever granted a U.S. manufacturer for an international sale and Lockheed met the deadline and were granted a contract for 50 more. The aircraft was named the

Hudson and by 1943, 2,941 had been built.

This Hudson III, the Spirit of Lockheed-Vega was donated by the Lockheed employees who worked for free to pay for the aircraft.

The Hudson primarily served as a maritime patrol bomber with Coastal Command. Eight different marks were built for the Commonwealth nations and they were also adopted by the U.S. military as the A-28, A-29, AT-18, C-63 and PBO-1.



Produced as an A-29, this aircraft operated as a PBO-1 by the U.S. Navy.

Before Pearl Harbor, Lockheed was working on new designs and ramping up production. One of these was the Model 18, Lodestar. The prototype was a conversion of a Model 14 Super Electra. The Super Electra was an excellent aircraft but its 14 seat passenger configuration was a loser in the cost/seatmile comparison with the Douglas DC-3. Lockheed added two extra rows of seats by stretching the Model 14 by five and a half feet bringing its passenger capacity up to 18 equaling the load of the DC-2 but three less than that of the DC-3 but equal to it in seat-mile due to its higher cruise speed.

Crowds throng around Howard Hughes' modified Lodestar after 1939 record setting world flight.

Some 625 Lodestars were built and they flew with the Army, Navy and Marines as well as number of foreign airlines and militaries. In U.S. service they were designated as the C-56,C-57, C59, C-60 and R5O depending upon mostly what engines were installed.

C-60A Lodestar at the Museum of the USAF

The Lodestar begat two warbird offsprings, the PV-1 Ventura and the PV-2 Harpoon. Lockheed was swamped with war work so the Ventura and Harpoon were constructed by its subsidiary, Vega Aircraft. Vega delivered just over 3,000 Venturas and 535 Harpoons.

The Ventura was used for a short time by RAF's Bomber Command for daylight missions over Europe but its vulnerability to Luftwaffe fighters caused it to be withdrawn and relegated to service with RAF's Coastal Command as a patrol bomber and anti-submarine aircraft. A few also served with the USAAF as the B-34 Lexington.

This Ventura pictured was built for the RAF as a Ventura II but as taken on charge by the USAAF as as RB-34. The 'R' signified that it was “restricted from combat.” The aircraft, now at the Pueblo-Weisbord Museum, was used for static testing of lightning strikes.

In 1944, the PV-2 Harpoon entered service with the Navy which contracted for 500 aircraft. The Harpoon had a greater wingspan and better take-off performance but sacrificed some speed. It also carried more fuel and was better armed however the first Harpoons exhibited dangerous wing bending and a redesign of the wing had to be made which delayed its entry into the naval inventory.The Harpoon was the last of the Lockheed designs that originated with the Model 10 Electra.

PV-2 Harpoon at the National Museum of Naval Aviation, Pensacola.

Attu Warrior, the only airworthy Harpoon. Note he heavy nose armament on the Harpoons.

In 1943, Vega was merged into Lockheed and produced 2,750 B-17 Flying Fortresses under a Boeing license.

The Lockheed war-time production line cranked out 10,000 P-38 Lightnings and its F-5 reconnaissance version until war's end. Wartime work also included design and production of the highly successful post war Constellation series, Neptune anti-submarine patrol bomber and the first jet fighter to enter U.S operational service, the P-80 Shooting Star.

During the post-war period, the Ventura and Lodestar was favored for conversion to executive transports. The talented Dee Howard modified a number of them and they were popular acquisitions by corporate America. The Howard 500 received an FAA type certificate as an all new pressurized aircraft.

The Howard 500 used some components of the Lodestar but had a new type rating, weighed in at 35.000 lb and had the performance of a the PV-2.

Howard 250 Executive

In 1995, Lockheed merged with Martin Marietta to become the Lockheed Martin Corporation and became one of the largest corporations in the world. Interestingly, the Glenn L. Martin

Company had a financial boost similar to that which Lockheed got from the British. However, for Martin, the French were the sugar daddies. Martin has a more solid record than Lockheed in the 1920s and 1930s and were a relatively successful producer of a line of bombers.

Like the British, the French were also desperate to build up their air force to counter the German threat but Martin did not have the production facilities to meet the quantities demanded by the French. So the French government invested two and a quarter million dollars to expand the Martin production facilities in Maryland. This is equivalent to over 50 million dollars today. They also ordered 325 Model 167 bomber at $130,000. And thanks to the French, Martin was prepared for wartime production and produced over 5,000 B-26 Marauders, over 1,300 PBM Mariners. They also turned turned out around 2,000 Model 163 Baltimores and Model 167 Marylands for the French and British Commonwealth.

The table at the bottom of the page lists details of typical variants of the Lockheed twin-tail, twin engine production. The trend is to build the planes larger and increase the engine power which generally leads to improvements in performance.

The ordnance loads increase and more offensive and defensive guns are added. The Harpoon was equipped with two .50 caliber guns in a dorsal turret and two more in a ventral tunnel. Five .50 caliber machine guns were nose mounted and probably served to strike the anti-aircraft mounts on submarines and surface ships.

QUIZ ANSWERS

All of the aircraft have been or are operated by the U.S. military but are produced by foreign manufacturers.

The C-7 Caribou was a deHavilland of Canada product, the DHC-4, and was flown by the Army and Air Force as a tactical air-lifter. In 1966, the Johnson-McConnell agreement transferred all of the Army C-7s to the USAF in exchange for an end to restrictions on Army rotary wing operations.

The C-23 Sherpa comes from Northern Ireland's Short Brothers. The USAF, Army and National Guard operated Sherpas. Like the Caribou, one was based with the Army National Guard at Groton-New London Airport.

The U.S. Coast Guard bought 18 Spanish built EADS North America HC-144A Ocean Sentry aircraft for maritime patrol and search and rescue. It has STOL capabilities and a rear ramp allows for easy roll-on/roll-off movement of cargo pallets or electronic electronic suites.

The F-21A Kfir (Lion Cub) is a product of Israel Aerospace Industries. A few dozen were leased by the Navy and Marines to use for dissimilar air combat training. It is based on the Dassault Mirage 5 but is upgraded with Israeli electronics and GE J79 engines.

The U-28A Draco is a version of the Swiss Pilatus PC-12. It is used by the Air Force Special Operations Command as am airborne intelligence, surveillance, and reconnaissance asset. It also can be used to insert and extract special operation teams from short unimproved airstrips.

Aircraft	span (lb)	T.O. Wt (lb)	Engines/hp	cruise (mph)	range (mi)
Electra	55	10000	P&W Wasp Jr./450hp	176	800
Electra Jr.	50	8400	P&W Wasp Jr./450hp	213	800
Super Electra	66	15500	Wright Cyclones/900 hp	215	850
Hudson	66	17500	Wright Cyclones/1100 hp	220	2000
Lodestar	66	17500	Wright 1820/1,200hp	200	2500
Ventura	66	31000	P&W R2800/2,000hp	230	1700
Harpoon	76	29000	P&W R2800/2,500hp	350	2600